ATLAS eHealth country profiles

Based on the findings of the second global survey on eHealth

Global Observatory for eHealth series - Volume 1

2010

World Health Organization

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Acknowledgments

This publication is part of a series of reports based on the second Global Observatory on eHealth (GOe) Survey. The preparation of this report would not have been possible without the input of hundreds of eHealth experts and the support of the numerous colleagues at the World Health Organization headquarters, regional and country offices.

Our sincere gratitude goes to over 800 eHealth experts in 114 countries worldwide who helped shape this report by sharing their knowledge through completing the survey. We are also indebted to an extensive network of eHealth professionals and WHO staff who assisted with the design and implementation of the survey. Names of contributors can be found at http://www.who.int/goe

Special thanks to the many authors and reviewers who contributed their time and ideas to this publication especially Titilola Falasinnu (Lola) who developed the template and compiled the secondary data for each participating Member State. The document was reviewed by colleagues Gael Kernen, Joan Dzenowagis and Ahmad Hosseinpoor.

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The global survey and this report were prepared by the WHO Global Observatory for eHealth:

Misha Kay, Jonathan Santos, and Marina Takane.

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1 A guide to the eHealth country profiles

Background

This publication presents data on the 114 WHO Member States that participated in the 2009 global survey on eHealth. Intended as a reference to the state of eHealth development in Member States, the publication highlights selected indicators in the form of country profiles.

The objectives of the country profiles are to:

- describe the current status of the use of ICT for health in Member States; and
- provide information concerning the progress of eHealth applications in these countries.

Due to layout restrictions, additional information provided by Member States could not be included in these profiles. The country survey tools may be downloaded from the following web site: http://www.who.int/goe. All country profiles can be accessed at the same URL as well as the full country data sets.

Methodological considerations

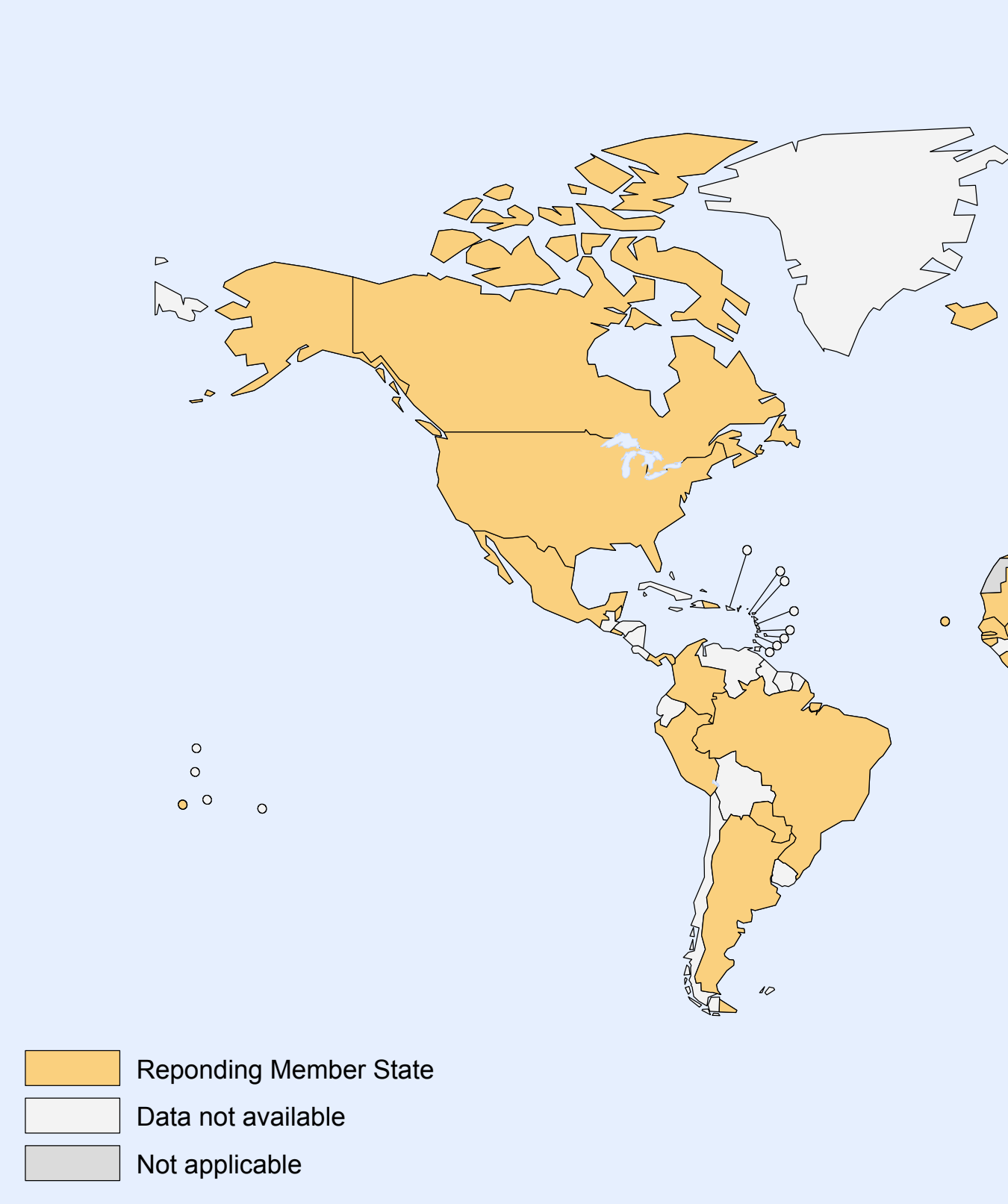
A total of 114 countries (59% of WHO Member States, representing 81% of the world's population) completed at least one section of the survey (Figure 1). The survey responses were based on self-reporting by a selected group of eHealth expert informants for each participating country. Although national survey administrators were given detailed instructions to maintain consistency, there was significant variation across participating Member States in the quality and level of detail in the responses, particularly to descriptive, open-ended questions. While survey responses were checked for consistency and accuracy, it was not possible to verify all responses to every question.

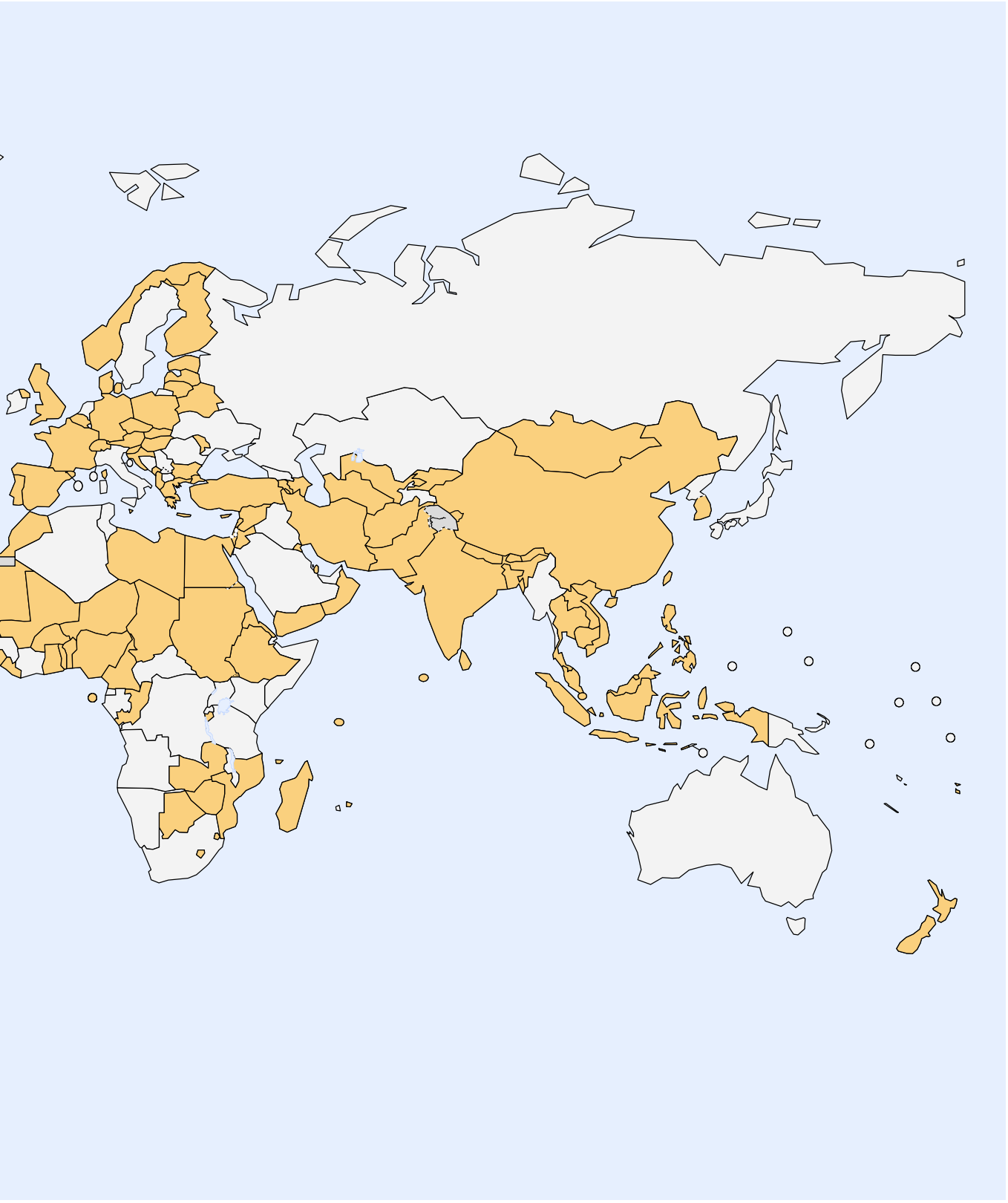
The scope of the survey was broad; survey questions covered diverse areas of eHealth, from policy issues and legal frameworks to specific types of eHealth initiatives being conducted. While every effort was made to select the best national experts to complete the instrument, it was not possible to determine whether they had the collective eHealth knowledge to answer each question. Further, there is no guarantee that national experts used the detailed instructions included with the survey when responding.

Quality assurance

Country profiles are intended to provide a 'snapshot' of the status of eHealth in WHO Member States according to selected criteria. The Global Observatory for eHealth (GOe) implemented a range of measures to assure their quality. The questionnaires received from participating countries were reviewed for completeness. External sources of information were used for validation of the data and to resolve inconsistencies. Data were reviewed before entry and after layout for publication.

Figure 1: Countries completing part or all of the global eHealth survey





Terminology and interpretation

The following terms and definitions were used in the survey and therefore apply to the country profiles. The terms are listed in the order they appear in the country profiles.

- National eGovernment policy: the vision and objectives for the use of information and communication technologies (ICT) to exchange information, provide services, and communicate with citizens, businesses, and other sectors.
- National eHealth policy: the vision and objectives to promote the use of ICT specifically for the health sector.
- National ICT procurement policy: the principles for the acquisition of software, hardware, and content for the health sector.
- National multiculturalism policy: the vision and objectives to promote and respect linguistic diversity, cultural identity, traditions, and religions within cultures.
- Personal identifiable data: information which can specifically identify an individual. This can include, but is not limited to, names, date of birth, addresses, telephone numbers, occupations, photographs, fingerprints – regardless of the format or medium in which it is held.
- Health-related data: information recorded about an individual including their illnesses and prescribed treatments. It generally includes details of prescribed medication, and any medical or surgical procedures undertaken as well as treatments received from other health-care providers.
- eHealth: the use of ICT for health
- Electronic Medical Records / Electronic Health Records (EMR/EHR): a real-time longitudinal electronic record of an individual patient's health information that can assist health professionals with decision-making and treatment. Terms used interchangeably in this survey.
- Internet pharmacies: Internet sites selling pharmaceuticals and related products.
- Funding: eHealth funding can come from a number of sources. *Public* funding is support through financial resources provided by government be it national, regional, or district level. *Private* funding is support through financial or in-kind resources provided by the private or commercial sector. *Donor/non-public* funding is support through financial or in-kind resources provided by development agencies, banks, foundations or other non-public funding bodies. These can be international, regional, or national bodies. *Public-private partnerships* are joint ventures between public organizations and private sector companies to work together to achieve a common goal.

- Capacity building: the development of the health work force through training. ICT skills and knowledge are key elements in developing an information society. They contribute to building capacity through their inclusion in education and training.
- ICT continuing education: courses or programmes for health professionals (not necessarily for formal accreditation) that bring participants up-to-date with ICT knowledge or skills for health settings.
- Telemedicine (or telehealth): involves the delivery of health services using ICT, specifically where distance is a barrier to health care. It falls under the rubric of eHealth.
- mHealth (or mobile health): a term for medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices.
- eLearning: the use of ICT for learning. It can be used to improve the quality of education, to increase accessibility to education (for those geographically isolated or those who have access to inadequate learning facilities), and to make new and innovative forms of education available to more people.

Presentation of primary data

Below is a sample of a typical table found in the country profiles. Descriptions follow, which correspond to the boxed numbers.

II. Legal and ethical frameworks for eHealth		
	Country response	**Global response (%)[as]**
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	30
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits:12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	55
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	16

1. Country response is the country's answer to "Yes/No/Do not know" questions in the survey. It could also refer to the country's selection of the options presented in closed-ended questions. The country has instituted legislation to ensure privacy of personally identifiable data of individuals irrespective of whether it is in analogue or digital format. The global response is the percentage of participating Member States responding "Yes" to questions. Alternatively, it also indicates the percentage of countries selecting an option presented in closed-ended questions. Seventy per cent of participating Member States responded that they have instituted legislation to ensure privacy of personally identifiable data of individuals irrespective of whether it is in analogue or digital format.

2. The country has no legislation that either allows or prohibits Internet pharmacy purchases from other countries. Globally, 6% of responding countries indicated that they have legislation that allows Internet pharmacy purchases from other countries. Twelve per cent have legislation that prohibits Internet pharmacy purchases from other countries.

3. The options in this section are listed in the order of global importance. Based on the aggregated responses from all participating Member States, voluntary compliance was the most cited answer (55%), while official approval through certification, accreditation, or quality seals was the least cited.

4. The country does not utilize official approval through certification, accreditation, or quality seals as a quality assurance approach to health-related Internet content. In contrast, 16% of responding countries indicated that they have adopted official approval through certification, accreditation, or quality seals as an approach to health-related Internet content.

Presentation of secondary data

The following socioeconomic indicators were selected for each country to complement the country profile information. Indicators and their sources are included below.

1. Nations Department of Economic and Social Affairs: http://esa.un.org/unpp
2. Gross national income (GNI) per capita (international $). PPP int. $ = Purchasing Power Parity at international dollar rate (2008). World Development Indicators Database, 2009. Washington, DC, World Bank, 2009: http://www.worldbank.org/data
3. World Bank income category. divided among income groups according to 2008 gross national income (GNI) per capita, calculated using the World Bank Atlas method. The groups are: low income, US$ 975 or less; lower-middle income, US$ 976–3855; upper-middle income, US$ 3856–11 905; and high income, US$ 11 906 or more. http://www.worldbank.org
4. Country grouping by OECD and non-OECD membership. For more information, see the Organisation for Economic Co-operation and Development: http://www.oecd.org
5. Life expectancy at birth in years (2007). WHO Global Atlas of the Health Workforce. Geneva, World Health Organization, 2009: http://www.who.int/whosis/whostat/EN_WHS09_Table1.pdf
6. Total health expenditure (% GDP). Total expenditure on health as percentage of gross domestic product (2010). WHO National Health Accounts (NHA) Country health expenditure database. Geneva, World Health Organization: http:www.who.int/nha/country
7. Per capita total health expenditure (PPP international $). PPP int. $ = Purchasing Power Parity at international dollar rate (2010). WHO National Health Accounts (NHA) Country health expenditure database. Geneva, World Health Organization: http://www.who.int/nha/country
8. Hospital bed density per 10 000 population (2008). WHO World Health Statistics. Geneva, World Health Organization, 2009: http://www.who.int/whosis/whostat/EN_WHS09_Table6.pdf
9. Physician density per 10 000 population (2007). WHO World Health Statistics. Geneva, World Health Organization, 2009: http://www.who.int/whosis/whostat/EN_WHS09_Table6.pdf
10. Nurse density per 10 000 population (2007): WHO World Health Statistics. Geneva, World Health Organization, 2009: http://www.who.int/whosis/whostat/EN_WHS09_Table6.pdf
11. ICT Development Index 2008. International Telecommunication Union ICT Statistics: http://www.itu.int/ITU-D/ict/publications/idi/2010/Material/MIS_2010_Summary_E.pdf
12. ICT Development Index rank 2008. International Telecommunication Union ICT Statistics: http://www.itu.int/ITU-D/ict/publications/idi/2010/Material/MIS_2010_Summary_E.pdf
13. Mobile cellular subscriptions per 100 population (2009). International Telecommunication Union ICT Statistics: http://www.itu.int/ITU-D/ICTEYE/Indicators/Indicators.aspx#
14. Internet users per 100 population (2009). International Telecommunication Union ICT Statistics: http://www.itu.int/ITU-D/ICTEYE/Indicators/Indicators.aspx#
15. Age-standardized disability-adjusted life years (DALYs) per 100 000 population. The sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability (2004). Department of Measurement and Health Information, World Health Organization, 2008: http://www.who.int/healthinfo/global_burden_disease/en/index.html

2 Country profiles

Afghanistan

Country indicators						
Population (000s)	27 208	Total health expenditure (%GDP)	7.3	ICT Development Index	–
GNI per capita (PPP Int $)	1 110	Per capita total health expenditure (PPP Int $)	84	ICT Development Index rank	–
World Bank income group	Low	Hospital bed density (per 10 000 population)	4	Mobile cellular subscriptions (per 100 population)	42.63
OECD country	No	Physician density (per 10 000 population)	2.0	Internet users (per 100 population)	3.55
Life expectancy at birth (years)	42	Nurse density (per 10 000 population)	5.0	Disability Adjusted Life Years (DALY)	61 622

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**No**	37[b]	–	–
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	–	78	–	37	–	59	–	28
Software	–	76	–	35	–	56	–	29
Pilot projects	–	69	–	33	–	51	–	28
Skills training	–	61	–	26	–	43	–	20
Ongoing support	–	61	–	19	–	35	–	18
Scholarships	–	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	–	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Albania

Country indicators						
Population (000s)	3 143	Total health expenditure (%GDP)	6.8	ICT Development Index	3.12
GNI per capita (PPP Int $)	8 170	Per capita total health expenditure (PPP Int $)	536	ICT Development Index rank	83
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	29	Mobile cellular subscriptions (per 100 population)	131.89
OECD country	No	Physician density (per 10 000 population)	11.5	Internet users (per 100 population)	41.20
Life expectancy at birth (years)	73	Nurse density (per 10 000 population)	40.3	Disability Adjusted Life Years (DALY)	16 106

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2004**
National eHealth policy	**Yes**	55[b]	**Partly**	**2004**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2007**
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**No**	56	—	29
Pilot projects	**No**	69	—	33	**No**	51	—	28
Skills training	**No**	61	—	26	**No**	43	—	20
Ongoing support	**No**	61	—	19	**No**	35	—	18
Scholarships	**No**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**No**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	–	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	Yes	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Argentina

