World Health Organization

REGIONAL OFFICE FOR **Africa**

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In this issue

Editorial

Countries in the WHO African Region continue to be affected by recurring outbreaks, natural disasters, conflicts, environmental, chemical and food-related emergencies. These acute public health events significantly impact on the health and economic development in the Region. Integrated Disease Surveillance of priority diseases, conditions and events is one of the key aspects of disease control in the WHO African Region that leads to early detection, appropriate investigation, laboratory confirmation and timely response to acute public health events.

Enhanced surveillance of priority diseases in the context of Integrated Disease Surveillance and Response (IDSR) involves the systematic regular collection, compilation, and analysis of epidemiologic data at all levels of health system delivery using standard case definitions and IDSR reporting forms. The enhanced surveillance is supported by accurate laboratory confirmation as well as linkage of epidemiological and laboratory data.

What is presented in this bulletin?

This bulletin focuses on the status of IDSR implementation and reporting with a highlight on malaria and Influenza Like Illnesses (ILI). The revitalization of IDSR in Sierra Leone uncovers effort made by this country to rebuild its health system after Ebola outbreak. This issue also highlights the critical role of some initiatives in enhancing IDSR in the region. For most sections of the bulletin, a brief introduction of the topic is provided, followed by method, key findings, major issues and challenges if any and proposed interventions aimed at improving IDSR.

Summary of key findings

a. One additional country adapted IDSR resulting into 42 countries that had adapted IDSR since its revision in 2010[1].

b. Four countries (Côte d'Ivoire, Guinea, Guinea Bissau and Niger) conducted IDSR at district level during the period under review.

c. A total of 37 countries out of 47 are producing regular epidemiological bulletins on IDSR.

d. As a result of efforts to enhance surveillance at country level, a total of 53 public health events were detected and responded to. These included but are not limited to Yellow Fever (Angola and the Democratic Republic of the Congo); Cholera (United Republic of Tanzania, the Democratic Republic of the Congo and Kenya), Zika virus infection (Cabo Verde and Guinea Bissau), Chikungunya in Kenya and Dengue in Seychelles. Food insecurity and severe acute malnutrition have significantly increased in the affected countries (Ethiopia, Lesotho, Malawi, South Africa, Zambia and Zimbabwe) due to floods and drought related to El Niño.

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1   Except Algeria, Mauritania, Mauritius and Mozambique.

e. Only six countries namely Burkina Faso, Burundi, Mali, Mauritania, Senegal and Togo out of 47 countries have reported timely IDSR data to WHO/AFRO since the beginning of 2016. The completeness of data was 94% in Western African sub region, 70% in Central African sub region and 25% in Eastern and Southern African sub region.

f. Sierra Leone revitalized IDSR as a result of the lessons learnt from Ebola Virus Disease outbreak. The country has invested in developing a resilient surveillance and response system through investment in IDSR. WHO is optimistic that a revitalized IDSR system and IHR (2005) as well as the adequate implementation of the Regional strategy for health security and emergencies will guarantee a good health security for Sierra Leone and the region.

Surveillance issues

a. The low completeness and timeliness of reporting in several countries may negatively impact on the capacity of countries to detect, verify, confirm and monitor acute public health events that threaten public health security

b. Limited number of countries that have trained IDSR officers/staff at district level

c. Limited use of technology such as eSurveillance in the context of IDSR.

Proposed action

a. To avert and mitigate the effects of health security risks and emergencies, all Member States should strengthen IDSR implementation and are encouraged to report timely all IDSR priority diseases, events and conditions, including zero reporting. Moreover, all Member States should strengthen event reporting and verifications systems.

b. Provide technical support to countries in carrying out the Joint External Evaluation (JEE)/IHR, which represents an opportunity to scale up the IDSR implementation at country level.

I. Status of the implementation of the IDSR second edition in 2010 in the WHO African Region

The Integrated Diseases Surveillance (IDS) strategy was adopted by the WHO Regional Committee for Africa in 1998. In 2005, the revised International Health Regulations (IHR) came into force, committing countries to achieve specific requirements for strengthening core capacities for detecting, assessing, reporting and responding to public health events before they become of national and international concern. The second edition of the IDSR technical guidelines (launched in 2010) as well as the training modules took into account the IHR (2005) and the emerging priority diseases and conditions. Subsequently, countries were requested to adapt and use the new IDSR guidelines and training materials to strengthen the capacities of health workers, especially at district level.