Country indicators						
Population (000s)	39 883	Total health expenditure (%GDP)	9.6	ICT Development Index	4.38
GNI per capita (PPP Int $)	14 120	Per capita total health expenditure (PPP Int $)	1 385	ICT Development Index rank	49
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	41	Mobile cellular subscriptions (per 100 population)	130.31
OECD country	No	Physician density (per 10 000 population)	31.6	Internet users (per 100 population)	34.00
Life expectancy at birth (years)	76	Nurse density (per 10 000 population)	4.8	Disability Adjusted Life Years (DALY)	15 371

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2005**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**No**	61	**No**	26	**No**	43	**No**	20
Ongoing support	**No**	61	**No**	19	**No**	35	**No**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**Yes**	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Armenia

Country indicators								
	Population (000s)	3 077	Total health expenditure (%GDP)	3.8	ICT Development Index	2.94
	GNI per capita (PPP Int $)	5 420	Per capita total health expenditure (PPP Int $)	228	ICT Development Index rank	88
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	41	Mobile cellular subscriptions (per 100 population)	84.98
	OECD country	No	Physician density (per 10 000 population)	37.0	Internet users (per 100 population)	6.75
	Life expectancy at birth (years)	70	Nurse density (per 10 000 population)	48.7	Disability Adjusted Life Years (DALY)	18 411

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**No**	37[b]	–	–
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Do not know**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Do not know**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	**Yes**	37	**Yes**	59	–	28
Software	**No**	76	**Yes**	35	**Yes**	56	–	29
Pilot projects	**No**	69	**Yes**	33	**Yes**	51	–	28
Skills training	**No**	61	**Yes**	26	**Yes**	43	–	20
Ongoing support	**No**	61	**No**	19	**No**	35	–	18
Scholarships	**No**	28	**No**	8	**Yes**	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**No**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**Yes**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Austria

Country indicators						
Population (000s)	8 337	Total health expenditure (%GDP)	10.1	ICT Development Index	6.72
GNI per capita (PPP Int $)	38 550	Per capita total health expenditure (PPP Int $)	3 836	ICT Development Index rank	17
World Bank income group	High	Hospital bed density (per 10 000 population)	78	Mobile cellular subscriptions (per 100 population)	136.71
OECD country	Yes	Physician density (per 10 000 population)	37.9	Internet users (per 100 population)	73.45
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	66.4	Disability Adjusted Life Years (DALY)	10 223

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2006**
National eHealth policy	**Yes**	55[b]	**Partly**	**2006**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**No**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**No**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**No**	43	**No**	20
Ongoing support	**Yes**	61	**Yes**	19	**No**	35	**No**	18
Scholarships	**Yes**	28	**Yes**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**No**	60
Dentistry	**Yes**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	No	71
Public health	Yes	52	Yes	56
Nursing	No	50	Yes	55
Pharmacy	No	45	No	37
Dentistry	Yes	39	No	37

[a] n=113
[b] n=112
[c] n=114

Azerbaijan

Country indicators						
Population (000s)	8 731	Total health expenditure (%GDP)	3.6	ICT Development Index	3.18
GNI per capita (PPP Int $)	9 030	Per capita total health expenditure (PPP Int $)	316	ICT Development Index rank	81
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	79	Mobile cellular subscriptions (per 100 population)	87.83
OECD country	No	Physician density (per 10 000 population)	37.9	Internet users (per 100 population)	27.40
Life expectancy at birth (years)	68	Nurse density (per 10 000 population)	84.2	Disability Adjusted Life Years (DALY)	21 525

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2003**
National eHealth policy	**Yes**	55[b]	**Partly**	**2005**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	—	28
Skills training	**Yes**	61	—	26	**Yes**	43	—	20
Ongoing support	**No**	61	—	19	**No**	35	—	18
Scholarships	**No**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Bangladesh

Country indicators						
Population (000s)	160 000	Total health expenditure (%GDP)	3.5	ICT Development Index	1.41
GNI per capita (PPP Int $)	1 580	Per capita total health expenditure (PPP Int $)	47	ICT Development Index rank	137
World Bank income group	Low	Hospital bed density (per 10 000 population)	4	Mobile cellular subscriptions (per 100 population)	32.32
OECD country	No	Physician density (per 10 000 population)	3.0	Internet users (per 100 population)	0.38
Life expectancy at birth (years)	65	Nurse density (per 10 000 population)	2.8	Disability Adjusted Life Years (DALY)	27 532

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2002**
National eHealth policy	**No**	55[b]	**—**	**—**
National ICT procurement policy for health sector	**No**	37[b]	**—**	**—**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2007**
National telemedicine policy	**No**	25[c]	**—**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**—**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**—**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**—**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**—**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**—**	18
Scholarships	**No**	28	**No**	8	**No**	19	**—**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Belarus

Country indicators						
Population (000s)	9 679	Total health expenditure (%GDP)	6.5	ICT Development Index	4.07
GNI per capita (PPP Int $)	12 380	Per capita total health expenditure (PPP Int $)	800	ICT Development Index rank	55
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	112	Mobile cellular subscriptions (per 100 population)	100.55
OECD country	No	Physician density (per 10 000 population)	48.7	Internet users (per 100 population)	27.43
Life expectancy at birth (years)	70	Nurse density (per 10 000 population)	125.6	Disability Adjusted Life Years (DALY)	19 388

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2003**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Do not know**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	—	28
Skills training	**Yes**	61	—	26	**No**	43	—	20
Ongoing support	**No**	61	—	19	**No**	35	—	18
Scholarships	**No**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Do not know**	77
Institutions offer continuing education in ICT for health professionals	**Do not know**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Belgium

Country indicators						
Population (000s)	10 590	Total health expenditure (%GDP)	9.7	ICT Development Index	6.36
GNI per capita (PPP Int $)	36 520	Per capita total health expenditure (PPP Int $)	3 392	ICT Development Index rank	23
World Bank income group	High	Hospital bed density (per 10 000 population)	53	Mobile cellular subscriptions (per 100 population)	117.49
OECD country	Yes	Physician density (per 10 000 population)	42.3	Internet users (per 100 population)	76.20
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	5.3	Disability Adjusted Life Years (DALY)	10 750

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2000**
National eHealth policy	**Yes**	55[b]	**Partly**	**2005**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2003**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**Before 2000**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Yes**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	—	59	**No**	28
Software	**Yes**	76	**Yes**	35	—	56	**No**	29
Pilot projects	**Yes**	69	**Yes**	33	—	51	**Yes**	28
Skills training	**No**	61	**Yes**	26	—	43	**No**	20
Ongoing support	**Yes**	61	**Yes**	19	—	35	**No**	18
Scholarships	**No**	28	**No**	8	—	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	No	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	No	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	No	56
Nursing	No	50	No	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Belize

Country indicators							
	Population (000s)	301	Total health expenditure (%GDP)	4.0	ICT Development Index	—
	GNI per capita (PPP Int $)	5 950	Per capita total health expenditure (PPP Int $)	288	ICT Development Index rank	—
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	12	Mobile cellular subscriptions (per 100 population)	52.74
	OECD country	No	Physician density (per 10 000 population)	10.5	Internet users (per 100 population)	11.73
	Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	12.6	Disability Adjusted Life Years (DALY)	21 180

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**No**	**—**
National ICT procurement policy for health sector	**No**	37[b]	**—**	**—**
National multiculturalism policy for eHealth	**No**	30[b]	**—**	**—**
National telemedicine policy	**No**	25[c]	**—**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**No**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**No**	33	**Yes**	51	**No**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**No**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**Yes**	18
Scholarships	**Yes**	28	**Yes**	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	No	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	—	68	Yes	71
Public health	—	52	Yes	56
Nursing	—	50	Yes	55
Pharmacy	—	45	No	37
Dentistry	—	39	No	37

[a] n=113
[b] n=112
[c] n=114

Benin

Country indicators						
Population (000s)	8 662	Total health expenditure (%GDP)	4.8	ICT Development Index	1.35
GNI per capita (PPP Int $)	1 510	Per capita total health expenditure (PPP Int $)	72	ICT Development Index rank	141
World Bank income group	Low	Hospital bed density (per 10 000 population)	5	Mobile cellular subscriptions (per 100 population)	56.33
OECD country	No	Physician density (per 10 000 population)	0.6	Internet users (per 100 population)	2.24
Life expectancy at birth (years)	57	Nurse density (per 10 000 population)	7.7	Disability Adjusted Life Years (DALY)	37 601

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2003**
National eHealth policy	**No**	55[b]	**—**	**—**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2000**
National multiculturalism policy for eHealth	**No**	30[b]	**—**	**—**
National telemedicine policy	**No**	25[c]	**—**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**No**	69	**No**	33	**No**	51	**No**	28
Skills training	**No**	61	**No**	26	**Yes**	43	**No**	20
Ongoing support	**No**	61	**No**	19	**No**	35	**No**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"
[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	–	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	Yes	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	Yes	37
Lack of demand	Yes	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Bhutan

Country indicators							
	Population (000s)	687	Total health expenditure (%GDP)	3.9	ICT Development Index	1.62
	GNI per capita (PPP Int $)	5 300	Per capita total health expenditure (PPP Int $)	193	ICT Development Index rank	123
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	17	Mobile cellular subscriptions (per 100 population)	48.60
	OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	7.17
	Life expectancy at birth (years)	63	Nurse density (per 10 000 population)	2.4	Disability Adjusted Life Years (DALY)	25 734

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2004**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	—	28
Skills training	**Yes**	61	—	26	**Yes**	43	—	20
Ongoing support	**Yes**	61	—	19	**No**	35	—	18
Scholarships	**Yes**	28	—	8	**Yes**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**No**	68	**No**	71
Public health	**Yes**	52	**No**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Botswana

Country indicators							
	Population (000s)	1 921	Total health expenditure (%GDP)	5.6	ICT Development Index	2.30
	GNI per capita (PPP Int $)	12 860	Per capita total health expenditure (PPP Int $)	779	ICT Development Index rank	109
	World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	18	Mobile cellular subscriptions (per 100 population)	96.12
	OECD country	No	Physician density (per 10 000 population)	4.0	Internet users (per 100 population)	6.15
	Life expectancy at birth (years)	61	Nurse density (per 10 000 population)	26.5	Disability Adjusted Life Years (DALY)	53 389

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2003**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**Before 2000**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2009**
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Do not know**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**No**	69	**Yes**	33	**Yes**	51	**No**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**Yes**	18
Scholarships	**Yes**	28	**No**	8	**Yes**	19	**Yes**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**Yes**	25
Implemented national telemedicine policy	**Partly**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**No**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Brazil

Country indicators						
Population (000s)	191 972	Total health expenditure (%GDP)	8.4	ICT Development Index	3.81
GNI per capita (PPP Int $)	10 260	Per capita total health expenditure (PPP Int $)	904	ICT Development Index rank	60
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	24	Mobile cellular subscriptions (per 100 population)	89.79
OECD country	No	Physician density (per 10 000 population)	16.9	Internet users (per 100 population)	39.22
Life expectancy at birth (years)	73	Nurse density (per 10 000 population)	29.1	Disability Adjusted Life Years (DALY)	20 112

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2005**
National eHealth policy	**Do not know**	55[b]	—	—
National ICT procurement policy for health sector	**Do not know**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**Do not know**
National telemedicine policy	**Yes**	25[c]	**Yes**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Do not know**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**No**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Yes	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No data	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No data	60
Lack of legal policies/regulation	No data	40
Organizational culture not supportive	No data	39
Underdeveloped infrastructure	No data	38
Lack of policy frameworks	No data	37
Competing priorities	No data	37
Lack of demand by health professionals	No data	31
Lack of nationally adopted standards	No data	26
Lack of knowledge of applications	No data	25
Lack of technical expertise	No data	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	No	45
Effect on human resources	Yes	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No data	12
Barriers to implementing mHealth initiatives		
Competing priorities	No data	53
Lack of knowledge of applications	No data	47
Lack of policy framework	No data	44
Cost effectiveness unknown	No data	40
Lack of legal policies/regulation	No data	38
Perceived costs too high	No data	37
Lack of demand	No data	29
Underdeveloped infrastructure	No data	26
Lack of technical expertise	No data	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	No	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	No	37
Dentistry	Yes	39	No	37

[a] n=113
[b] n=112
[c] n=114

Brunei Darussalam

Country indicators						
Population (000s)	392	Total health expenditure (%GDP)	2.4	ICT Development Index	5.07
GNI per capita (PPP Int $)	50 920	Per capita total health expenditure (PPP Int $)	1 194	ICT Development Index rank	42
World Bank income group	High	Hospital bed density (per 10 000 population)	26	Mobile cellular subscriptions (per 100 population)	103.30
OECD country	No	Physician density (per 10 000 population)	11.4	Internet users (per 100 population)	78.78
Life expectancy at birth (years)	76	Nurse density (per 10 000 population)	60.6	Disability Adjusted Life Years (DALY)	13 132

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2000**
National eHealth policy	**Yes**	55[b]	**Partly**	**2001**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2000**
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**No**	56	—	29
Pilot projects	**Yes**	69	—	33	**No**	51	—	28
Skills training	**Yes**	61	—	26	**No**	43	—	20
Ongoing support	**Yes**	61	—	19	**No**	35	—	18
Scholarships	**Yes**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Do not know**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Do not know**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No data**	64
Lack of policy framework	**No data**	63
Lack of skilled course developers	**No data**	55
Lack of knowledge of applications	**No data**	46
Perceived costs too high	**No data**	45
Availability of suitable courses	**No data**	42
Lack of demand	**No data**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Bulgaria

Country indicators						
Population (000s)	7 593	Total health expenditure (%GDP)	7.3	ICT Development Index	4.87
GNI per capita (PPP Int $)	12 290	Per capita total health expenditure (PPP Int $)	910	ICT Development Index rank	43
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	64	Mobile cellular subscriptions (per 100 population)	140.18
OECD country	No	Physician density (per 10 000 population)	36.7	Internet users (per 100 population)	45.00
Life expectancy at birth (years)	73	Nurse density (per 10 000 population)	46.8	Disability Adjusted Life Years (DALY)	15 218

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2002**
National eHealth policy	**Yes**	55[b]	**Partly**	**2006**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Yes**	25[c]	**No data**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**No**	43	**Yes**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**No**	18
Scholarships	**Yes**	28	**Yes**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	No data	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Burkina Faso

Country indicators						
Population (000s)	15 234	Total health expenditure (%GDP)	5.6	ICT Development Index	0.98
GNI per capita (PPP Int $)	1 170	Per capita total health expenditure (PPP Int $)	69	ICT Development Index rank	155
World Bank income group	Low	Hospital bed density (per 10 000 population)	9	Mobile cellular subscriptions (per 100 population)	24.27
OECD country	No	Physician density (per 10 000 population)	0.6	Internet users (per 100 population)	1.13
Life expectancy at birth (years)	51	Nurse density (per 10 000 population)	7.3	Disability Adjusted Life Years (DALY)	45 867

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2006**
National eHealth policy	**No**	55[b]	**–**	**–**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2007**
National multiculturalism policy for eHealth	**No**	30[b]	**–**	**–**
National telemedicine policy	**No**	25[c]	**–**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No data**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**–**	37	**Yes**	59	**–**	28
Software	**Yes**	76	**–**	35	**Yes**	56	**–**	29
Pilot projects	**Yes**	69	**–**	33	**Yes**	51	**–**	28
Skills training	**Yes**	61	**–**	26	**Yes**	43	**–**	20
Ongoing support	**Yes**	61	**–**	19	**Yes**	35	**–**	18
Scholarships	**Yes**	28	**–**	8	**No**	19	**–**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"
[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**–**	71
Public health	**Yes**	52	**–**	56
Nursing	**Yes**	50	**–**	55
Pharmacy	**Yes**	45	**–**	37
Dentistry	**Yes**	39	**–**	37

[a] n=113
[b] n=112
[c] n=114

Burundi

Country indicators						
Population (000s)	8 074	Total health expenditure (%GDP)	13.6	ICT Development Index	–
GNI per capita (PPP Int $)	390	Per capita total health expenditure (PPP Int $)	52	ICT Development Index rank	–
World Bank income group	Low	Hospital bed density (per 10 000 population)	7	Mobile cellular subscriptions (per 100 population)	10.10
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	1.90
Life expectancy at birth (years)	50	Nurse density (per 10 000 population)	1.9	Disability Adjusted Life Years (DALY)	54 480

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2007**
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	–	37	**Yes**	59	–	28
Software	**No**	76	–	35	**Yes**	56	–	29
Pilot projects	**Yes**	69	–	33	**Yes**	51	–	28
Skills training	**No**	61	–	26	**Yes**	43	–	20
Ongoing support	**No**	61	–	19	**Yes**	35	–	18
Scholarships	**No**	28	–	8	**No**	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"
[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**No**	71
Public health	**No**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Cambodia

Country indicators							
	Population (000s)	14 562	Total health expenditure (%GDP)	6.6	ICT Development Index	1.70
	GNI per capita (PPP Int $)	1 850	Per capita total health expenditure (PPP Int $)	138	ICT Development Index rank	120
	World Bank income group	Low	Hospital bed density (per 10 000 population)	—	Mobile cellular subscriptions (per 100 population)	42.34
	OECD country	No	Physician density (per 10 000 population)	1.6	Internet users (per 100 population)	0.53
	Life expectancy at birth (years)	62	Nurse density (per 10 000 population)	8.5	Disability Adjusted Life Years (DALY)	36 720

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Do not know**	85[b]	—	—
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**Do not know**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Do not know**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Do not know**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	—	59	—	28
Software	—	76	—	35	—	56	—	29
Pilot projects	—	69	—	33	—	51	—	28
Skills training	—	61	—	26	—	43	—	20
Ongoing support	—	61	—	19	—	35	—	18
Scholarships	—	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Cameroon

Country indicators							
	Population (000s)	19 088	Total health expenditure (%GDP)	5.5	ICT Development Index	1.40
	GNI per capita (PPP Int $)	2 200	Per capita total health expenditure (PPP Int $)	121	ICT Development Index rank	138
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	15	Mobile cellular subscriptions (per 100 population)	41.00
	OECD country	No	Physician density (per 10 000 population)	1.9	Internet users (per 100 population)	3.84
	Life expectancy at birth (years)	53	Nurse density (per 10 000 population)	16.0	Disability Adjusted Life Years (DALY)	42 856

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2009**
National eHealth policy	**No**	55[b]	**—**	**—**
National ICT procurement policy for health sector	**No**	37[b]	**—**	**—**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**2005**
National telemedicine policy	**No**	25[c]	**—**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	**Yes**	59	**Yes**	28
Software	—	76	—	35	**Yes**	56	**No**	29
Pilot projects	—	69	—	33	**Yes**	51	**Yes**	28
Skills training	—	61	—	26	**Yes**	43	**No**	20
Ongoing support	—	61	—	19	**Yes**	35	**No**	18
Scholarships	—	28	—	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Canada

Country indicators						
Population (000s)	33 259	Total health expenditure (%GDP)	10.3	ICT Development Index	6.49
GNI per capita (PPP Int $)	37 590	Per capita total health expenditure (PPP Int $)	4 095	ICT Development Index rank	21
World Bank income group	High	Hospital bed density (per 10 000 population)	34	Mobile cellular subscriptions (per 100 population)	70.92
OECD country	Yes	Physician density (per 10 000 population)	19.1	Internet users (per 100 population)	80.30
Life expectancy at birth (years)	81	Nurse density (per 10 000 population)	100.5	Disability Adjusted Life Years (DALY)	10 321