A self-assessment questionnaire was sent to Member States to get the status of IDSR implementation with regard to: 1) IDSR (2010) technical guidelines adaption; 2) year of the new technical guidelines adaptation; 3) IDSR training modules adaption; 4) conduct of training of trainers; and 5) training of districts. Countries were classified into 7 groups according to where they are in scaling up IDSR implementation as follows:

- Group 1: Countries adapted IDSR (2010) guidelines and training modules, and conducted training of trainers and started district training
- Group 2: Countries adapted IDSR (2010) guidelines and training modules and conducted training of trainers
- Group 3: Countries adapted IDSR (2010) guidelines and training modules
- Group 4: Countries only adapted IDSR (2010)
- Group 5: Countries adapted IDSR (2010) guidelines and conducted district training without training of trainers performed
- Group 6: Countries have not started adaptation of the IDSR (2010) guidelines
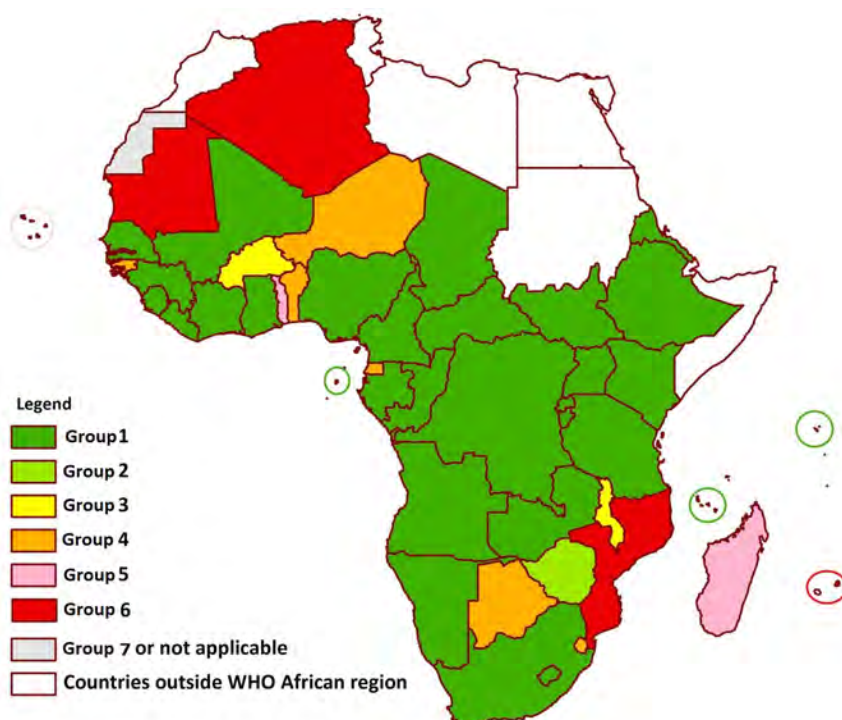- Group 7: No information provided for the status of implementation of IDSR

In addition to the process conducted by the Member states in IDSR implementation, the use of the integrated surveillance system was identified through the following questions: functionality of IDSR system, use of other surveillance systems and production of epidemiological bulletins.

As of June 2016, 42 countries (89%) out of 47 had adapted the second edition of the IDSR Technical Guidelines; one more country compared to 2015. Only Cabo Verde did not report on IDSR implementation. The latest countries that adapted the IDSR Technical Guidelines are The Gambia and Liberia in 2014, and Sierra Leone in 2015. Thirty five countries (74%) had adapted the training modules, up from 33 countries (70%) in 2015 and 30 countries (64%) in 2014. Eight additional countries conducted training of trainers (a total of 33 countries) compared to the last update in 2015; and 33 countries (70%) had started the training at district level compared to 26 countries (55%) in 2015 and 22 countries (47%) in 2014. (Figure 1).

On average, countries have trained 67% of their districts. Twelve countries conducted training in 100% of their districts while ten (10) trained less than or equal 50% of their districts (Table 1).

The African Region faces around 100 public health events per year based on data received from the Early Warning System through the Event Management System (EMS). It is urged that by the end of 2017 all the countries in group 1 and 2 will have at least 80% of districts trained, and at least 50% of districts trained for countries in group 3, 4 and 5.

Fig. 1. Status of the implementation of the IDSR in the Region as of the first semester of 2016

Legend

- Group 1
- Group 2
- Group 3
- Group 4
- Group 5
- Group 6
- Group 7 or not applicable
- Countries outside WHO African region

Group 1: Countries adapted IDSR (2010) guidelines and training modules, and conducted training of trainers and started district training (31 countries (66%))

Group 2: Countries adapted IDSR (2010) guidelines and training modules and conducted training of trainers (1 country (2%))

Group 3: Countries adapted IDSR (2010) guidelines and training modules (2 countries or (4%))

Group 4: Countries only adapted IDSR (2010) (6 countries (13%))

Group 5: Countries adapted IDSR (2010) guidelines and conducted district training without training of trainers performed (2 countries (4%))

Group 6: Countries have not started adaptation of the IDSR (2010) guidelines (4 countries (8%))

Group 7: No information provided for the status of implementation of IDSR (1 countries (2%))

Only 4 countries (Comoros, Equatorial Guinea, Madagascar and Zimbabwe) have highlighted that the framework is not yet fully operational. Furthermore, Algeria, Mauritania, Mauritius and Mozambique are using other surveillance systems such as surveillance of Acute Flaccid Paralysis and sentinel surveillance of influenza which could be an opportunity to promote integrated disease surveillance.

The production of regular and integrated epidemiological bulletins is crucial to detect changes in time in order to conduct a rapid response to epidemic and pandemic prone diseases and to monitor the impact of interventions. So far, 37 countries out of 47 are producing regular epidemiological information products. Further support is needed for the remaining countries, Congo, Eritrea, Lesotho, Madagascar, Namibia, Niger, Swaziland, the Gambia, Guinea Bissau and Togo to promote the sharing of information on priority diseases, conditions and events.

Table 1. Training conducted at district level on the implementation of IDSR in countries

Country	Year of the adaptation of the IDSR 2010	Training of trainers conducted	Number of trainers trained	Year when the district training commenced	Total number of districts in country	Number of districts trained	% of districts with trained staff	Number of participants trained
Ethiopia	2010	Yes	44	2013 & 2015	956	846	88	846
Togo	2010	Yes	28	2012	40	40	100	71
Burundi	2011	Yes	45	2012	46	13	28	235
Cameroon	2011	Yes	54	n/a	187	61	33	240
Democratic Republic of the Congo	2011	Yes	25	2012	517	350	67	5500
Namibia	2011	Yes	10	2014	35	24	69	145
Guinea	2011	Yes	20	2016	94	38	n/a	n/a
Guinea Bissau	2012	No	No	2016	11	n/a	n/a	n/a
United Republic of Tanzania	2011	Yes	8	n/a	137	137	100	476
Ghana	2011	Yes	20	2012	216	114	53	342
Angola	2012	Yes	34	2012	165	118	72	36
Congo	2012	yes	19	2015	39	7	18	30
Sao Tome and Principe	2012	Yes	15	2013	7	7	100	105
Comoros	2012	Yes	3	2012	17	17	100	105
Eritrea	2012	Yes	40	2014	58	58	100	540
Gabon	2012	yes	20	2013	51	51	100	150
Kenya	2012	Yes	67	2013	286	47	16	200
Lesotho	2012	Yes	93	2013	10	10	100	136
Mali	2012	Yes	30	2012	63	8	12	30
Rwanda	2012	Yes	10	2012	43	43	100	2000
Zambia	2012	Yes	49	n/a	74	5	7	200
Cote d'Ivoire	2012	Yes	20	2016	82	16	20	181
Seychelles	2012	Yes	20	2012	26	26	100	>50
Niger	2012	No	No	2016	71	n/a	n/a	n/a
Uganda	2012	Yes	57	2013	112	108	96	5829
Madagascar	2013	No	n/a	2014	112	14	13	37
South Africa	2013	Yes	40	n/a	52	26	50	400
Senegal	2013	Yes	360	2013	76	76	76	n/a
South Sudan	2013	Yes	50	2013	80	65	81	n/a
Nigeria	2013	Yes	4	2015	774	90	12	180
Gambia	2014	Yes	44	2015	7	7	100	300
Liberia	2015	Yes	20	2015	15	15	100	1500
Sierra Leone	2015	Yes	144	2015	13	13	100	1823