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Partly**	**Before 2000**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	—	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	—	28
Skills training	**Yes**	61	**No**	26	**No**	43	—	20
Ongoing support	**Yes**	61	**No**	19	**No**	35	—	18
Scholarships	**No**	28	**No**	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"
[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**No**	45	**Yes**	37
Dentistry	**No**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Cape Verde

Country indicators								
	Population (000s)	499	Total health expenditure (%GDP)	4.3	ICT Development Index	2.62
	GNI per capita (PPP Int $)	3 530	Per capita total health expenditure (PPP Int $)	151	ICT Development Index rank	102
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	21	Mobile cellular subscriptions (per 100 population)	57.48
	OECD country	No	Physician density (per 10 000 population)	5.7	Internet users (per 100 population)	29.67
	Life expectancy at birth (years)	71	Nurse density (per 10 000 population)	13.2	Disability Adjusted Life Years (DALY)	18 788

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2005**
National eHealth policy	**Yes**	55[b]	**Partly**	**2005**
National ICT procurement policy for health sector	**No**	37[b]	**–**	**–**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**2005**
National telemedicine policy	**No**	25[c]	**–**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**–**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**–**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**–**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**–**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**–**	19	**Yes**	35	**Yes**	18
Scholarships	**No**	28	**–**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No data**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**No**	68	**Yes**	71
Public health	**Yes**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Chad

Country indicators						
Population (000s)	10 914	Total health expenditure (%GDP)	4.9	ICT Development Index	0.79
GNI per capita (PPP Int $)	1 230	Per capita total health expenditure (PPP Int $)	72	ICT Development Index rank	159
World Bank income group	Low	Hospital bed density (per 10 000 population)	4	Mobile cellular subscriptions (per 100 population)	20.36
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	1.50
Life expectancy at birth (years)	46	Nurse density (per 10 000 population)	2.8	Disability Adjusted Life Years (DALY)	49 265

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**No**	37[b]	–	–
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**Before 2000**
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Do not know**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	–	78	–	37	–	59	–	28
Software	–	76	–	35	–	56	–	29
Pilot projects	–	69	–	33	–	51	–	28
Skills training	–	61	–	26	–	43	–	20
Ongoing support	–	61	–	19	–	35	–	18
Scholarships	–	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Do not know**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

China

Country indicators								
	Population (000s)	1 344 920	Total health expenditure (%GDP)	4.3	ICT Development Index	3.23
	GNI per capita (PPP Int $)	6 770	Per capita total health expenditure (PPP Int $)	259	ICT Development Index rank	79
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	30	Mobile cellular subscriptions (per 100 population)	55.52
	OECD country	No	Physician density (per 10 000 population)	14.2	Internet users (per 100 population)	28.90
	Life expectancy at birth (years)	74	Nurse density (per 10 000 population)	9.6	Disability Adjusted Life Years (DALY)	15 750

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2005**
National eHealth policy	**Yes**	55[b]	**Partly**	**2003**
National ICT procurement policy for health sector	**No**	37[b]	**—**	**—**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2004**
National telemedicine policy	**Yes**	25[c]	**Partly**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Allows**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**—**	37	**—**	59	**No**	28
Software	**Yes**	76	**—**	35	**—**	56	**Yes**	29
Pilot projects	**Yes**	69	**—**	33	**—**	51	**Yes**	28
Skills training	**No**	61	**—**	26	**—**	43	**No**	20
Ongoing support	**No**	61	**—**	19	**—**	35	**No**	18
Scholarships	**No**	28	**—**	8	**—**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**Yes**	25
Implemented national telemedicine policy	**Partly**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Colombia

Country indicators							
	Population (000s)	45 012	Total health expenditure (%GDP)	5.9	ICT Development Index	3.65
	GNI per capita (PPP Int $)	8 500	Per capita total health expenditure (PPP Int $)	518	ICT Development Index rank	63
	World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	10	Mobile cellular subscriptions (per 100 population)	92.33
	OECD country	No	Physician density (per 10 000 population)	13.5	Internet users (per 100 population)	49.36
	Life expectancy at birth (years)	75	Nurse density (per 10 000 population)	5.5	Disability Adjusted Life Years (DALY)	19 816

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2000**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	—	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	**Yes**	28
Skills training	**No**	61	—	26	**No**	43	**Yes**	20
Ongoing support	**Yes**	61	—	19	**No**	35	**No**	18
Scholarships	**No**	28	—	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Comoros

Country indicators						
Population (000s)	661	Total health expenditure (%GDP)	3.3	ICT Development Index	1.46
GNI per capita (PPP Int $)	1 300	Per capita total health expenditure (PPP Int $)	38	ICT Development Index rank	134
World Bank income group	Low	Hospital bed density (per 10 000 population)	22	Mobile cellular subscriptions (per 100 population)	18.49
OECD country	No	Physician density (per 10 000 population)	1.5	Internet users (per 100 population)	3.59
Life expectancy at birth (years)	60	Nurse density (per 10 000 population)	7.4	Disability Adjusted Life Years (DALY)	24 622

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**No**	—
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No data**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	**Yes**	59	—	28
Software	—	76	—	35	**Yes**	56	—	29
Pilot projects	—	69	—	33	**No**	51	—	28
Skills training	—	61	—	26	**Yes**	43	—	20
Ongoing support	—	61	—	19	**No**	35	—	18
Scholarships	—	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Congo

Country indicators							
Population (000s)	3 615	Total health expenditure (%GDP)	1.8	ICT Development Index	1.48
GNI per capita (PPP Int $)	2 940	Per capita total health expenditure (PPP Int $)	70	ICT Development Index rank	132
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	16	Mobile cellular subscriptions (per 100 population)	58.94
OECD country	No	Physician density (per 10 000 population)	0.9	Internet users (per 100 population)	6.66
Life expectancy at birth (years)	54	Nurse density (per 10 000 population)	8.2	Disability Adjusted Life Years (DALY)	35 954

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**No**	37[b]	–	–
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	–	37	–	59	**No**	28
Software	**No**	76	–	35	–	56	**No**	29
Pilot projects	**Yes**	69	–	33	–	51	**No**	28
Skills training	**No**	61	–	26	–	43	**No**	20
Ongoing support	**No**	61	–	19	–	35	**No**	18
Scholarships	**No**	28	–	8	–	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	—	68	—	71
Public health	—	52	—	56
Nursing	—	50	—	55
Pharmacy	—	45	—	37
Dentistry	—	39	—	37

[a] n=113
[b] n=112
[c] n=114

Croatia

Country indicators						
Population (000s)	4 423	Total health expenditure (%GDP)	7.8	ICT Development Index	5.53
GNI per capita (PPP Int $)	19 170	Per capita total health expenditure (PPP Int $)	1 496	ICT Development Index rank	36
World Bank income group	High	Hospital bed density (per 10 000 population)	53	Mobile cellular subscriptions (per 100 population)	136.66
OECD country	No	Physician density (per 10 000 population)	25.9	Internet users (per 100 population)	50.58
Life expectancy at birth (years)	76	Nurse density (per 10 000 population)	55.8	Disability Adjusted Life Years (DALY)	13 176

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2009**
National eHealth policy	**Yes**	55[b]	**Partly**	**2006**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**No**	61	—	19	—	35	—	18
Scholarships	**Yes**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	No	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	No	83
Formal evaluation and/or publication of mHealth initiatives	No data	12
Barriers to implementing mHealth initiatives		
Competing priorities	No data	53
Lack of knowledge of applications	No data	47
Lack of policy framework	No data	44
Cost effectiveness unknown	No data	40
Lack of legal policies/regulation	No data	38
Perceived costs too high	No data	37
Lack of demand	No data	29
Underdeveloped infrastructure	No data	26
Lack of technical expertise	No data	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	No	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	No	37
Dentistry	Yes	39	No	37

[a] n=113
[b] n=112
[c] n=114

Cyprus

Country indicators						
Population (000s)	862	Total health expenditure (%GDP)	6.7	ICT Development Index	5.37
GNI per capita (PPP Int $)	28 050	Per capita total health expenditure (PPP Int $)	3 312	ICT Development Index rank	39
World Bank income group	High	Hospital bed density (per 10 000 population)	37	Mobile cellular subscriptions (per 100 population)	122.02
OECD country	No	Physician density (per 10 000 population)	23.0	Internet users (per 100 population)	49.81
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	39.8	Disability Adjusted Life Years (DALY)	11 812

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2001**
National eHealth policy	**Yes**	55[b]	**Partly**	**2005**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2009**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Do not know**	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	—	71
Public health	No	52	—	56
Nursing	Yes	50	—	55
Pharmacy	No	45	—	37
Dentistry	No	39	—	37

[a] n=113
[b] n=112
[c] n=114

Czech Republic

Country indicators						
Population (000s)	10 319	Total health expenditure (%GDP)	6.8	ICT Development Index	5.45
GNI per capita (PPP Int $)	23 610	Per capita total health expenditure (PPP Int $)	1 684	ICT Development Index rank	37
World Bank income group	High	Hospital bed density (per 10 000 population)	81	Mobile cellular subscriptions (per 100 population)	137.51
OECD country	Yes	Physician density (per 10 000 population)	36.1	Internet users (per 100 population)	64.43
Life expectancy at birth (years)	77	Nurse density (per 10 000 population)	89.5	Disability Adjusted Life Years (DALY)	57 468

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Partly**	**2008**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Allows**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Allows**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**No**	59	**Yes**	28
Software	**Yes**	76	**No**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**No**	61	**No**	26	**Yes**	43	**No**	20
Ongoing support	**No**	61	**No**	19	**No**	35	**No**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Denmark

Country indicators						
Population (000s)	5 458	Total health expenditure (%GDP)	9.9	ICT Development Index	7.53
GNI per capita (PPP Int $)	37 720	Per capita total health expenditure (PPP Int $)	3 630	ICT Development Index rank	4
World Bank income group	High	Hospital bed density (per 10 000 population)	35	Mobile cellular subscriptions (per 100 population)	124.97
OECD country	Yes	Physician density (per 10 000 population)	31.6	Internet users (per 100 population)	86.84
Life expectancy at birth (years)	79	Nurse density (per 10 000 population)	97.6	Disability Adjusted Life Years (DALY)	11 286

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2008**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2008**
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No data**	47
Security tools required by law for facilities used by children	**No data**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	—	37	—	59	—	28
Software	**No**	76	—	35	—	56	—	29
Pilot projects	**No**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No data	60
Lack of legal policies/regulation	No data	40
Organizational culture not supportive	No data	39
Underdeveloped infrastructure	No data	38
Lack of policy frameworks	No data	37
Competing priorities	No data	37
Lack of demand by health professionals	No data	31
Lack of nationally adopted standards	No data	26
Lack of knowledge of applications	No data	25
Lack of technical expertise	No data	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No data	69
Clinical possibilities	No data	58
Infrastructure	No data	52
Evaluation	No data	46
Legal and ethical	No data	45
Effect on human resources	No data	40
Patients' perception	No data	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	No	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	No	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	No	68	No	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Dominican Republic

Country indicators							
	Population (000s)	9 953	Total health expenditure (%GDP)	5.5	ICT Development Index	2.91
	GNI per capita (PPP Int $)	8 100	Per capita total health expenditure (PPP Int $)	446	ICT Development Index rank	89
	World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	10	Mobile cellular subscriptions (per 100 population)	85.53
	OECD country	No	Physician density (per 10 000 population)	18.8	Internet users (per 100 population)	26.77
	Life expectancy at birth (years)	73	Nurse density (per 10 000 population)	18.4	Disability Adjusted Life Years (DALY)	22 595

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2004**
National eHealth policy	**No**	55[b]	**—**	**—**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2008**
National multiculturalism policy for eHealth	**No**	30[b]	**—**	**—**
National telemedicine policy	**No**	25[c]	**—**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**—**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**—**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**—**	33	**No**	51	**No**	28
Skills training	**Yes**	61	**—**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**—**	19	**No**	35	**No**	18
Scholarships	**Yes**	28	**—**	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Egypt

Country indicators								
	Population (000s)	81 527	Total health expenditure (%GDP)	6.4	ICT Development Index	2.70
	GNI per capita (PPP Int $)	5 690	Per capita total health expenditure (PPP Int $)	333	ICT Development Index rank	96
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	21	Mobile cellular subscriptions (per 100 population)	66.69
	OECD country	No	Physician density (per 10 000 population)	24.3	Internet users (per 100 population)	24.26
	Life expectancy at birth (years)	69	Nurse density (per 10 000 population)	33.5	Disability Adjusted Life Years (DALY)	20 261

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2006**
National eHealth policy	**Yes**	55[b]	**Partly**	**2006**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**Do not know**
National multiculturalism policy for eHealth	**No data**	30[b]	**No data**	**No data**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Do not know**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	**No**	28
Software	**Yes**	76	—	35	**No**	56	**No**	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	—	26	**No**	43	**Yes**	20
Ongoing support	**Yes**	61	—	19	**No**	35	**Yes**	18
Scholarships	**Yes**	28	—	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No data**	77
Institutions offer continuing education in ICT for health professionals	**No data**	75
Professional groups offered ICT continuing education		
Medical	**No data**	73
Nursing	**No data**	62
Public health	**No data**	60
Dentistry	**No data**	54
Pharmacy	**No data**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**No**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**Yes**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

El Salvador

Country indicators						
Population (000s)	6 134	Total health expenditure (%GDP)	6.0	ICT Development Index	2.61
GNI per capita (PPP Int $)	6 360	Per capita total health expenditure (PPP Int $)	410	ICT Development Index rank	103
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	8	Mobile cellular subscriptions (per 100 population)	122.77
OECD country	No	Physician density (per 10 000 population)	12.4	Internet users (per 100 population)	12.11
Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	8.0	Disability Adjusted Life Years (DALY)	19 590

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Do not know**	85[b]	—	—
National eHealth policy	**Do not know**	55[b]	—	—
National ICT procurement policy for health sector	**Do not know**	37[b]	—	—
National multiculturalism policy for eHealth	**Do not know**	30[b]	—	—
National telemedicine policy	**Do not know**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	—	59	—	28
Software	—	76	—	35	—	56	—	29
Pilot projects	—	69	—	33	—	51	—	28
Skills training	—	61	—	26	—	43	—	20
Ongoing support	—	61	—	19	—	35	—	18
Scholarships	—	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**Yes**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Do not know	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	Yes	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	Yes	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	No	83
Formal evaluation and/or publication of mHealth initiatives	Do not know	12
Barriers to implementing mHealth initiatives		
Competing priorities	No data	53
Lack of knowledge of applications	No data	47
Lack of policy framework	No data	44
Cost effectiveness unknown	No data	40
Lack of legal policies/regulation	No data	38
Perceived costs too high	No data	37
Lack of demand	No data	29
Underdeveloped infrastructure	No data	26
Lack of technical expertise	No data	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Do not know	72
Used in training health professionals	Do not know	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	—	68	—	71
Public health	—	52	—	56
Nursing	—	50	—	55
Pharmacy	—	45	—	37
Dentistry	—	39	—	37

[a] n=113
[b] n=112
[c] n=114

Eritrea

Country indicators						
Population (000s)	4 927	Total health expenditure (%GDP)	3.1	ICT Development Index	1.08
GNI per capita (PPP Int $)	640	Per capita total health expenditure (PPP Int $)	19	ICT Development Index rank	152
World Bank income group	Low	Hospital bed density (per 10 000 population)	12	Mobile cellular subscriptions (per 100 population)	2.78
OECD country	No	Physician density (per 10 000 population)	0.5	Internet users (per 100 population)	—
Life expectancy at birth (years)	65	Nurse density (per 10 000 population)	5.8	Disability Adjusted Life Years (DALY)	26 878

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	—	—
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	—	28
Skills training	**Yes**	61	—	26	**Yes**	43	—	20
Ongoing support	**Yes**	61	—	19	**Yes**	35	—	18
Scholarships	**Yes**	28	—	8	**Yes**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No data**	60
Lack of legal policies/regulation	**No data**	40
Organizational culture not supportive	**No data**	39
Underdeveloped infrastructure	**No data**	38
Lack of policy frameworks	**No data**	37
Competing priorities	**No data**	37
Lack of demand by health professionals	**No data**	31
Lack of nationally adopted standards	**No data**	26
Lack of knowledge of applications	**No data**	25
Lack of technical expertise	**No data**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No data**	69
Clinical possibilities	**No data**	58
Infrastructure	**No data**	52
Evaluation	**No data**	46
Legal and ethical	**No data**	45
Effect on human resources	**No data**	40
Patients' perception	**No data**	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**No data**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**No data**	71
Public health	**Yes**	52	**No data**	56
Nursing	**Yes**	50	**No data**	55
Pharmacy	**Yes**	45	**No data**	37
Dentistry	**Yes**	39	**No data**	37

[a] n=113
[b] n=112
[c] n=114

Estonia

Country indicators						
Population (000s)	1 341	Total health expenditure (%GDP)	5.3	ICT Development Index	6.41
GNI per capita (PPP Int $)	18 890	Per capita total health expenditure (PPP Int $)	1 103	ICT Development Index rank	22
World Bank income group	High	Hospital bed density (per 10 000 population)	56	Mobile cellular subscriptions (per 100 population)	202.99
OECD country	No	Physician density (per 10 000 population)	33.3	Internet users (per 100 population)	72.50
Life expectancy at birth (years)	74	Nurse density (per 10 000 population)	69.8	Disability Adjusted Life Years (DALY)	16 212

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Yes**	**2003**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Yes**	25[c]	**Yes**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**No**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**No**	18
Scholarships	**Yes**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Yes	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Do not know	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Ethiopia

Country indicators						
Population (000s)	80 713	Total health expenditure (%GDP)	3.4	ICT Development Index	1.03
GNI per capita (PPP Int $)	930	Per capita total health expenditure (PPP Int $)	30	ICT Development Index rank	154
World Bank income group	Low	Hospital bed density (per 10 000 population)	2	Mobile cellular subscriptions (per 100 population)	4.89
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	0.54
Life expectancy at birth (years)	58	Nurse density (per 10 000 population)	2.4	Disability Adjusted Life Years (DALY)	42 306

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2009**
National eHealth policy	**No**	55[b]	**—**	**—**
National ICT procurement policy for health sector	**Do not know**	37[b]	**—**	**—**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**2004**
National telemedicine policy	**No**	25[c]	**—**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**—**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**—**	35	**Yes**	56	**Yes**	29
Pilot projects	**No**	69	**—**	33	**Yes**	51	**No**	28
Skills training	**Yes**	61	**—**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**—**	19	**Yes**	35	**No**	18
Scholarships	**No**	28	**—**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Fiji

Country indicators						
Population (000s)	844	Total health expenditure (%GDP)	3.8	ICT Development Index	2.81
GNI per capita (PPP Int $)	4 570	Per capita total health expenditure (PPP Int $)	166	ICT Development Index rank	91
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	21	Mobile cellular subscriptions (per 100 population)	75.36
OECD country	No	Physician density (per 10 000 population)	4.5	Internet users (per 100 population)	13.45
Life expectancy at birth (years)	70	Nurse density (per 10 000 population)	19.8	Disability Adjusted Life Years (DALY)	19 655

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2006**
National eHealth policy	**No**	55[b]	**–**	**–**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2007**
National multiculturalism policy for eHealth	**Do not know**	30[b]	**–**	**–**
National telemedicine policy	**No**	25[c]	**–**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**–**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**–**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**–**	28
Skills training	**No**	61	**Yes**	26	**Yes**	43	**–**	20
Ongoing support	**Yes**	61	**No**	19	**Yes**	35	**–**	18
Scholarships	**No**	28	**No**	8	**No**	19	**–**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	**–**	73
Nursing	**–**	62
Public health	**–**	60
Dentistry	**–**	54
Pharmacy	**–**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**Yes**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Finland

Country indicators						
Population (000s)	5 304	Total health expenditure (%GDP)	8.4	ICT Development Index	7.02
GNI per capita (PPP Int $)	34 430	Per capita total health expenditure (PPP Int $)	2 979	ICT Development Index rank	12
World Bank income group	High	Hospital bed density (per 10 000 population)	68	Mobile cellular subscriptions (per 100 population)	144.59
OECD country	Yes	Physician density (per 10 000 population)	33.2	Internet users (per 100 population)	82.49
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	89.2	Disability Adjusted Life Years (DALY)	11 347

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Partly**	**Before 2000**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**Before 2000**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Allows**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Yes**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Allows**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**No**	37	—	59	—	28
Software	**Yes**	76	**Yes**	35	—	56	—	29
Pilot projects	**Yes**	69	**Yes**	33	—	51	—	28
Skills training	**Yes**	61	**No**	26	—	43	—	20
Ongoing support	**Yes**	61	**Yes**	19	—	35	—	18
Scholarships	**No**	28	**No**	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Yes**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

France

Country indicators						
Population (000s)	62 036	Total health expenditure (%GDP)	11.1	ICT Development Index	6.55
GNI per capita (PPP Int $)	33 980	Per capita total health expenditure (PPP Int $)	3 778	ICT Development Index rank	18
World Bank income group	High	Hospital bed density (per 10 000 population)	72	Mobile cellular subscriptions (per 100 population)	95.51
OECD country	Yes	Physician density (per 10 000 population)	37.4	Internet users (per 100 population)	71.58
Life expectancy at birth (years)	81	Nurse density (per 10 000 population)	80.9	Disability Adjusted Life Years (DALY)	10 644

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2008**
National eHealth policy	**Yes**	55[b]	**Partly**	**2002**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**No data**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**No**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Do not know**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**No**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Gambia

Country indicators						
Population (000s)	1 660	Total health expenditure (%GDP)	5.3	ICT Development Index	1.62
GNI per capita (PPP Int $)	1 330	Per capita total health expenditure (PPP Int $)	73	ICT Development Index rank	124
World Bank income group	Low	Hospital bed density (per 10 000 population)	11	Mobile cellular subscriptions (per 100 population)	84.04
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	7.63
Life expectancy at birth (years)	59	Nurse density (per 10 000 population)	5.7	Disability Adjusted Life Years (DALY)	32 765

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2006**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	**Yes**	59	—	28
Software	—	76	—	35	**Yes**	56	—	29
Pilot projects	—	69	—	33	**Yes**	51	—	28
Skills training	—	61	—	26	**Yes**	43	—	20
Ongoing support	—	61	—	19	**Yes**	35	—	18
Scholarships	—	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Germany

Country indicators						
Population (000s)	82 264	Total health expenditure (%GDP)	10.4	ICT Development Index	6.95
GNI per capita (PPP Int $)	36 960	Per capita total health expenditure (PPP Int $)	3 692	ICT Development Index rank	13
World Bank income group	High	Hospital bed density (per 10 000 population)	83	Mobile cellular subscriptions (per 100 population)	127.79
OECD country	Yes	Physician density (per 10 000 population)	34.8	Internet users (per 100 population)	79.26
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	79.9	Disability Adjusted Life Years (DALY)	10 081

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Partly**	**2003**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**Before 2000**
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Allows**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Yes**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Allows**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	**Yes**	37	–	59	**No**	28
Software	**No**	76	**Yes**	35	–	56	**No**	29
Pilot projects	**Yes**	69	**Yes**	33	–	51	**Yes**	28
Skills training	**No**	61	**No**	26	–	43	**No**	20
Ongoing support	**Yes**	61	**Yes**	19	–	35	**Yes**	18
Scholarships	**No**	28	**No**	8	–	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Ghana

Country indicators						
Population (000s)	23 351	Total health expenditure (%GDP)	7.8	ICT Development Index	1.75
GNI per capita (PPP Int $)	1 480	Per capita total health expenditure (PPP Int $)	113	ICT Development Index rank	116
World Bank income group	Low	Hospital bed density (per 10 000 population)	9	Mobile cellular subscriptions (per 100 population)	63.38
OECD country	No	Physician density (per 10 000 population)	1.1	Internet users (per 100 population)	5.44
Life expectancy at birth (years)	62	Nurse density (per 10 000 population)	9.8	Disability Adjusted Life Years (DALY)	33 285

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2003**
National eHealth policy	**Yes**	55[b]	**Partly**	**2003**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No data**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	**No**	28
Software	**Yes**	76	—	35	**Yes**	56	**No**	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	—	26	**Yes**	43	**No**	20
Ongoing support	**Yes**	61	—	19	**Yes**	35	**No**	18
Scholarships	**Yes**	28	—	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No data**	60
Lack of legal policies/regulation	**No data**	40
Organizational culture not supportive	**No data**	39
Underdeveloped infrastructure	**No data**	38
Lack of policy frameworks	**No data**	37
Competing priorities	**No data**	37
Lack of demand by health professionals	**No data**	31
Lack of nationally adopted standards	**No data**	26
Lack of knowledge of applications	**No data**	25
Lack of technical expertise	**No data**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No data**	69
Clinical possibilities	**No data**	58
Infrastructure	**No data**	52
Evaluation	**No data**	46
Legal and ethical	**No data**	45
Effect on human resources	**No data**	40
Patients' perception	**No data**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**No**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Greece

Country indicators						
Population (000s)	11 137	Total health expenditure (%GDP)	9.7	ICT Development Index	6.03
GNI per capita (PPP Int $)	28 440	Per capita total health expenditure (PPP Int $)	2 852	ICT Development Index rank	30
World Bank income group	High	Hospital bed density (per 10 000 population)	48	Mobile cellular subscriptions (per 100 population)	119.12
OECD country	Yes	Physician density (per 10 000 population)	53.5	Internet users (per 100 population)	44.54
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	34.8	Disability Adjusted Life Years (DALY)	9 605

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2006**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2008**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**Before 2000**
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Yes**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Allows**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	—	59	—	28
Software	**Yes**	76	**Yes**	35	—	56	—	29
Pilot projects	**Yes**	69	**Yes**	33	—	51	—	28
Skills training	**Yes**	61	**Yes**	26	—	43	—	20
Ongoing support	**Yes**	61	**Yes**	19	—	35	—	18
Scholarships	**Yes**	28	**No**	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	Yes	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Guinea-Bissau

Country indicators						
Population (000s)	1 575	Total health expenditure (%GDP)	5.8	ICT Development Index	0.97
GNI per capita (PPP Int $)	1 060	Per capita total health expenditure (PPP Int $)	32	ICT Development Index rank	156
World Bank income group	Low	Hospital bed density (per 10 000 population)	10	Mobile cellular subscriptions (per 100 population)	34.79
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	2.30
Life expectancy at birth (years)	49	Nurse density (per 10 000 population)	5.5	Disability Adjusted Life Years (DALY)	47 596

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)§	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**No**	37[b]	–	–
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	–	78	–	37	**Yes**	59	–	28
Software	–	76	–	35	**Yes**	56	–	29
Pilot projects	–	69	–	33	**Yes**	51	–	28
Skills training	–	61	–	26	**No**	43	–	20
Ongoing support	–	61	–	19	**No**	35	–	18
Scholarships	–	28	–	8	**No**	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**No**	54

§ Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	–	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	No	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Hungary

Country indicators						
Population (000s)	10 012	Total health expenditure (%GDP)	7.4	ICT Development Index	5.64
GNI per capita (PPP Int $)	18 570	Per capita total health expenditure (PPP Int $)	1 419	ICT Development Index rank	34
World Bank income group	High	Hospital bed density (per 10 000 population)	71	Mobile cellular subscriptions (per 100 population)	118.01
OECD country	Yes	Physician density (per 10 000 population)	27.8	Internet users (per 100 population)	61.81
Life expectancy at birth (years)	74	Nurse density (per 10 000 population)	92.1	Disability Adjusted Life Years (DALY)	15 002

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Do not know**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	—	59	**No**	28
Software	**Yes**	76	**Yes**	35	—	56	**No**	29
Pilot projects	**Yes**	69	**No**	33	—	51	**Yes**	28
Skills training	**No**	61	**Yes**	26	—	43	**No**	20
Ongoing support	**Yes**	61	**No**	19	—	35	**No**	18
Scholarships	**No**	28	**No**	8	—	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**Yes**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Do not know**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**No**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Iceland

Country indicators						
Population (000s)	315	Total health expenditure (%GDP)	11.8	ICT Development Index	7.23
GNI per capita (PPP Int $)	33 390	Per capita total health expenditure (PPP Int $)	4 310	ICT Development Index rank	6
World Bank income group	High	Hospital bed density (per 10 000 population)	75	Mobile cellular subscriptions (per 100 population)	105.28
OECD country	Yes	Physician density (per 10 000 population)	37.7	Internet users (per 100 population)	93.46
Life expectancy at birth (years)	82	Nurse density (per 10 000 population)	101.4	Disability Adjusted Life Years (DALY)	9 042

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Partly**	**Before 2000**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2001**
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Yes**	25[c]	**No**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	**Yes**	28
Software	**Yes**	76	—	35	—	56	**Yes**	29
Pilot projects	**Yes**	69	—	33	—	51	**Yes**	28
Skills training	**Yes**	61	—	26	—	43	**No**	20
Ongoing support	**Yes**	61	—	19	—	35	**Yes**	18
Scholarships	**No**	28	—	8	—	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	No	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Do not know	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	Yes	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	Yes	42
Lack of demand	Yes	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	No	68	No	71
Public health	Yes	52	No	56
Nursing	Yes	50	Yes	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

India

Country indicators							
	Population (000s)	1 181 412	Total health expenditure (%GDP)	4.0	ICT Development Index	1.75
	GNI per capita (PPP Int $)	3 260	Per capita total health expenditure (PPP Int $)	116	ICT Development Index rank	117
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	9	Mobile cellular subscriptions (per 100 population)	43.83
	OECD country	No	Physician density (per 10 000 population)	5.8	Internet users (per 100 population)	5.12
	Life expectancy at birth (years)	64	Nurse density (per 10 000 population)	12.7	Disability Adjusted Life Years (DALY)	27 825

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2006**
National eHealth policy	**Yes**	55[b]	**Partly**	**2006**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2006**
National multiculturalism policy for eHealth	**No**	30[b]	**–**	**–**
National telemedicine policy	**Yes**	25[c]	**Partly**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**Yes**	18
Scholarships	**No**	28	**No**	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Do not know	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Indonesia

Country indicators						
Population (000s)	227 345	Total health expenditure (%GDP)	2.0	ICT Development Index	2.46
GNI per capita (PPP Int $)	4 060	Per capita total health expenditure (PPP Int $)	82	ICT Development Index rank	107
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	6	Mobile cellular subscriptions (per 100 population)	69.25
OECD country	No	Physician density (per 10 000 population)	1.3	Internet users (per 100 population)	8.70
Life expectancy at birth (years)	67	Nurse density (per 10 000 population)	8.2	Disability Adjusted Life Years (DALY)	25 103

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2003**
National eHealth policy	**Yes**	55[b]	**Yes**	**2007**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**No data**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**No**	37	**Yes**	59	—	28
Software	**Yes**	76	**No**	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	—	28
Skills training	**Yes**	61	**No**	26	**Yes**	43	—	20
Ongoing support	**Yes**	61	**No**	19	**Yes**	35	—	18
Scholarships	**Yes**	28	**No**	8	**Yes**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Yes**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Iran (Islamic Republic of)

Country indicators								
	Population (000s)	73 312	Total health expenditure (%GDP)	6.3	ICT Development Index	3.08
	GNI per capita (PPP Int $)	11 490	Per capita total health expenditure (PPP Int $)	722	ICT Development Index rank	84
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	14	Mobile cellular subscriptions (per 100 population)	70.83
	OECD country	No	Physician density (per 10 000 population)	8.9	Internet users (per 100 population)	11.07
	Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	14.1	Disability Adjusted Life Years (DALY)	19 432

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**Do not know**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**No data**	37[b]	**No data**	**No data**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2006**
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**No**	37	–	59	**No**	28
Software	**Yes**	76	**No**	35	–	56	**Yes**	29
Pilot projects	**Yes**	69	**No**	33	–	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	–	43	**No**	20
Ongoing support	**Yes**	61	**No**	19	–	35	**No**	18
Scholarships	**Yes**	28	**No**	8	–	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	**Yes**	71
Public health	–	52	**Yes**	56
Nursing	–	50	**No**	55
Pharmacy	–	45	**No**	37
Dentistry	–	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Israel

Country indicators						
Population (000s)	7 051	Total health expenditure (%GDP)	8.0	ICT Development Index	6.19
GNI per capita (PPP Int $)	27 040	Per capita total health expenditure (PPP Int $)	2 288	ICT Development Index rank	27
World Bank income group	High	Hospital bed density (per 10 000 population)	58	Mobile cellular subscriptions (per 100 population)	125.84
OECD country	Yes	Physician density (per 10 000 population)	36.3	Internet users (per 100 population)	63.12
Life expectancy at birth (years)	81	Nurse density (per 10 000 population)	61.5	Disability Adjusted Life Years (DALY)	9 822

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2004**
National eHealth policy	**No**	55[b]	**–**	**–**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2003**
National multiculturalism policy for eHealth	**No**	30[b]	**–**	**–**
National telemedicine policy	**No**	25[c]	**–**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Yes**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	–	37	–	59	–	28
Software	**Yes**	76	–	35	–	56	–	29
Pilot projects	**Yes**	69	–	33	–	51	–	28
Skills training	**Yes**	61	–	26	–	43	–	20
Ongoing support	**Yes**	61	–	19	–	35	–	18
Scholarships	**No**	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	No	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	No	37
Dentistry	Yes	39	No	37

[a] n=113
[b] n=112
[c] n=114

Jordan

Country indicators								
	Population (000s)	6 136	Total health expenditure (%GDP)	8.5	ICT Development Index	3.33
	GNI per capita (PPP Int $)	5 840	Per capita total health expenditure (PPP Int $)	432	ICT Development Index rank	74
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	18	Mobile cellular subscriptions (per 100 population)	95.22
	OECD country	No	Physician density (per 10 000 population)	25.6	Internet users (per 100 population)	26.00
	Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	31.8	Disability Adjusted Life Years (DALY)	17 042

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	—	33	**No**	51	—	28
Skills training	**Yes**	61	—	26	**Yes**	43	—	20
Ongoing support	**No**	61	—	19	**No**	35	—	18
Scholarships	**No**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No data**	60
Lack of legal policies/regulation	**No data**	40
Organizational culture not supportive	**No data**	39
Underdeveloped infrastructure	**No data**	38
Lack of policy frameworks	**No data**	37
Competing priorities	**No data**	37
Lack of demand by health professionals	**No data**	31
Lack of nationally adopted standards	**No data**	26
Lack of knowledge of applications	**No data**	25
Lack of technical expertise	**No data**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No data**	69
Clinical possibilities	**No data**	58
Infrastructure	**No data**	52
Evaluation	**No data**	46
Legal and ethical	**No data**	45
Effect on human resources	**No data**	40
Patients' perception	**No data**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**–**	68	**Yes**	71
Public health	**–**	52	**No**	56
Nursing	**–**	50	**No**	55
Pharmacy	**–**	45	**No**	37
Dentistry	**–**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Kuwait

Country indicators						
Population (000s)	2 919	Total health expenditure (%GDP)	2.0	ICT Development Index	3.64
GNI per capita (PPP Int $)	53 590	Per capita total health expenditure (PPP Int $)	795	ICT Development Index rank	65
World Bank income group	High	Hospital bed density (per 10 000 population)	18	Mobile cellular subscriptions (per 100 population)	129.85
OECD country	No	Physician density (per 10 000 population)	18.0	Internet users (per 100 population)	36.85
Life expectancy at birth (years)	78	Nurse density (per 10 000 population)	37.0	Disability Adjusted Life Years (DALY)	11 659

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2006**
National eHealth policy	**Yes**	55[b]	**Partly**	**Before 2000**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2000**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**No data**
National telemedicine policy	**Yes**	25[c]	**No**	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	–	37	–	59	–	28
Software	**Yes**	76	–	35	–	56	–	29
Pilot projects	**Yes**	69	–	33	–	51	–	28
Skills training	**Yes**	61	–	26	–	43	–	20
Ongoing support	**Yes**	61	–	19	–	35	–	18
Scholarships	**Yes**	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	No	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	Yes	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	No	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	No	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	No	52	No	56
Nursing	Yes	50	Yes	55
Pharmacy	No	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Kyrgyzstan

Country indicators								
	Population (000s)	5 414	Total health expenditure (%GDP)	6.6	ICT Development Index	2.65
	GNI per capita (PPP Int $)	2 200	Per capita total health expenditure (PPP Int $)	161	ICT Development Index rank	99
	World Bank income group	Low	Hospital bed density (per 10 000 population)	51	Mobile cellular subscriptions (per 100 population)	81.85
	OECD country	No	Physician density (per 10 000 population)	23.0	Internet users (per 100 population)	40.03
	Life expectancy at birth (years)	66	Nurse density (per 10 000 population)	56.6	Disability Adjusted Life Years (DALY)	25 257

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2002**
National eHealth policy	**Yes**	55[b]	**Partly**	**2002**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**No**	76	—	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	—	28
Skills training	**No**	61	—	26	**Yes**	43	—	20
Ongoing support	**No**	61	—	19	**No**	35	—	18
Scholarships	**No**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No data	12
Barriers to implementing mHealth initiatives		
Competing priorities	No data	53
Lack of knowledge of applications	No data	47
Lack of policy framework	No data	44
Cost effectiveness unknown	No data	40
Lack of legal policies/regulation	No data	38
Perceived costs too high	No data	37
Lack of demand	No data	29
Underdeveloped infrastructure	No data	26
Lack of technical expertise	No data	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	No	52	No	56
Nursing	Yes	50	Yes	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Lao People's Democratic Republic

Country indicators								
	Population (000s)	6 205	Total health expenditure (%GDP)	4.0	ICT Development Index	1.74
	GNI per capita (PPP Int $)	2 210	Per capita total health expenditure (PPP Int $)	85	ICT Development Index rank	118
	World Bank income group	Low	Hospital bed density (per 10 000 population)	12	Mobile cellular subscriptions (per 100 population)	51.18
	OECD country	No	Physician density (per 10 000 population)	3.5	Internet users (per 100 population)	4.75
	Life expectancy at birth (years)	62	Nurse density (per 10 000 population)	9.7	Disability Adjusted Life Years (DALY)	31 175

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2008**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**Yes**	37[b]	**No**	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	**Yes**	59	**No data**	28
Software	—	76	—	35	**Yes**	56	**No data**	29
Pilot projects	—	69	—	33	**Yes**	51	**No data**	28
Skills training	—	61	—	26	**Yes**	43	**No data**	20
Ongoing support	—	61	—	19	**No**	35	**No data**	18
Scholarships	—	28	—	8	**No**	19	**No data**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	–	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	No	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Latvia