n/a: data not available

II.   Status of IDSR reporting in the African Region, January–June 2016

1. Timeliness and completeness of reporting

IDSR includes priority diseases, conditions and events under national surveillance and mandates health workers to identify cases of priority infectious diseases and report them regularly to the next level of the health system. For each notifiable disease and event the immediate, weekly or monthly reporting form should contain at least the total number of cases, deaths, and laboratory confirmed cases if applicable.

The level of completeness of surveillance data provides an important source of information regarding disease trends, and characteristics of the persons affected, if it is made consistently. Timeliness in reporting is extremely important for an appropriate and effective public health action. Based on the lessons learnt from the recent Ebola virus disease epidemics in West Africa in addition to the frequent PHEs occurring in the region, rapid collection, analysis and reporting of disease is required and should be made functional in all Member States.

In this section, reports received at the Regional office by Wednesday of the following week are considered as timely. The calculation of completeness is done by dividing the total number of weeks with disease and conditions reported by the total number of annual epidemiological weeks. We consider that countries highlighted in green reported regularly, every week and transmit data to WHO Regional office (Figure 2).
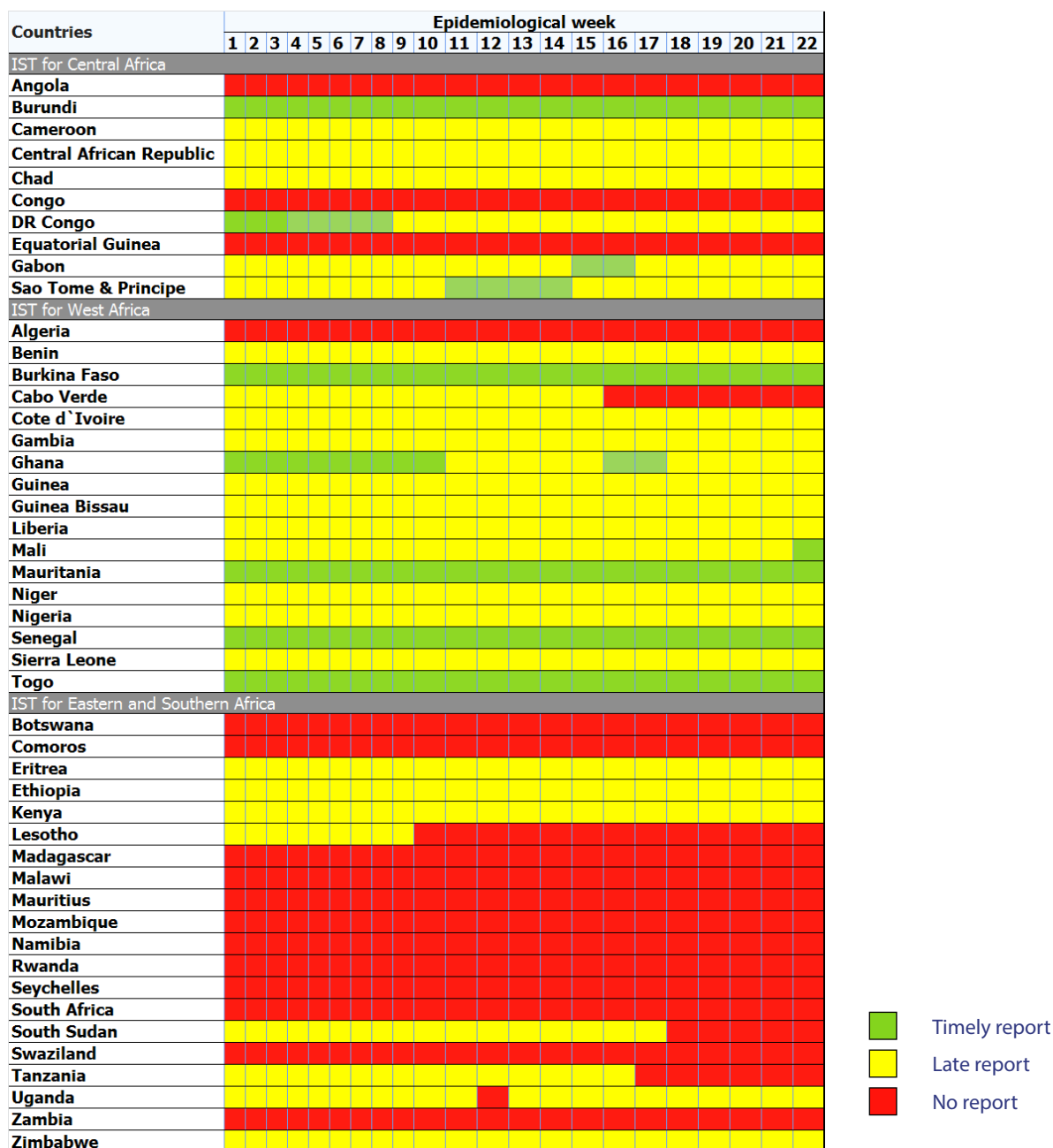
Only six countries namely Burundi, Burkina Faso, Senegal, Mali, Togo and Mauritania report timely IDSR data during the first semester of 2016. At least 80% of reporting completeness is considered as satisfactory. From week 1 to 22 in 2016 four countries (Cabo Verde, Lesotho, South Sudan and United Republic of Tanzania) reported less than 80% of completeness. From January to June 2016, the mean of completeness of the data received in the WHO regional office for Africa was around 57%. The completeness of data was 94% in Western African sub region, 70% in Central African sub region, and 25% in Eastern and Southern African sub region. The result showed that completeness and timeliness of IDSR reporting is still low.