Country indicators						
Population (000s)	2 259	Total health expenditure (%GDP)	6.5	ICT Development Index	5.28
GNI per capita (PPP Int $)	16 510	Per capita total health expenditure (PPP Int $)	1 112	ICT Development Index rank	41
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	76	Mobile cellular subscriptions (per 100 population)	105.40
OECD country	No	Physician density (per 10 000 population)	30.4	Internet users (per 100 population)	66.84
Life expectancy at birth (years)	71	Nurse density (per 10 000 population)	56.5	Disability Adjusted Life Years (DALY)	16 822

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2005**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2008**
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**Yes**	25[c]	**No**	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Allows**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Yes**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	–	37	–	59	–	28
Software	**Yes**	76	–	35	–	56	–	29
Pilot projects	**Yes**	69	–	33	–	51	–	28
Skills training	**Yes**	61	–	26	–	43	–	20
Ongoing support	**Yes**	61	–	19	–	35	–	18
Scholarships	**No**	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	No	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No data	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No data	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	Yes	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	—	68	No data	71
Public health	—	52	No data	56
Nursing	—	50	No data	55
Pharmacy	—	45	No data	37
Dentistry	—	39	No data	37

[a] n=113
[b] n=112
[c] n=114

Lebanon

Country indicators						
Population (000s)	4 194	Total health expenditure (%GDP)	8.8	ICT Development Index	3.17
GNI per capita (PPP Int $)	13 230	Per capita total health expenditure (PPP Int $)	1 000	ICT Development Index rank	82
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	34	Mobile cellular subscriptions (per 100 population)	56.59
OECD country	No	Physician density (per 10 000 population)	32.5	Internet users (per 100 population)	23.68
Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	13.2	Disability Adjusted Life Years (DALY)	18 881

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**No data**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Do not know**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	**No**	28
Software	**Yes**	76	—	35	**Yes**	56	**No**	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	**No**	28
Skills training	**Yes**	61	—	26	**Yes**	43	**No**	20
Ongoing support	**Yes**	61	—	19	**Yes**	35	**No**	18
Scholarships	**No**	28	—	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**No**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Lesotho

Country indicators							
Population (000s)	2 049	Total health expenditure (%GDP)	6.4	ICT Development Index	1.46
GNI per capita (PPP Int $)	1 950	Per capita total health expenditure (PPP Int $)	100	ICT Development Index rank	133
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	13	Mobile cellular subscriptions (per 100 population)	31.98
OECD country	No	Physician density (per 10 000 population)	0.5	Internet users (per 100 population)	3.72
Life expectancy at birth (years)	47	Nurse density (per 10 000 population)	6.2	Disability Adjusted Life Years (DALY)	49 452

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**No data**	37[b]	**No data**	**No data**
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No data**	23
With health care entities in other countries	**No data**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**No data**	37	**Yes**	59	**No data**	28
Software	**Yes**	76	**No data**	35	**Yes**	56	**No data**	29
Pilot projects	**No**	69	**No data**	33	**No**	51	**No data**	28
Skills training	**Yes**	61	**No data**	26	**Yes**	43	**No data**	20
Ongoing support	**No**	61	**No data**	19	**No**	35	**No data**	18
Scholarships	**No**	28	**No data**	8	**No**	19	**No data**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No data**	77
Institutions offer continuing education in ICT for health professionals	**No data**	75
Professional groups offered ICT continuing education		
Medical	**No data**	73
Nursing	**No data**	62
Public health	**No data**	60
Dentistry	**No data**	54
Pharmacy	**No data**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	No	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	No	83
Formal evaluation and/or publication of mHealth initiatives	No data	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	No	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	—	68	—	71
Public health	—	52	—	56
Nursing	—	50	—	55
Pharmacy	—	45	—	37
Dentistry	—	39	—	37

[a] n=113
[b] n=112
[c] n=114

Liberia

Country indicators						
Population (000s)	3 793	Total health expenditure (%GDP)	11.7	ICT Development Index	–
GNI per capita (PPP Int $)	290	Per capita total health expenditure (PPP Int $)	45	ICT Development Index rank	–
World Bank income group	Low	Hospital bed density (per 10 000 population)	7	Mobile cellular subscriptions (per 100 population)	21.29
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	0.51
Life expectancy at birth (years)	54	Nurse density (per 10 000 population)	2.7	Disability Adjusted Life Years (DALY)	56 189

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**Do not know**	37[b]	–	–
National multiculturalism policy for eHealth	**Do not know**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Do not know**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Do not know**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Do not know**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	–	78	–	37	–	59	–	28
Software	–	76	–	35	–	56	–	29
Pilot projects	–	69	–	33	–	51	–	28
Skills training	–	61	–	26	–	43	–	20
Ongoing support	–	61	–	19	–	35	–	18
Scholarships	–	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Do not know**	77
Institutions offer continuing education in ICT for health professionals	**Do not know**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	–	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No data**	60
Lack of legal policies/regulation	**No data**	40
Organizational culture not supportive	**No data**	39
Underdeveloped infrastructure	**No data**	38
Lack of policy frameworks	**No data**	37
Competing priorities	**No data**	37
Lack of demand by health professionals	**No data**	31
Lack of nationally adopted standards	**No data**	26
Lack of knowledge of applications	**No data**	25
Lack of technical expertise	**No data**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No data**	69
Clinical possibilities	**No data**	58
Infrastructure	**No data**	52
Evaluation	**No data**	46
Legal and ethical	**No data**	45
Effect on human resources	**No data**	40
Patients' perception	**No data**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**Do not know**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Libyan Arab Jamahiriya

Country indicators								
Population (000s)	6 294	Total health expenditure (%GDP)	2.8	ICT Development Index	3.24
GNI per capita (PPP Int $)	16 430	Per capita total health expenditure (PPP Int $)	401	ICT Development Index rank	78
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	37	Mobile cellular subscriptions (per 100 population)	77.94
OECD country	No	Physician density (per 10 000 population)	12.5	Internet users (per 100 population)	5.51
Life expectancy at birth (years)	73	Nurse density (per 10 000 population)	48.0	Disability Adjusted Life Years (DALY)	16 177

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	—	—
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**No**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**No**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Do not know**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Lithuania

Country indicators						
Population (000s)	3 321	Total health expenditure (%GDP)	6.2	ICT Development Index	5.55
GNI per capita (PPP Int $)	16 740	Per capita total health expenditure (PPP Int $)	1 178	ICT Development Index rank	35
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	81	Mobile cellular subscriptions (per 100 population)	150.96
OECD country	No	Physician density (per 10 000 population)	40.3	Internet users (per 100 population)	59.76
Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	75.7	Disability Adjusted Life Years (DALY)	16 454

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2002**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**No**	37[b]	–	–
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	–	37	–	59	–	28
Software	**Yes**	76	–	35	–	56	–	29
Pilot projects	**Yes**	69	–	33	–	51	–	28
Skills training	**No**	61	–	26	–	43	–	20
Ongoing support	**Yes**	61	–	19	–	35	–	18
Scholarships	**No**	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Do not know**	72
Used in training health professionals	**Do not know**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Madagascar

Country indicators						
Population (000s)	19 111	Total health expenditure (%GDP)	4.5	ICT Development Index	1.31
GNI per capita (PPP Int $)	1 050	Per capita total health expenditure (PPP Int $)	48	ICT Development Index rank	144
World Bank income group	Low	Hospital bed density (per 10 000 population)	10	Mobile cellular subscriptions (per 100 population)	32.02
OECD country	No	Physician density (per 10 000 population)	1.6	Internet users (per 100 population)	1.63
Life expectancy at birth (years)	60	Nurse density (per 10 000 population)	3.2	Disability Adjusted Life Years (DALY)	31 960

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2007**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Yes**	25[c]	**No**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	—	59	—	28
Software	—	76	—	35	—	56	—	29
Pilot projects	—	69	—	33	—	51	—	28
Skills training	—	61	—	26	—	43	—	20
Ongoing support	—	61	—	19	—	35	—	18
Scholarships	—	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	No	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	No	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	No	52	No	56
Nursing	No	50	No	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Malaysia

Country indicators							
	Population (000s)	27 014	Total health expenditure (%GDP)	4.3	ICT Development Index	3.96
	GNI per capita (PPP Int $)	13 530	Per capita total health expenditure (PPP Int $)	620	ICT Development Index rank	56
	World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	18	Mobile cellular subscriptions (per 100 population)	109.74
	OECD country	No	Physician density (per 10 000 population)	7.1	Internet users (per 100 population)	55.90
	Life expectancy at birth (years)	73	Nurse density (per 10 000 population)	18.1	Disability Adjusted Life Years (DALY)	16 638

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Yes**	**Before 2000**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2006**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**Before 2000**
National telemedicine policy	**Yes**	25[c]	**Yes**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	—	59	**No**	28
Software	**Yes**	76	**Yes**	35	—	56	**Yes**	29
Pilot projects	**No**	69	**Yes**	33	—	51	**No**	28
Skills training	**Yes**	61	**Yes**	26	—	43	**Yes**	20
Ongoing support	**Yes**	61	**No**	19	—	35	**Yes**	18
Scholarships	**No**	28	**No**	8	—	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Yes	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No data	69
Clinical possibilities	No data	58
Infrastructure	No data	52
Evaluation	No data	46
Legal and ethical	No data	45
Effect on human resources	No data	40
Patients' perception	No data	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No data	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	No	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Maldives

Country indicators							
	Population (000s)	305	Total health expenditure (%GDP)	11.2	ICT Development Index	3.54
	GNI per capita (PPP Int $)	5 230	Per capita total health expenditure (PPP Int $)	626	ICT Development Index rank	68
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	26	Mobile cellular subscriptions (per 100 population)	147.94
	OECD country	No	Physician density (per 10 000 population)	9.2	Internet users (per 100 population)	27.93
	Life expectancy at birth (years)	74	Nurse density (per 10 000 population)	27.0	Disability Adjusted Life Years (DALY)	23 507

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2009**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	—	28
Software	**Yes**	76	**No**	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	—	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	—	20
Ongoing support	**Yes**	61	**No**	19	**Yes**	35	—	18
Scholarships	**Yes**	28	**Yes**	8	**Yes**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**No**	68	**Yes**	71
Public health	**Yes**	52	**No**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Mali

Country indicators						
Population (000s)	12 706	Total health expenditure (%GDP)	5.5	ICT Development Index	1.19
GNI per capita (PPP Int $)	1 190	Per capita total health expenditure (PPP Int $)	62	ICT Development Index rank	147
World Bank income group	Low	Hospital bed density (per 10 000 population)	6	Mobile cellular subscriptions (per 100 population)	34.17
OECD country	No	Physician density (per 10 000 population)	0.7	Internet users (per 100 population)	1.92
Life expectancy at birth (years)	49	Nurse density (per 10 000 population)	2.0	Disability Adjusted Life Years (DALY)	50 378

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2005**
National eHealth policy	**Yes**	55[b]	**Partly**	**No data**
National ICT procurement policy for health sector	**No**	37[b]	**–**	**–**
National multiculturalism policy for eHealth	**No**	30[b]	**–**	**–**
National telemedicine policy	**Yes**	25[c]	**Yes**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**No**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**No**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**No**	28
Skills training	**Yes**	61	**Yes**	26	**No**	43	**No**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**Yes**	18
Scholarships	**Yes**	28	**Yes**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No data**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Yes	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	No	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	Yes	37
Dentistry	No	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Malta

Country indicators						
Population (000s)	407	Total health expenditure (%GDP)	7.5	ICT Development Index	5.82
GNI per capita (PPP Int $)	22 640	Per capita total health expenditure (PPP Int $)	4 039	ICT Development Index rank	31
World Bank income group	High	Hospital bed density (per 10 000 population)	78	Mobile cellular subscriptions (per 100 population)	103.27
OECD country	No	Physician density (per 10 000 population)	33.5	Internet users (per 100 population)	58.86
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	62.7	Disability Adjusted Life Years (DALY)	9 657

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**No data**
National eHealth policy	**Yes**	55[b]	**No**	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Mauritania

Country indicators						
Population (000s)	3 215	Total health expenditure (%GDP)	2.6	ICT Development Index	1.57
GNI per capita (PPP Int $)	1 960	Per capita total health expenditure (PPP Int $)	53	ICT Development Index rank	126
World Bank income group	Low	Hospital bed density (per 10 000 population)	4	Mobile cellular subscriptions (per 100 population)	66.32
OECD country	No	Physician density (per 10 000 population)	1.3	Internet users (per 100 population)	2.28
Life expectancy at birth (years)	58	Nurse density (per 10 000 population)	6.7	Disability Adjusted Life Years (DALY)	32 749

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2002**
National eHealth policy	**No**	55[b]	**–**	**–**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2002**
National multiculturalism policy for eHealth	**No**	30[b]	**–**	**–**
National telemedicine policy	**Yes**	25[c]	**No**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**–**	37	**Yes**	59	**–**	28
Software	**Yes**	76	**–**	35	**Yes**	56	**–**	29
Pilot projects	**Yes**	69	**–**	33	**Yes**	51	**–**	28
Skills training	**Yes**	61	**–**	26	**Yes**	43	**–**	20
Ongoing support	**No**	61	**–**	19	**Yes**	35	**–**	18
Scholarships	**No**	28	**–**	8	**Yes**	19	**–**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	No	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	Yes	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	—	68	Yes	71
Public health	—	52	Yes	56
Nursing	—	50	No	55
Pharmacy	—	45	Yes	37
Dentistry	—	39	No	37

[a] n=113
[b] n=112
[c] n=114

Mauritius

Country indicators						
Population (000s)	1 280	Total health expenditure (%GDP)	4.2	ICT Development Index	3.44
GNI per capita (PPP Int $)	13 270	Per capita total health expenditure (PPP Int $)	531	ICT Development Index rank	72
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	33	Mobile cellular subscriptions (per 100 population)	84.36
OECD country	No	Physician density (per 10 000 population)	10.6	Internet users (per 100 population)	22.51
Life expectancy at birth (years)	73	Nurse density (per 10 000 population)	37.3	Disability Adjusted Life Years (DALY)	17 288

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Do not know**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No data**	26
With different health care entities within the country	**No data**	23
With health care entities in other countries	**No data**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No data**	47
Security tools required by law for facilities used by children	**No data**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**No**	28
Skills training	**Yes**	61	**Yes**	26	**No**	43	**No**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**No**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**No**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Mexico

Country indicators						
Population (000s)	108 555	Total health expenditure (%GDP)	5.9	ICT Development Index	3.25
GNI per capita (PPP Int $)	14 110	Per capita total health expenditure (PPP Int $)	890	ICT Development Index rank	77
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	17	Mobile cellular subscriptions (per 100 population)	76.20
OECD country	Yes	Physician density (per 10 000 population)	28.9	Internet users (per 100 population)	28.30
Life expectancy at birth (years)	76	Nurse density (per 10 000 population)	39.8	Disability Adjusted Life Years (DALY)	15 430

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	—	—
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2006**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**2004**
National telemedicine policy	**Yes**	25[c]	**Yes**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	—	59	—	28
Software	—	76	—	35	—	56	—	29
Pilot projects	—	69	—	33	—	51	—	28
Skills training	—	61	—	26	—	43	—	20
Ongoing support	—	61	—	19	—	35	—	18
Scholarships	—	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Do not know**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**No**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

§ Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Yes	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	Yes	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Mongolia

Country indicators							
	Population (000s)	2 641	Total health expenditure (%GDP)	3.8	ICT Development Index	2.71
	GNI per capita (PPP Int $)	3 330	Per capita total health expenditure (PPP Int $)	136	ICT Development Index rank	95
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	60	Mobile cellular subscriptions (per 100 population)	84.20
	OECD country	No	Physician density (per 10 000 population)	26.3	Internet users (per 100 population)	—
	Life expectancy at birth (years)	68	Nurse density (per 10 000 population)	34.5	Disability Adjusted Life Years (DALY)	23 523

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2006**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2008**
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**Yes**	56	—	29
Pilot projects	**No**	69	—	33	**Yes**	51	—	28
Skills training	**No**	61	—	26	**Yes**	43	—	20
Ongoing support	**No**	61	—	19	**No**	35	—	18
Scholarships	**No**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**No**	73
Nursing	**No**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	—	68	Yes	71
Public health	—	52	Yes	56
Nursing	—	50	Yes	55
Pharmacy	—	45	Yes	37
Dentistry	—	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Montenegro

Country indicators						
Population (000s)	622	Total health expenditure (%GDP)	9.5	ICT Development Index	4.57
GNI per capita (PPP Int $)	13 130	Per capita total health expenditure (PPP Int $)	1 319	ICT Development Index rank	47
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	40	Mobile cellular subscriptions (per 100 population)	207.33
OECD country	No	Physician density (per 10 000 population)	19.9	Internet users (per 100 population)	44.86
Life expectancy at birth (years)	74	Nurse density (per 10 000 population)	55.4	Disability Adjusted Life Years (DALY)	—

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2009**
National eHealth policy	**Yes**	55[b]	**Partly**	**2009**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Morocco

Country indicators						
Population (000s)	31 606	Total health expenditure (%GDP)	5.3	ICT Development Index	2.68
GNI per capita (PPP Int $)	4 450	Per capita total health expenditure (PPP Int $)	229	ICT Development Index rank	97
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	11	Mobile cellular subscriptions (per 100 population)	79.11
OECD country	No	Physician density (per 10 000 population)	5.6	Internet users (per 100 population)	41.30
Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	7.8	Disability Adjusted Life Years (DALY)	17 780

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2001**
National eHealth policy	**Yes**	55[b]	**Partly**	**2004**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2003**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**Before 2000**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	—	28
Skills training	**Yes**	61	—	26	**Yes**	43	—	20
Ongoing support	**Yes**	61	—	19	**Yes**	35	—	18
Scholarships	**No**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**No**	68	**No**	71
Public health	**No**	52	**No**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Mozambique

Country indicators						
Population (000s)	22 383	Total health expenditure (%GDP)	5.6	ICT Development Index	1.05
GNI per capita (PPP Int $)	880	Per capita total health expenditure (PPP Int $)	47	ICT Development Index rank	153
World Bank income group	Low	Hospital bed density (per 10 000 population)	8	Mobile cellular subscriptions (per 100 population)	26.08
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	2.68
Life expectancy at birth (years)	51	Nurse density (per 10 000 population)	3.1	Disability Adjusted Life Years (DALY)	44 407

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2000**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Do not know**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No data**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	**Yes**	59	—	28
Software	—	76	—	35	**Yes**	56	—	29
Pilot projects	—	69	—	33	**Yes**	51	—	28
Skills training	—	61	—	26	**Yes**	43	—	20
Ongoing support	—	61	—	19	**Yes**	35	—	18
Scholarships	—	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Do not know	25
Implemented national telemedicine policy	–	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	Yes	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Do not know	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Nepal

Country indicators								
Population (000s)	28 810	Total health expenditure (%GDP)	4.9	ICT Development Index	1.34
GNI per capita (PPP Int $)	1 180	Per capita total health expenditure (PPP Int $)	54	ICT Development Index rank	142
World Bank income group	Low	Hospital bed density (per 10 000 population)	50	Mobile cellular subscriptions (per 100 population)	19.09
OECD country	No	Physician density (per 10 000 population)	2.1	Internet users (per 100 population)	1.97
Life expectancy at birth (years)	63	Nurse density (per 10 000 population)	4.6	Disability Adjusted Life Years (DALY)	30 799

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**No**	55[b]	**–**	**–**
National ICT procurement policy for health sector	**No**	37[b]	**–**	**–**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2008**
National telemedicine policy	**No**	25[c]	**–**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Allows**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**No**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**No**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**No**	19	**Yes**	35	**Yes**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	**–**	73
Nursing	**–**	62
Public health	**–**	60
Dentistry	**–**	54
Pharmacy	**–**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

New Zealand

Country indicators						
Population (000s)	4 230	Total health expenditure (%GDP)	9.0	ICT Development Index	6.81
GNI per capita (PPP Int $)	26 430	Per capita total health expenditure (PPP Int $)	2 465	ICT Development Index rank	16
World Bank income group	High	Hospital bed density (per 10 000 population)	62	Mobile cellular subscriptions (per 100 population)	110.16
OECD country	Yes	Physician density (per 10 000 population)	21.3	Internet users (per 100 population)	79.70
Life expectancy at birth (years)	81	Nurse density (per 10 000 population)	87.2	Disability Adjusted Life Years (DALY)	10 642

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2001**
National eHealth policy	**Yes**	55[b]	**Partly**	**2005**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2005**
National multiculturalism policy for eHealth	**Do not know**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	—	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	—	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	—	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	—	43	**No**	20
Ongoing support	**Yes**	61	**Yes**	19	—	35	**Yes**	18
Scholarships	**No**	28	**No**	8	—	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**No**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Niger

Country indicators						
Population (000s)	14 704	Total health expenditure (%GDP)	5.0	ICT Development Index	0.90
GNI per capita (PPP Int $)	660	Per capita total health expenditure (PPP Int $)	40	ICT Development Index rank	158
World Bank income group	Low	Hospital bed density (per 10 000 population)	3	Mobile cellular subscriptions (per 100 population)	17.00
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	0.76
Life expectancy at birth (years)	52	Nurse density (per 10 000 population)	1.4	Disability Adjusted Life Years (DALY)	59 261

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2004**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	—	37	**Yes**	59	**Yes**	28
Software	**No**	76	—	35	**Yes**	56	**Yes**	29
Pilot projects	**No**	69	—	33	**Yes**	51	**No**	28
Skills training	**No**	61	—	26	**Yes**	43	**Yes**	20
Ongoing support	**No**	61	—	19	**No**	35	**No**	18
Scholarships	**No**	28	—	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Nigeria

Country indicators							
Population (000s)	151 212	Total health expenditure (%GDP)	6.8	ICT Development Index	1.65
GNI per capita (PPP Int $)	1 980	Per capita total health expenditure (PPP Int $)	134	ICT Development Index rank	122
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	5	Mobile cellular subscriptions (per 100 population)	48.16
OECD country	No	Physician density (per 10 000 population)	4.0	Internet users (per 100 population)	28.43
Life expectancy at birth (years)	49	Nurse density (per 10 000 population)	16.1	Disability Adjusted Life Years (DALY)	48 578

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2001**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**Yes**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No data**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No data**	53
Lack of knowledge of applications	**No data**	47
Lack of policy framework	**No data**	44
Cost effectiveness unknown	**No data**	40
Lack of legal policies/regulation	**No data**	38
Perceived costs too high	**No data**	37
Lack of demand	**No data**	29
Underdeveloped infrastructure	**No data**	26
Lack of technical expertise	**No data**	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**No**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Norway

Country indicators						
Population (000s)	4 767	Total health expenditure (%GDP)	8.6	ICT Development Index	7.11
GNI per capita (PPP Int $)	56 050	Per capita total health expenditure (PPP Int $)	4 989	ICT Development Index rank	9
World Bank income group	High	Hospital bed density (per 10 000 population)	39	Mobile cellular subscriptions (per 100 population)	111.38
OECD country	Yes	Physician density (per 10 000 population)	38.9	Internet users (per 100 population)	92.08
Life expectancy at birth (years)	81	Nurse density (per 10 000 population)	163.3	Disability Adjusted Life Years (DALY)	10 351

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**No**	37[b]	**–**	**–**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2005**
National telemedicine policy	**Yes**	25[c]	**Partly**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Allows**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**No**	37	**–**	59	**–**	28
Software	**Yes**	76	**No**	35	**–**	56	**–**	29
Pilot projects	**Yes**	69	**Yes**	33	**–**	51	**–**	28
Skills training	**Yes**	61	**No**	26	**–**	43	**–**	20
Ongoing support	**Yes**	61	**No**	19	**–**	35	**–**	18
Scholarships	**Yes**	28	**No**	8	**–**	19	**–**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**Yes**	25
Implemented national telemedicine policy	**Partly**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Oman

Country indicators						
Population (000s)	2 785	Total health expenditure (%GDP)	2.4	ICT Development Index	3.45
GNI per capita (PPP Int $)	24 370	Per capita total health expenditure (PPP Int $)	592	ICT Development Index rank	71
World Bank income group	High	Hospital bed density (per 10 000 population)	20	Mobile cellular subscriptions (per 100 population)	139.54
OECD country	No	Physician density (per 10 000 population)	18.4	Internet users (per 100 population)	51.50
Life expectancy at birth (years)	74	Nurse density (per 10 000 population)	39.0	Disability Adjusted Life Years (DALY)	14 459

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**No data**
National eHealth policy	**Yes**	55[b]	**Partly**	**Before 2000**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**Before 2000**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**Yes**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Do not know**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**No**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Pakistan

Country indicators								
	Population (000s)	176 952	Total health expenditure (%GDP)	2.9	ICT Development Index	1.54
	GNI per capita (PPP Int $)	2 710	Per capita total health expenditure (PPP Int $)	71	ICT Development Index rank	128
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	6	Mobile cellular subscriptions (per 100 population)	52.18
	OECD country	No	Physician density (per 10 000 population)	7.8	Internet users (per 100 population)	11.30
	Life expectancy at birth (years)	63	Nurse density (per 10 000 population)	3.8	Disability Adjusted Life Years (DALY)	26 693

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**Do not know**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**Yes**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Panama

Country indicators						
Population (000s)	3 399	Total health expenditure (%GDP)	7.2	ICT Development Index	3.66
GNI per capita (PPP Int $)	12 530	Per capita total health expenditure (PPP Int $)	907	ICT Development Index rank	62
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	22	Mobile cellular subscriptions (per 100 population)	164.37
OECD country	No	Physician density (per 10 000 population)	15.0	Internet users (per 100 population)	27.79
Life expectancy at birth (years)	76	Nurse density (per 10 000 population)	27.7	Disability Adjusted Life Years (DALY)	15 008

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2008**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2008**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2008**
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	**Yes**	28
Software	**Yes**	76	—	35	—	56	**Yes**	29
Pilot projects	**Yes**	69	—	33	—	51	**No**	28
Skills training	**Yes**	61	—	26	—	43	**Yes**	20
Ongoing support	**Yes**	61	—	19	—	35	**No**	18
Scholarships	**No**	28	—	8	—	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	No	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	No	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Paraguay

Country indicators							
Population (000s)	6 238	Total health expenditure (%GDP)	6.3	ICT Development Index	2.75
GNI per capita (PPP Int $)	4 430	Per capita total health expenditure (PPP Int $)	297	ICT Development Index rank	94
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	13	Mobile cellular subscriptions (per 100 population)	88.50
OECD country	No	Physician density (per 10 000 population)	11.1	Internet users (per 100 population)	17.40
Life expectancy at birth (years)	74	Nurse density (per 10 000 population)	17.9	Disability Adjusted Life Years (DALY)	17 782

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2008**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2008**
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**No**	18
Scholarships	**Yes**	28	**No**	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Peru

Country indicators							
Population (000s)	28 837	Total health expenditure (%GDP)	4.5	ICT Development Index	3.27
GNI per capita (PPP Int $)	8 140	Per capita total health expenditure (PPP Int $)	385	ICT Development Index rank	75
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	15	Mobile cellular subscriptions (per 100 population)	84.69
OECD country	No	Physician density (per 10 000 population)	—	Internet users (per 100 population)	31.40
Life expectancy at birth (years)	76	Nurse density (per 10 000 population)	—	Disability Adjusted Life Years (DALY)	18 552

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2006**
National eHealth policy	**Yes**	55[b]	**Partly**	**2005**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**No**	29
Pilot projects	**Yes**	69	**No**	33	**No**	51	**No**	28
Skills training	**Yes**	61	**No**	26	**No**	43	**No**	20
Ongoing support	**No**	61	**No**	19	**Yes**	35	**Yes**	18
Scholarships	**No**	28	**Yes**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**No**	60
Dentistry	**Yes**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	Yes	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Yes	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	No	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Philippines

Country indicators						
Population (000s)	90 348	Total health expenditure (%GDP)	3.8	ICT Development Index	2.87
GNI per capita (PPP Int $)	3 540	Per capita total health expenditure (PPP Int $)	135	ICT Development Index rank	90
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	5	Mobile cellular subscriptions (per 100 population)	100.26
OECD country	No	Physician density (per 10 000 population)	11.5	Internet users (per 100 population)	9.00
Life expectancy at birth (years)	70	Nurse density (per 10 000 population)	61.2	Disability Adjusted Life Years (DALY)	21 603

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2006**
National eHealth policy	**No**	55[b]	**–**	**–**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2000**
National multiculturalism policy for eHealth	**No**	30[b]	**–**	**–**
National telemedicine policy	**No**	25[c]	**–**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No data**	47
Security tools required by law for facilities used by children	**No data**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**No**	19	**Yes**	35	**Yes**	18
Scholarships	**Yes**	28	**Yes**	8	**Yes**	19	**Yes**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Yes**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Poland

Country indicators						
Population (000s)	38 104	Total health expenditure (%GDP)	6.6	ICT Development Index	5.29
GNI per capita (PPP Int $)	18 440	Per capita total health expenditure (PPP Int $)	1 162	ICT Development Index rank	40
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	52	Mobile cellular subscriptions (per 100 population)	117.68
OECD country	Yes	Physician density (per 10 000 population)	20.1	Internet users (per 100 population)	58.97
Life expectancy at birth (years)	76	Nurse density (per 10 000 population)	51.9	Disability Adjusted Life Years (DALY)	13 209

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2008**
National eHealth policy	**Yes**	55[b]	**Partly**	**2004**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2007**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2004**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Allows**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Allows**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	—	59	—	28
Software	**Yes**	76	**Yes**	35	—	56	—	29
Pilot projects	**Yes**	69	**No**	33	—	51	—	28
Skills training	**No**	61	**Yes**	26	—	43	—	20
Ongoing support	**Yes**	61	**No**	19	—	35	—	18
Scholarships	**No**	28	**No**	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"
[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**Yes**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Portugal

Country indicators						
Population (000s)	10 677	Total health expenditure (%GDP)	10.1	ICT Development Index	5.77
GNI per capita (PPP Int $)	22 870	Per capita total health expenditure (PPP Int $)	2 334	ICT Development Index rank	32
World Bank income group	High	Hospital bed density (per 10 000 population)	35	Mobile cellular subscriptions (per 100 population)	148.77
OECD country	Yes	Physician density (per 10 000 population)	34.4	Internet users (per 100 population)	48.27
Life expectancy at birth (years)	79	Nurse density (per 10 000 population)	48.3	Disability Adjusted Life Years (DALY)	11 419

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Partly**	**2008**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2007**
National multiculturalism policy for eHealth	**No**	30[b]	**–**	**–**
National telemedicine policy	**Yes**	25[c]	**No**	**–**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Allows**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Do not know**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	–	37	–	59	–	28
Software	**Yes**	76	–	35	–	56	–	29
Pilot projects	**Yes**	69	–	33	–	51	–	28
Skills training	**Yes**	61	–	26	–	43	–	20
Ongoing support	**Yes**	61	–	19	–	35	–	18
Scholarships	**No**	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	No	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Do not know	72
Used in training health professionals	Do not know	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	No	45
Availability of suitable courses	Yes	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Qatar

Country indicators						
Population (000s)	1 281	Total health expenditure (%GDP)	3.3	ICT Development Index	4.68
GNI per capita (PPP Int $)	—	Per capita total health expenditure (PPP Int $)	2 837	ICT Development Index rank	45
World Bank income group	High	Hospital bed density (per 10 000 population)	25	Mobile cellular subscriptions (per 100 population)	175.40
OECD country	No	Physician density (per 10 000 population)	27.6	Internet users (per 100 population)	40.00
Life expectancy at birth (years)	76	Nurse density (per 10 000 population)	73.7	Disability Adjusted Life Years (DALY)	11 999

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2005**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2003**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No data**	53
Lack of knowledge of applications	**No data**	47
Lack of policy framework	**No data**	44
Cost effectiveness unknown	**No data**	40
Lack of legal policies/regulation	**No data**	38
Perceived costs too high	**No data**	37
Lack of demand	**No data**	29
Underdeveloped infrastructure	**No data**	26
Lack of technical expertise	**No data**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Do not know**	72
Used in training health professionals	**Do not know**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Republic of Korea

Country indicators						
Population (000s)	48 152	Total health expenditure (%GDP)	6.6	ICT Development Index	7.68
GNI per capita (PPP Int $)	27 310	Per capita total health expenditure (PPP Int $)	1 820	ICT Development Index rank	3
World Bank income group	High	Hospital bed density (per 10 000 population)	86	Mobile cellular subscriptions (per 100 population)	100.70
OECD country	Yes	Physician density (per 10 000 population)	17.1	Internet users (per 100 population)	81.52
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	43.9	Disability Adjusted Life Years (DALY)	12 248

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2007**
National multiculturalism policy for eHealth	**No data**	30[b]	**No data**	**No data**
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**Yes**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No data**	77
Institutions offer continuing education in ICT for health professionals	**No data**	75
Professional groups offered ICT continuing education		
Medical	**No data**	73
Nursing	**No data**	62
Public health	**No data**	60
Dentistry	**No data**	54
Pharmacy	**No data**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**Yes**	25
Implemented national telemedicine policy	**Partly**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No data**	53
Lack of knowledge of applications	**No data**	47
Lack of policy framework	**No data**	44
Cost effectiveness unknown	**No data**	40
Lack of legal policies/regulation	**No data**	38
Perceived costs too high	**No data**	37
Lack of demand	**No data**	29
Underdeveloped infrastructure	**No data**	26
Lack of technical expertise	**No data**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Do not know**	72
Used in training health professionals	**Do not know**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Republic of Moldova

Country indicators						
Population (000s)	3 633	Total health expenditure (%GDP)	10.7	ICT Development Index	3.37
GNI per capita (PPP Int $)	3 060	Per capita total health expenditure (PPP Int $)	318	ICT Development Index rank	73
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	61	Mobile cellular subscriptions (per 100 population)	77.28
OECD country	No	Physician density (per 10 000 population)	26.7	Internet users (per 100 population)	37.00
Life expectancy at birth (years)	69	Nurse density (per 10 000 population)	66.5	Disability Adjusted Life Years (DALY)	20 105

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2005**
National eHealth policy	**Yes**	55[b]	**Partly**	**2004**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	**Yes**	37	**Yes**	59	—	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	**No**	33	**Yes**	51	—	28
Skills training	**No**	61	**No**	26	**No**	43	—	20
Ongoing support	**No**	61	**No**	19	**No**	35	—	18
Scholarships	**No**	28	**No**	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Sao Tome and Principe

Country indicators							
	Population (000s)	160	Total health expenditure (%GDP)	9.5	ICT Development Index	–
	GNI per capita (PPP Int $)	1 850	Per capita total health expenditure (PPP Int $)	167	ICT Development Index rank	–
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	32	Mobile cellular subscriptions (per 100 population)	39.32
	OECD country	No	Physician density (per 10 000 population)	4.9	Internet users (per 100 population)	16.41
	Life expectancy at birth (years)	61	Nurse density (per 10 000 population)	18.7	Disability Adjusted Life Years (DALY)	31 628

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**No**	37[b]	–	–
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	–	78	–	37	**Yes**	59	–	28
Software	–	76	–	35	**Yes**	56	–	29
Pilot projects	–	69	–	33	**Yes**	51	–	28
Skills training	–	61	–	26	**Yes**	43	–	20
Ongoing support	–	61	–	19	**Yes**	35	–	18
Scholarships	–	28	–	8	**Yes**	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	–	73
Nursing	–	62
Public health	–	60
Dentistry	–	54
Pharmacy	–	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	–	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	Yes	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	No	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	–	68	–	71
Public health	–	52	–	56
Nursing	–	50	–	55
Pharmacy	–	45	–	37
Dentistry	–	39	–	37

[a] n=113
[b] n=112
[c] n=114

Senegal

Country indicators						
Population (000s)	12 211	Total health expenditure (%GDP)	5.7	ICT Development Index	1.49
GNI per capita (PPP Int $)	1 790	Per capita total health expenditure (PPP Int $)	102	ICT Development Index rank	131
World Bank income group	Low	Hospital bed density (per 10 000 population)	3	Mobile cellular subscriptions (per 100 population)	55.06
OECD country	No	Physician density (per 10 000 population)	0.6	Internet users (per 100 population)	14.50
Life expectancy at birth (years)	59	Nurse density (per 10 000 population)	4.2	Disability Adjusted Life Years (DALY)	35 224

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2001**
National eHealth policy	**No**	55[b]	**—**	**—**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2006**
National multiculturalism policy for eHealth	**No**	30[b]	**—**	**—**
National telemedicine policy	**No data**	25[c]	**No data**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**No**	61	**Yes**	26	**No**	43	**Yes**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**Yes**	18
Scholarships	**No**	28	**Yes**	8	**No**	19	**Yes**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No data**	25
Implemented national telemedicine policy	**No data**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Yes**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Seychelles

Country indicators						
Population (000s)	84	Total health expenditure (%GDP)	4.1	ICT Development Index	3.64
GNI per capita (PPP Int $)	16 820	Per capita total health expenditure (PPP Int $)	904	ICT Development Index rank	66
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	39	Mobile cellular subscriptions (per 100 population)	131.36
OECD country	No	Physician density (per 10 000 population)	15.1	Internet users (per 100 population)	—
Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	79.3	Disability Adjusted Life Years (DALY)	16 790

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2005**
National eHealth policy	**Yes**	55[b]	**Partly**	**2001**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**No**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**No**	28
Skills training	**No**	61	**Yes**	26	**Yes**	43	**No**	20
Ongoing support	**Yes**	61	**No**	19	**No**	35	**No**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No data**	53
Lack of knowledge of applications	**No data**	47
Lack of policy framework	**No data**	44
Cost effectiveness unknown	**No data**	40
Lack of legal policies/regulation	**No data**	38
Perceived costs too high	**No data**	37
Lack of demand	**No data**	29
Underdeveloped infrastructure	**No data**	26
Lack of technical expertise	**No data**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Sierra Leone

Country indicators						
Population (000s)	5 560	Total health expenditure (%GDP)	4.2	ICT Development Index	—
GNI per capita (PPP Int $)	790	Per capita total health expenditure (PPP Int $)	32	ICT Development Index rank	—
World Bank income group	Low	Hospital bed density (per 10 000 population)	4	Mobile cellular subscriptions (per 100 population)	20.36
OECD country	No	Physician density (per 10 000 population)	<0.5	Internet users (per 100 population)	0.26
Life expectancy at birth (years)	49	Nurse density (per 10 000 population)	1.7	Disability Adjusted Life Years (DALY)	66 278