During the first semester of 2016, 31 countries out of 46 (67%) shared data for at least one notifiable disease, condition or event (Figure 2). Sixteen (16) countries (35%) namely Algeria, Angola, Botswana, Comoros, Congo, Equatorial Guinea, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, Swaziland and Zambia didn't share data for the first semester of 2016. Among these countries, 13 (81%) are in the Eastern and Southern Africa sub-region and 3 (19%) are in the Central African sub-region. Compared to Central and Western Africa, Eastern and Southern countries are relatively non-compliant in sharing data on a weekly basis with WHO.

Members States are invited to improve the completeness of data and the timeliness of reporting and are encouraged to develop and share their weekly IDSR bulletin, which is one of the indicator that the system is functioning.

Fig. 2. Completeness of notifiable diseases and events data on weekly basis by country in the African Region

Countries	Epidemiological week 1–22
IST for Central Africa	
Angola	No report (weeks 1–22)
Burundi	Timely report (weeks 1–22)
Cameroon	Late report
Central African Republic	Late report
Chad	Late report
Congo	No report (weeks 1–22)
DR Congo	Timely report (weeks 1–6), Late report (weeks 7–22)
Equatorial Guinea	No report (weeks 1–22)
Gabon	Late report, Timely report (weeks 15–17)
Sao Tome & Principe	Late report, Timely report (weeks 11–14)
IST for West Africa	
Algeria	Late report
Benin	Late report
Burkina Faso	Timely report
Cabo Verde	Late report, No report (weeks 15–22)
Cote d`Ivoire	Late report
Gambia	Late report
Ghana	Timely report (weeks 1–8), Late report, Timely report (weeks 15–16)
Guinea	Late report
Guinea Bissau	Late report
Liberia	Late report
Mali	Timely report (weeks 1–21, 22)
Mauritania	Timely report
Niger	Late report
Nigeria	Late report
Senegal	Timely report
Sierra Leone	Late report
Togo	Timely report
IST for Eastern and Southern Africa	
Botswana	No report (weeks 1–22)
Comoros	No report (weeks 1–22)
Eritrea	Late report
Ethiopia	Late report
Kenya	Late report
Lesotho	Late report (weeks 1–8), No report (weeks 9–22)
Madagascar	No report (weeks 1–22)
Malawi	No report (weeks 1–22)
Mauritius	No report (weeks 1–22)
Mozambique	No report (weeks 1–22)
Namibia	No report (weeks 1–22)
Rwanda	No report (weeks 1–22)
Seychelles	No report (weeks 1–22)
South Africa	No report (weeks 1–22)
South Sudan	Late report, No report (weeks 18–22)
Swaziland	No report (weeks 1–22)
Tanzania	Late report, No report (weeks 16–22)
Uganda	Late report, No report (week 11)
Zambia	No report (weeks 1–22)
Zimbabwe	Late report