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Do not know**	85[b]	—	—
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No data**	30[b]	**No data**	**No data**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Do not know**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Do not know**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**No data**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Do not know**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	—	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	—	29
Pilot projects	**No**	69	**Yes**	33	**No**	51	—	28
Skills training	**No**	61	**Yes**	26	**No**	43	—	20
Ongoing support	**No**	61	**Yes**	19	**No**	35	—	18
Scholarships	**No**	28	**No**	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**No**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Singapore

Country indicators						
Population (000s)	4 615	Total health expenditure (%GDP)	3.4	ICT Development Index	6.95
GNI per capita (PPP Int $)	49 850	Per capita total health expenditure (PPP Int $)	1 757	ICT Development Index rank	14
World Bank income group	High	Hospital bed density (per 10 000 population)	32	Mobile cellular subscriptions (per 100 population)	145.24
OECD country	No	Physician density (per 10 000 population)	15.0	Internet users (per 100 population)	68.29
Life expectancy at birth (years)	81	Nurse density (per 10 000 population)	44.0	Disability Adjusted Life Years (DALY)	10 111

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Yes**	**2003**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**Before 2000**
National multiculturalism policy for eHealth	**Do not know**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	**No**	28
Software	**Yes**	76	—	35	—	56	**No**	29
Pilot projects	**Yes**	69	—	33	—	51	**Yes**	28
Skills training	**Yes**	61	—	26	—	43	**No**	20
Ongoing support	**Yes**	61	—	19	—	35	**No**	18
Scholarships	**Yes**	28	—	8	—	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No data**	64
Lack of policy framework	**No data**	63
Lack of skilled course developers	**No data**	55
Lack of knowledge of applications	**No data**	46
Perceived costs too high	**No data**	45
Availability of suitable courses	**No data**	42
Lack of demand	**No data**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Slovakia

Country indicators						
Population (000s)	5 400	Total health expenditure (%GDP)	7.8	ICT Development Index	5.38
GNI per capita (PPP Int $)	21 600	Per capita total health expenditure (PPP Int $)	1 717	ICT Development Index rank	38
World Bank income group	High	Hospital bed density (per 10 000 population)	68	Mobile cellular subscriptions (per 100 population)	101.70
OECD country	Yes	Physician density (per 10 000 population)	31.2	Internet users (per 100 population)	75.17
Life expectancy at birth (years)	75	Nurse density (per 10 000 population)	66.2	Disability Adjusted Life Years (DALY)	13 844

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2008**
National eHealth policy	**Yes**	55[b]	**Partly**	**2009**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2005**
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**Yes**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**Yes**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No data**	53
Lack of knowledge of applications	**No data**	47
Lack of policy framework	**No data**	44
Cost effectiveness unknown	**No data**	40
Lack of legal policies/regulation	**No data**	38
Perceived costs too high	**No data**	37
Lack of demand	**No data**	29
Underdeveloped infrastructure	**No data**	26
Lack of technical expertise	**No data**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Slovenia

Country indicators						
Population (000s)	2 015	Total health expenditure (%GDP)	7.8	ICT Development Index	6.26
GNI per capita (PPP Int $)	26 340	Per capita total health expenditure (PPP Int $)	2 183	ICT Development Index rank	26
World Bank income group	High	Hospital bed density (per 10 000 population)	47	Mobile cellular subscriptions (per 100 population)	103.98
OECD country	Yes	Physician density (per 10 000 population)	24.2	Internet users (per 100 population)	64.28
Life expectancy at birth (years)	79	Nurse density (per 10 000 population)	78.1	Disability Adjusted Life Years (DALY)	11 636

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)§	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2009**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2007**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	—	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	—	28
Skills training	**Yes**	61	**No**	26	**Yes**	43	—	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	—	18
Scholarships	**Yes**	28	**No**	8	**Yes**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

§ Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**No**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Spain

Country indicators						
Population (000s)	44 486	Total health expenditure (%GDP)	8.7	ICT Development Index	6.27
GNI per capita (PPP Int $)	31 630	Per capita total health expenditure (PPP Int $)	2 791	ICT Development Index rank	25
World Bank income group	High	Hospital bed density (per 10 000 population)	34	Mobile cellular subscriptions (per 100 population)	113.76
OECD country	Yes	Physician density (per 10 000 population)	37.6	Internet users (per 100 population)	62.62
Life expectancy at birth (years)	81	Nurse density (per 10 000 population)	74.4	Disability Adjusted Life Years (DALY)	9 474

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Yes**	**2006**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2006**
National multiculturalism policy for eHealth	**Yes**	30[b]	**No**	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No data**	47
Security tools required by law for facilities used by children	**No data**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	**No data**	28
Software	**Yes**	76	—	35	—	56	**No data**	29
Pilot projects	**Yes**	69	—	33	—	51	**No data**	28
Skills training	**Yes**	61	—	26	—	43	**No data**	20
Ongoing support	**Yes**	61	—	19	—	35	**No data**	18
Scholarships	**No**	28	—	8	—	19	**No data**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No data**	53
Lack of knowledge of applications	**No data**	47
Lack of policy framework	**No data**	44
Cost effectiveness unknown	**No data**	40
Lack of legal policies/regulation	**No data**	38
Perceived costs too high	**No data**	37
Lack of demand	**No data**	29
Underdeveloped infrastructure	**No data**	26
Lack of technical expertise	**No data**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No data**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No data**	64
Lack of policy framework	**No data**	63
Lack of skilled course developers	**No data**	55
Lack of knowledge of applications	**No data**	46
Perceived costs too high	**No data**	45
Availability of suitable courses	**No data**	42
Lack of demand	**No data**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**No**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Sri Lanka

Country indicators								
Population (000s)	20 061	Total health expenditure (%GDP)	4.0	ICT Development Index	2.51
GNI per capita (PPP Int $)	4 720	Per capita total health expenditure (PPP Int $)	184	ICT Development Index rank	105
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	31	Mobile cellular subscriptions (per 100 population)	69.65
OECD country	No	Physician density (per 10 000 population)	5.5	Internet users (per 100 population)	8.78
Life expectancy at birth (years)	69	Nurse density (per 10 000 population)	17.4	Disability Adjusted Life Years (DALY)	24 956

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2003**
National eHealth policy	**No**	55[b]	**—**	**—**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2004**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2005**
National telemedicine policy	**No**	25[c]	**—**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**—**	37	**Yes**	59	**No**	28
Software	**No**	76	**—**	35	**Yes**	56	**No**	29
Pilot projects	**No**	69	**—**	33	**Yes**	51	**No**	28
Skills training	**Yes**	61	**—**	26	**Yes**	43	**Yes**	20
Ongoing support	**No**	61	**—**	19	**Yes**	35	**No**	18
Scholarships	**No**	28	**—**	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**No**	60
Dentistry	**Yes**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**No**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**No**	50	**No**	55
Pharmacy	**No**	45	**No**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Sudan

Country indicators								
	Population (000s)	41 348	Total health expenditure (%GDP)	3.6	ICT Development Index	1.57
	GNI per capita (PPP Int $)	2 000	Per capita total health expenditure (PPP Int $)	77	ICT Development Index rank	127
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	7	Mobile cellular subscriptions (per 100 population)	36.29
	OECD country	No	Physician density (per 10 000 population)	3.0	Internet users (per 100 population)	—
	Life expectancy at birth (years)	57	Nurse density (per 10 000 population)	9.0	Disability Adjusted Life Years (DALY)	38 563

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2005**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	—	28
Software	**Yes**	76	—	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	—	28
Skills training	**No**	61	—	26	**No**	43	—	20
Ongoing support	**No**	61	—	19	**No**	35	—	18
Scholarships	**No**	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	Yes	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	Yes	40
Patients' perception	Yes	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No data	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	No	50	No	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Swaziland

Country indicators								
	Population (000s)	1 168	Total health expenditure (%GDP)	5.9	ICT Development Index	1.90
	GNI per capita (PPP Int $)	4 580	Per capita total health expenditure (PPP Int $)	291	ICT Development Index rank	115
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	21	Mobile cellular subscriptions (per 100 population)	55.36
	OECD country	No	Physician density (per 10 000 population)	1.6	Internet users (per 100 population)	7.60
	Life expectancy at birth (years)	48	Nurse density (per 10 000 population)	63.1	Disability Adjusted Life Years (DALY)	55 883

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No data**	85[b]	**No data**	**No data**
National eHealth policy	**No data**	55[b]	**No data**	**No data**
National ICT procurement policy for health sector	**No data**	37[b]	**No data**	**No data**
National multiculturalism policy for eHealth	**No data**	30[b]	**No data**	**No data**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No data**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No data**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No data**	26
With different health care entities within the country	**No data**	23
With health care entities in other countries	**No data**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No data**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No data**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No data**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No data**	47
Security tools required by law for facilities used by children	**No data**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No data**	78	**No data**	37	**No data**	59	**No data**	28
Software	**No data**	76	**No data**	35	**No data**	56	**No data**	29
Pilot projects	**No data**	69	**No data**	33	**No data**	51	**No data**	28
Skills training	**No data**	61	**No data**	26	**No data**	43	**No data**	20
Ongoing support	**No data**	61	**No data**	19	**No data**	35	**No data**	18
Scholarships	**No data**	28	**No data**	8	**No data**	19	**No data**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No data**	77
Institutions offer continuing education in ICT for health professionals	**No data**	75
Professional groups offered ICT continuing education		
Medical	**No data**	73
Nursing	**No data**	62
Public health	**No data**	60
Dentistry	**No data**	54
Pharmacy	**No data**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**Yes**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**Yes**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No data**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No data**	53
Lack of knowledge of applications	**No data**	47
Lack of policy framework	**No data**	44
Cost effectiveness unknown	**No data**	40
Lack of legal policies/regulation	**No data**	38
Perceived costs too high	**No data**	37
Lack of demand	**No data**	29
Underdeveloped infrastructure	**No data**	26
Lack of technical expertise	**No data**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**No**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**No**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**No**	50	**Yes**	55
Pharmacy	**No**	45	**Yes**	37
Dentistry	**No**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Switzerland

Country indicators						
Population (000s)	7 541	Total health expenditure (%GDP)	10.5	ICT Development Index	7.19
GNI per capita (PPP Int $)	41 830	Per capita total health expenditure (PPP Int $)	4 620	ICT Development Index rank	7
World Bank income group	High	Hospital bed density (per 10 000 population)	55	Mobile cellular subscriptions (per 100 population)	122.30
OECD country	Yes	Physician density (per 10 000 population)	39.7	Internet users (per 100 population)	81.30
Life expectancy at birth (years)	82	Nurse density (per 10 000 population)	110.4	Disability Adjusted Life Years (DALY)	9 277

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2007**
National eHealth policy	**Yes**	55[b]	**Partly**	**2007**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**2006**
National multiculturalism policy for eHealth	**Yes**	30[b]	**No data**	**No data**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No**	78	**No**	37	—	59	**Yes**	28
Software	**No**	76	**No**	35	—	56	**Yes**	29
Pilot projects	**No**	69	**No**	33	—	51	**Yes**	28
Skills training	**No**	61	**No**	26	—	43	**Yes**	20
Ongoing support	**Yes**	61	**No**	19	—	35	**Yes**	18
Scholarships	**No**	28	**No**	8	—	19	**Yes**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Do not know**	77
Institutions offer continuing education in ICT for health professionals	**Do not know**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Yes**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Syrian Arab Republic

Country indicators								
	Population (000s)	21 227	Total health expenditure (%GDP)	3.2	ICT Development Index	2.76
	GNI per capita (PPP Int $)	4 620	Per capita total health expenditure (PPP Int $)	143	ICT Development Index rank	93
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	15	Mobile cellular subscriptions (per 100 population)	45.57
	OECD country	No	Physician density (per 10 000 population)	5.3	Internet users (per 100 population)	20.40
	Life expectancy at birth (years)	72	Nurse density (per 10 000 population)	14.0	Disability Adjusted Life Years (DALY)	16 167

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2009**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**No**	51	**Yes**	28
Skills training	**Yes**	61	**No**	26	**Yes**	43	**No**	20
Ongoing support	**No**	61	**No**	19	**No**	35	**No**	18
Scholarships	**Yes**	28	**No**	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**No**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**Yes**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**Yes**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**—**	71
Public health	**No**	52	**—**	56
Nursing	**No**	50	**—**	55
Pharmacy	**Yes**	45	**—**	37
Dentistry	**Yes**	39	**—**	37

[a] n=113
[b] n=112
[c] n=114

Thailand

Country indicators						
Population (000s)	67 386	Total health expenditure (%GDP)	4.0	ICT Development Index	3.27
GNI per capita (PPP Int $)	7 640	Per capita total health expenditure (PPP Int $)	323	ICT Development Index rank	76
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	22	Mobile cellular subscriptions (per 100 population)	97.33
OECD country	No	Physician density (per 10 000 population)	3.1	Internet users (per 100 population)	25.80
Life expectancy at birth (years)	70	Nurse density (per 10 000 population)	13.6	Disability Adjusted Life Years (DALY)	20 216

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2002**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	**Yes**	59	**No**	28
Software	**Yes**	76	—	35	**Yes**	56	**No**	29
Pilot projects	**Yes**	69	—	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	—	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	—	19	**Yes**	35	**No**	18
Scholarships	**Yes**	28	—	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	Yes	37
Competing priorities	No	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	No	42
Lack of demand	Yes	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Togo

Country indicators						
Population (000s)	6 459	Total health expenditure (%GDP)	6.4	ICT Development Index	1.36
GNI per capita (PPP Int $)	850	Per capita total health expenditure (PPP Int $)	71	ICT Development Index rank	140
World Bank income group	Low	Hospital bed density (per 10 000 population)	9	Mobile cellular subscriptions (per 100 population)	33.05
OECD country	No	Physician density (per 10 000 population)	0.5	Internet users (per 100 population)	5.38
Life expectancy at birth (years)	59	Nurse density (per 10 000 population)	2.7	Disability Adjusted Life Years (DALY)	38 278

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	–	–
National eHealth policy	**No**	55[b]	–	–
National ICT procurement policy for health sector	**No**	37[b]	–	–
National multiculturalism policy for eHealth	**No**	30[b]	–	–
National telemedicine policy	**No**	25[c]	–	–

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No data**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No data**	56
Technology through filters and controls	**No data**	28
Government intervention through laws or regulations	**No data**	26
Education programmes for consumers and professionals	**No data**	23
Official approval through certification, accreditation, or quality seals	**No data**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	–	78	–	37	–	59	–	28
Software	–	76	–	35	–	56	–	29
Pilot projects	–	69	–	33	–	51	–	28
Skills training	–	61	–	26	–	43	–	20
Ongoing support	–	61	–	19	–	35	–	18
Scholarships	–	28	–	8	–	19	–	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**Yes**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**No**	26
Lack of knowledge of applications	**Yes**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**Yes**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**Yes**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**No**	52	**Yes**	56
Nursing	**No**	50	**No**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Tonga

Country indicators							
	Population (000s)	104	Total health expenditure (%GDP)	4.0	ICT Development Index	—
	GNI per capita (PPP Int $)	4 580	Per capita total health expenditure (PPP Int $)	152	ICT Development Index rank	—
	World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	24	Mobile cellular subscriptions (per 100 population)	50.98
	OECD country	No	Physician density (per 10 000 population)	2.9	Internet users (per 100 population)	8.08
	Life expectancy at birth (years)	71	Nurse density (per 10 000 population)	34.0	Disability Adjusted Life Years (DALY)	—

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2008**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	—	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	—	29
Pilot projects	**No**	69	**No**	33	**Yes**	51	—	28
Skills training	**No**	61	**No**	26	**Yes**	43	—	20
Ongoing support	**No**	61	**No**	19	**Yes**	35	—	18
Scholarships	**No**	28	**No**	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No**	77
Institutions offer continuing education in ICT for health professionals	**No**	75
Professional groups offered ICT continuing education		
Medical	—	73
Nursing	—	62
Public health	—	60
Dentistry	—	54
Pharmacy	—	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**–**	–
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**No data**	60
Lack of legal policies/regulation	**No data**	40
Organizational culture not supportive	**No data**	39
Underdeveloped infrastructure	**No data**	38
Lack of policy frameworks	**No data**	37
Competing priorities	**No data**	37
Lack of demand by health professionals	**No data**	31
Lack of nationally adopted standards	**No data**	26
Lack of knowledge of applications	**No data**	25
Lack of technical expertise	**No data**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**No data**	69
Clinical possibilities	**No data**	58
Infrastructure	**No data**	52
Evaluation	**No data**	46
Legal and ethical	**No data**	45
Effect on human resources	**No data**	40
Patients' perception	**No data**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**No**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**No data**	53
Lack of knowledge of applications	**No data**	47
Lack of policy framework	**No data**	44
Cost effectiveness unknown	**No data**	40
Lack of legal policies/regulation	**No data**	38
Perceived costs too high	**No data**	37
Lack of demand	**No data**	29
Underdeveloped infrastructure	**No data**	26
Lack of technical expertise	**No data**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**No**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**No**	39	**No**	37

[a] n=113
[b] n=112
[c] n=114

Turkey

Country indicators						
Population (000s)	73 914	Total health expenditure (%GDP)	5.0	ICT Development Index	3.90
GNI per capita (PPP Int $)	13 730	Per capita total health expenditure (PPP Int $)	695	ICT Development Index rank	57
World Bank income group	Upper-middle	Hospital bed density (per 10 000 population)	28	Mobile cellular subscriptions (per 100 population)	83.91
OECD country	Yes	Physician density (per 10 000 population)	14.5	Internet users (per 100 population)	36.40
Life expectancy at birth (years)	74	Nurse density (per 10 000 population)	18.9	Disability Adjusted Life Years (DALY)	16 307

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2001**
National eHealth policy	**Yes**	55[b]	**Partly**	**2003**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**Before 2000**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**2008**
National telemedicine policy	**Yes**	25[c]	**Yes**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**Yes**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Prohibits**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**No**	76	**No**	35	**No**	56	**No**	29
Pilot projects	**No**	69	**No**	33	**No**	51	**No**	28
Skills training	**No**	61	**No**	26	**No**	43	**No**	20
Ongoing support	**No**	61	**No**	19	**No**	35	**No**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**No**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Yes	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	Yes	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	Yes	25
Lack of technical expertise	Yes	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	Yes	30

II. mHealth	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	No	38
Perceived costs too high	Yes	37
Lack of demand	Yes	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	No	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	No	68	Yes	71
Public health	No	52	Yes	56
Nursing	No	50	Yes	55
Pharmacy	No	45	No	37
Dentistry	No	39	No	37

[a] n=113
[b] n=112
[c] n=114

Turkmenistan

Country indicators						
Population (000s)	5 044	Total health expenditure (%GDP)	1.8	ICT Development Index	2.38
GNI per capita (PPP Int $)	6 990	Per capita total health expenditure (PPP Int $)	120	ICT Development Index rank	108
World Bank income group	Lower-middle	Hospital bed density (per 10 000 population)	41	Mobile cellular subscriptions (per 100 population)	29.35
OECD country	No	Physician density (per 10 000 population)	24.4	Internet users (per 100 population)	1.57
Life expectancy at birth (years)	63	Nurse density (per 10 000 population)	45.2	Disability Adjusted Life Years (DALY)	28 344

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No**	85[b]	—	—
National eHealth policy	**Yes**	55[b]	**Partly**	**2006**
National ICT procurement policy for health sector	**Do not know**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Yes**	**2006**
National telemedicine policy	**Yes**	25[c]	**Yes**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Do not know**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Do not know**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Do not know**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	—	37	—	59	—	28
Software	**Yes**	76	—	35	—	56	—	29
Pilot projects	**No**	69	—	33	—	51	—	28
Skills training	**Yes**	61	—	26	—	43	—	20
Ongoing support	**No**	61	—	19	—	35	—	18
Scholarships	**No**	28	—	8	—	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**No**	54
Pharmacy	**No**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Yes	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	Yes	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	Yes	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	Yes	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	Yes	40
Lack of legal policies/regulation	Yes	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Do not know	69
Barriers to eLearning		
Underdeveloped infrastructure	No data	64
Lack of policy framework	No data	63
Lack of skilled course developers	No data	55
Lack of knowledge of applications	No data	46
Perceived costs too high	No data	45
Availability of suitable courses	No data	42
Lack of demand	No data	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	—	71
Public health	Yes	52	—	56
Nursing	No	50	—	55
Pharmacy	Yes	45	—	37
Dentistry	Yes	39	—	37

[a] n=113
[b] n=112
[c] n=114

United Kingdom

Country indicators						
Population (000s)	61 231	Total health expenditure (%GDP)	9.0	ICT Development Index	7.07
GNI per capita (PPP Int $)	37 360	Per capita total health expenditure (PPP Int $)	3 230	ICT Development Index rank	10
World Bank income group	High	Hospital bed density (per 10 000 population)	39	Mobile cellular subscriptions (per 100 population)	130.55
OECD country	Yes	Physician density (per 10 000 population)	21.4	Internet users (per 100 population)	83.56
Life expectancy at birth (years)	80	Nurse density (per 10 000 population)	6.3	Disability Adjusted Life Years (DALY)	11 012

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**Before 2000**
National eHealth policy	**Yes**	55[b]	**Yes**	**2002**
National ICT procurement policy for health sector	**Yes**	37[b]	**Yes**	**2002**
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2008**
National telemedicine policy	**Yes**	25[c]	**Yes**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Yes**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**No**	37	**—**	59	**No**	28
Software	**Yes**	76	**No**	35	**—**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**—**	51	**No**	28
Skills training	**Yes**	61	**No**	26	**—**	43	**No**	20
Ongoing support	**Yes**	61	**No**	19	**—**	35	**Yes**	18
Scholarships	**Yes**	28	**No**	8	**—**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Do not know**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

§ Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Yes	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	No	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	No	69
Clinical possibilities	No	58
Infrastructure	No	52
Evaluation	Yes	46
Legal and ethical	No	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	Do not know	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	No	47
Lack of policy framework	No	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	No	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	No	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	Yes	46
Perceived costs too high	No	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	Yes	52	Yes	56
Nursing	Yes	50	Yes	55
Pharmacy	Yes	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

United States of America

Country indicators						
Population (000s)	311 666	Total health expenditure (%GDP)	16.0	ICT Development Index	6.54
GNI per capita (PPP Int $)	46 730	Per capita total health expenditure (PPP Int $)	7 536	ICT Development Index rank	19
World Bank income group	High	Hospital bed density (per 10 000 population)	31	Mobile cellular subscriptions (per 100 population)	90.78
OECD country	Yes	Physician density (per 10 000 population)	26.7	Internet users (per 100 population)	78.00
Life expectancy at birth (years)	78	Nurse density (per 10 000 population)	98.2	Disability Adjusted Life Years (DALY)	12 844

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**No data**
National eHealth policy	**Yes**	55[b]	**Partly**	**2006**
National ICT procurement policy for health sector	**Do not know**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**No**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Yes**	26
With different health care entities within the country	**Yes**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**Allows**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**Yes**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Prohibits**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Do not know**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**No**	20
Ongoing support	**Yes**	61	**Yes**	19	**Yes**	35	**Yes**	18
Scholarships	**Yes**	28	**Yes**	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Yes**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**No**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**No**	58
Infrastructure	**No**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**Do not know**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**Yes**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**No**	42
Lack of demand	**No**	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Uzbekistan

Country indicators						
Population (000s)	27 191	Total health expenditure (%GDP)	5.0	ICT Development Index	2.25
GNI per capita (PPP Int $)	2 890	Per capita total health expenditure (PPP Int $)	134	ICT Development Index rank	110
World Bank income group	Low	Hospital bed density (per 10 000 population)	48	Mobile cellular subscriptions (per 100 population)	59.73
OECD country	No	Physician density (per 10 000 population)	26.2	Internet users (per 100 population)	17.06
Life expectancy at birth (years)	68	Nurse density (per 10 000 population)	108.1	Disability Adjusted Life Years (DALY)	21 277

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Do not know**	85[b]	—	—
National eHealth policy	**Yes**	55[b]	**Partly**	**2009**
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**Yes**	30[b]	**Partly**	**2009**
National telemedicine policy	**Yes**	25[c]	**Partly**	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**Yes**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**No**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**No**	61	**Yes**	26	**No**	43	**No**	20
Ongoing support	**No**	61	**No**	19	**No**	35	**No**	18
Scholarships	**No**	28	**No**	8	**No**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	Yes	25
Implemented national telemedicine policy	Partly	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	Yes	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	Yes	39
Underdeveloped infrastructure	Yes	38
Lack of policy frameworks	No	37
Competing priorities	No	37
Lack of demand by health professionals	No	31
Lack of nationally adopted standards	Yes	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	Yes	52
Evaluation	Yes	46
Legal and ethical	Yes	45
Effect on human resources	No	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No	12
Barriers to implementing mHealth initiatives		
Competing priorities	No	53
Lack of knowledge of applications	No	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	Yes	37
Lack of demand	No	29
Underdeveloped infrastructure	Yes	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	No	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	Yes	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	No	42
Lack of demand	No	21

IIIb. eLearning target groups				
Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	—	68	Yes	71
Public health	—	52	Yes	56
Nursing	—	50	Yes	55
Pharmacy	—	45	Yes	37
Dentistry	—	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Viet Nam

Country indicators						
Population (000s)	87 096	Total health expenditure (%GDP)	7.3	ICT Development Index	3.05
GNI per capita (PPP Int $)	2 850	Per capita total health expenditure (PPP Int $)	201	ICT Development Index rank	86
World Bank income group	Low	Hospital bed density (per 10 000 population)	28	Mobile cellular subscriptions (per 100 population)	111.53
OECD country	No	Physician density (per 10 000 population)	5.6	Internet users (per 100 population)	26.55
Life expectancy at birth (years)	73	Nurse density (per 10 000 population)	7.7	Disability Adjusted Life Years (DALY)	17 025

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Partly**	**2001**
National eHealth policy	**Yes**	55[b]	**Partly**	**2004**
National ICT procurement policy for health sector	**Yes**	37[b]	**Partly**	**No data**
National multiculturalism policy for eHealth	**No**	30[b]	**—**	**—**
National telemedicine policy	**Yes**	25[c]	**Partly**	**—**

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**Yes**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	**Yes**	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	**Yes**	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	**Yes**	28
Skills training	**Yes**	61	**Yes**	26	**Yes**	43	**Yes**	20
Ongoing support	**Yes**	61	**No**	19	**Yes**	35	**Yes**	18
Scholarships	**Yes**	28	**No**	8	**Yes**	19	**No**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**Yes**	25
Implemented national telemedicine policy	**Partly**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**Do not know**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**Yes**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**No**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**No**	52
Evaluation	**No**	46
Legal and ethical	**Yes**	45
Effect on human resources	**Yes**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No data**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**No**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**Yes**	40
Lack of legal policies/regulation	**Yes**	38
Perceived costs too high	**No**	37
Lack of demand	**No**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**Yes**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**Yes**	69
Barriers to eLearning		
Underdeveloped infrastructure	**No**	64
Lack of policy framework	**Yes**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**Yes**	46
Perceived costs too high	**No**	45
Availability of suitable courses	**Yes**	42
Lack of demand	**No**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Yemen

Country indicators								
	Population (000s)	22 917	Total health expenditure (%GDP)	3.7	ICT Development Index	1.52
	GNI per capita (PPP Int $)	2 340	Per capita total health expenditure (PPP Int $)	104	ICT Development Index rank	129
	World Bank income group	Low	Hospital bed density (per 10 000 population)	7	Mobile cellular subscriptions (per 100 population)	35.25
	OECD country	No	Physician density (per 10 000 population)	3.3	Internet users (per 100 population)	9.96
	Life expectancy at birth (years)	64	Nurse density (per 10 000 population)	6.6	Disability Adjusted Life Years (DALY)	32 541

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**Yes**	**2002**
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**Do not know**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	—	78	—	37	**Yes**	59	—	28
Software	—	76	—	35	**Yes**	56	—	29
Pilot projects	—	69	—	33	**Yes**	51	—	28
Skills training	—	61	—	26	**Yes**	43	—	20
Ongoing support	—	61	—	19	**Yes**	35	—	18
Scholarships	—	28	—	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**No**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	No	25
Implemented national telemedicine policy	—	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	No	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	Yes	60
Lack of legal policies/regulation	No	40
Organizational culture not supportive	No	39
Underdeveloped infrastructure	No	38
Lack of policy frameworks	Yes	37
Competing priorities	Yes	37
Lack of demand by health professionals	Yes	31
Lack of nationally adopted standards	No	26
Lack of knowledge of applications	No	25
Lack of technical expertise	No	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	Yes	69
Clinical possibilities	No	58
Infrastructure	Yes	52
Evaluation	No	46
Legal and ethical	Yes	45
Effect on human resources	Yes	40
Patients' perception	No	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	Yes	83
Formal evaluation and/or publication of mHealth initiatives	No data	12
Barriers to implementing mHealth initiatives		
Competing priorities	Yes	53
Lack of knowledge of applications	Yes	47
Lack of policy framework	Yes	44
Cost effectiveness unknown	No	40
Lack of legal policies/regulation	No	38
Perceived costs too high	No	37
Lack of demand	No	29
Underdeveloped infrastructure	No	26
Lack of technical expertise	Yes	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	Yes	72
Used in training health professionals	Yes	69
Barriers to eLearning		
Underdeveloped infrastructure	Yes	64
Lack of policy framework	Yes	63
Lack of skilled course developers	No	55
Lack of knowledge of applications	No	46
Perceived costs too high	Yes	45
Availability of suitable courses	Yes	42
Lack of demand	No	21

IIIb. eLearning target groups

Profession	Students		Professionals	
	Country response	Global response (%)[c§]	Country response	Global response (%)[c§]
Medical	Yes	68	Yes	71
Public health	No	52	Yes	56
Nursing	Yes	50	No	55
Pharmacy	Yes	45	Yes	37
Dentistry	Yes	39	Yes	37

[a] n=113
[b] n=112
[c] n=114

Zambia

Country indicators						
Population (000s)	12 620	Total health expenditure (%GDP)	6.0	ICT Development Index	1.42
GNI per capita (PPP Int $)	1 280	Per capita total health expenditure (PPP Int $)	81	ICT Development Index rank	136
World Bank income group	Low	Hospital bed density (per 10 000 population)	19	Mobile cellular subscriptions (per 100 population)	34.07
OECD country	No	Physician density (per 10 000 population)	0.6	Internet users (per 100 population)	6.31
Life expectancy at birth (years)	48	Nurse density (per 10 000 population)	7.1	Disability Adjusted Life Years (DALY)	62 024

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**No data**	85[b]	**No data**	**No data**
National eHealth policy	**No data**	55[b]	**No data**	**No data**
National ICT procurement policy for health sector	**No data**	37[b]	**No data**	**No data**
National multiculturalism policy for eHealth	**No data**	30[b]	**No data**	**No data**
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**Yes**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**Do not know**	26
With different health care entities within the country	**Do not know**	23
With health care entities in other countries	**Do not know**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**No**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**No**	56
Technology through filters and controls	**No**	28
Government intervention through laws or regulations	**Yes**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**Yes**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**No data**	78	**No data**	37	**No data**	59	**No data**	28
Software	**No data**	76	**No data**	35	**No data**	56	**No data**	29
Pilot projects	**No data**	69	**No data**	33	**No data**	51	**No data**	28
Skills training	**No data**	61	**No data**	26	**No data**	43	**No data**	20
Ongoing support	**No data**	61	**No data**	19	**No data**	35	**No data**	18
Scholarships	**No data**	28	**No data**	8	**No data**	19	**No data**	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**No data**	77
Institutions offer continuing education in ICT for health professionals	**No data**	75
Professional groups offered ICT continuing education		
Medical	**No data**	73
Nursing	**No data**	62
Public health	**No data**	60
Dentistry	**No data**	54
Pharmacy	**No data**	54

[§] Indicates the percentage of participating Member States responding "Yes"

[1] Electronic medical records / Electronic health records

2. eHealth applications

eHealth applications surveyed in 2009 include telemedicine (the delivery of health care services using ICT where distance is a barrier to care); mHealth (the use of mobile devices in delivering health care services); and eLearning (use of ICT for learning).

I. Telemedicine		
	Country response	Global response (%)[c§]
Telemedicine enabling actions		
National telemedicine policy	**No**	25
Implemented national telemedicine policy	**—**	—
Formal evaluation and/or publication of telemedicine initiatives since 2006	**No data**	22
Barriers to implementing telemedicine solutions		
Perceived costs too high	**Yes**	60
Lack of legal policies/regulation	**No**	40
Organizational culture not supportive	**No**	39
Underdeveloped infrastructure	**No**	38
Lack of policy frameworks	**No**	37
Competing priorities	**Yes**	37
Lack of demand by health professionals	**Yes**	31
Lack of nationally adopted standards	**Yes**	26
Lack of knowledge of applications	**No**	25
Lack of technical expertise	**No**	17
Information most needed in country to support telemedicine development		
Cost and cost effectiveness	**Yes**	69
Clinical possibilities	**Yes**	58
Infrastructure	**Yes**	52
Evaluation	**Yes**	46
Legal and ethical	**No**	45
Effect on human resources	**No**	40
Patients' perception	**No**	30

II. mHealth		
	Country response	Global response (%)[b§]
mHealth initiatives		
mHealth initiatives are conducted in country	**Yes**	83
Formal evaluation and/or publication of mHealth initiatives	**No**	12
Barriers to implementing mHealth initiatives		
Competing priorities	**Yes**	53
Lack of knowledge of applications	**Yes**	47
Lack of policy framework	**No**	44
Cost effectiveness unknown	**No**	40
Lack of legal policies/regulation	**No**	38
Perceived costs too high	**Yes**	37
Lack of demand	**Yes**	29
Underdeveloped infrastructure	**No**	26
Lack of technical expertise	**No**	26

IIIa. eLearning		
	Country response	Global response (%)[c§]
eLearning in health sciences at the tertiary level		
Used in teaching health sciences	**Yes**	72
Used in training health professionals	**No**	69
Barriers to eLearning		
Underdeveloped infrastructure	**Yes**	64
Lack of policy framework	**No**	63
Lack of skilled course developers	**Yes**	55
Lack of knowledge of applications	**No**	46
Perceived costs too high	**Yes**	45
Availability of suitable courses	**No**	42
Lack of demand	**Yes**	21

IIIb. eLearning target groups				
Profession	**Students**		**Professionals**	
	Country response	**Global response (%)[c§]**	**Country response**	**Global response (%)[c§]**
Medical	**Yes**	68	**Yes**	71
Public health	**Yes**	52	**Yes**	56
Nursing	**Yes**	50	**Yes**	55
Pharmacy	**Yes**	45	**Yes**	37
Dentistry	**Yes**	39	**Yes**	37

[a] n=113
[b] n=112
[c] n=114

Zimbabwe

Country indicators						
Population (000s)	12 463	Total health expenditure (%GDP)	12.2	ICT Development Index	1.51
GNI per capita (PPP Int $)	—	Per capita total health expenditure (PPP Int $)	20	ICT Development Index rank	130
World Bank income group	Low	Hospital bed density (per 10 000 population)	30	Mobile cellular subscriptions (per 100 population)	23.88
OECD country	No	Physician density (per 10 000 population)	1.6	Internet users (per 100 population)	11.36
Life expectancy at birth (years)	42	Nurse density (per 10 000 population)	7.2	Disability Adjusted Life Years (DALY)	82 801

Sources: See page ix

1. eHealth foundation actions

eHealth foundation actions build an enabling environment for the use of ICT for health. These include supportive eHealth policy, legal and ethical frameworks; adequate funding from various sources; infrastructure development; and developing the capacity of the health work force through training.

I. Policy framework

	Country response	Global response (%)[§]	Policy implemented	Year of implementation
National eGovernment policy	**Yes**	85[b]	**No**	—
National eHealth policy	**No**	55[b]	—	—
National ICT procurement policy for health sector	**No**	37[b]	—	—
National multiculturalism policy for eHealth	**No**	30[b]	—	—
National telemedicine policy	**No**	25[c]	—	—

II. Legal and ethical frameworks for eHealth

	Country response	Global response (%)[a§]
Legislation on personal and health-related data		
To ensure privacy of personally identifiable data	**Yes**	70
To protect personally identifiable data specifically in EMR or EHR[1]	**No**	31
Legislation for sharing health-related data between health care staff through EMR/EHR[1]		
Within the same health care facility and its network of care providers	**No**	26
With different health care entities within the country	**No**	23
With health care entities in other countries	**No**	11
Internet pharmacies		
Legislation that allows/prohibits Internet pharmacy operations	**No**	Allows: 7, Prohibits: 19
National regulation/accreditation/certification of Internet pharmacy sites	**No**	7
Legislation that allows/prohibits Internet pharmacy purchases from other countries	**No**	Allows: 6, Prohibits: 12
Internet safety		
Government sponsored initiatives about Internet safety and literacy	**No**	47
Security tools required by law for facilities used by children	**Yes**	22
Quality assurance approaches to health-related Internet content		
Voluntary compliance by content providers or web site owners	**Yes**	56
Technology through filters and controls	**Yes**	28
Government intervention through laws or regulations	**No**	26
Education programmes for consumers and professionals	**No**	23
Official approval through certification, accreditation, or quality seals	**No**	17

III. eHealth expenditures and their funding source

Expenditure	Public funding		Private funding		Donor/non-public funding		Public-private partnerships funding	
	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]	Country response	Global response (%)[b§]
ICT equipment	**Yes**	78	**Yes**	37	**Yes**	59	—	28
Software	**Yes**	76	**Yes**	35	**Yes**	56	—	29
Pilot projects	**Yes**	69	**Yes**	33	**Yes**	51	—	28
Skills training	**Yes**	61	**No**	26	**No**	43	—	20
Ongoing support	**Yes**	61	**No**	19	**Yes**	35	—	18
Scholarships	**No**	28	**No**	8	**No**	19	—	4

IV. Capacity building

	Country response	Global response (%)[b§]
ICT education		
ICT training for students in health sciences at tertiary institutions	**Yes**	77
Institutions offer continuing education in ICT for health professionals	**Yes**	75
Professional groups offered ICT continuing education		
Medical	**Yes**	73
Nursing	**Yes**	62
Public health	**Yes**	60
Dentistry	**Yes**	54
Pharmacy	**Yes**	54

[§] Indicates the percentage of participating Member States responding "Yes"

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IIIb. eLearning target groups

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ATLAS eHealth country profiles

Based on the findings of the second global survey on eHealth

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