Legend:
- Green — Timely report
- Yellow — Late report
- Red — No report

2. Surveillance of priority diseases, conditions and events reported by category in the African Region, January–June 2016

The revised IDSR technical guideline 2010 (IDSR-2010) proposes four categories of priority diseases: category A: epidemic prone diseases; category B: diseases targeted for eradication or elimination; category C: other major diseases, events or conditions of public health importance; and category D: diseases or events of international concern (Table 2). Each country in the African region is encouraged to adapt the list of priority diseases conditions and events according to their local epidemiological situation, needs and health system.

In this section, a comparison between the four categories was made in order to identify which category recorded the highest number of reporting diseases in the region that may require a special focus on interventions. Among the top two categories of priority diseases identified, the five commonly reported diseases will be presented. A focus on the first most reported for each of the top 2 category disease during the first semester of 2016 will be highlighted.

Table 2. List of Priority diseases by category in the IDSR technical guideline 2010

Category A: Epidemic prone disease	Category B: Diseases targeted for eradication or elimination	Category C: Other major diseases events or conditions of public health importance	Category D: Diseases or events of international concern in addition to those noted in other columns
Cholera[1]	Dracunculiasis	Diarrhoea with dehydration <5	Human influenza due to a new subtype
Meningococcal meningitis	Leprosy	Severe pneumonia <5	SARS
Diarrhoea with blood (*Shigella*)	Neonatal tetanus	HIV/AIDS (*New cases*)	Smallpox
Viral hemorrhagic fevers*[1]	Poliomyelitis [1] (AFP)	Tuberculosis	Any public health event of international or national concern (infectious, zoonotic, food borne, chemical, radionuclear, or due to unknow condition)
Dengue	Onchocerciasis	Malaria	
Typhoid fever	Buruli ulcer	STIs	
Yellow fever [1]	Filariasis	Trypanosomiasis	
Measles	Noma	Trachoma	
Influenza-like illness (ILI)		Acute viral hepatitis	
Plague[1]		Rabies	
Anthrax		Maternal deaths	
Chikungunya		Hypertension	
		Diabetes mellitus	
		Adverse events following immunization (AEFI)	

[1] Disease specified by IHR (2005) for immediate notification
*Ebola, Marburg, Rift Valley, Lassa, Crimean Congo, West Nile Fever

[1] Disease specified by IHR (2005) for immediate notification

The category A " Epidemic prone disease" and category C "Other major diseases events or conditions of public health importance" represented the top two categories with most reported diseases. Out of 32 137 717 diseases reported from all categories combined, category C represented 91% and category A only 5% of reported diseases.

2.1 Category A: epidemic prone diseases

The category A regroups 12 epidemic prone diseases which are reported on weekly basis for monitoring trends of diseases to timely detect epidemics except Cholera, Meningitis, and Viral hemorrhagic fevers that are diseases specified by IHR (2005) for immediate notification. Of the 1 657 677 disease reports under this category, the commonly reported diseases through IDSR were ILI (43%), Severe Acute Respiratory Infection (SARI) (22%), Bloody diarrhoea (13%), Measles (8%) and Cholera (7%). Meningitis accounts for the highest number of deaths under this category (41%), followed by SARI (22%), Typhoid fever (15%), Cholera (9%) and measles (5%). This is illustrated in Figure 4 on page 8.

Fig. 3. List of Priority diseases by category in the IDSR technical guideline 2010
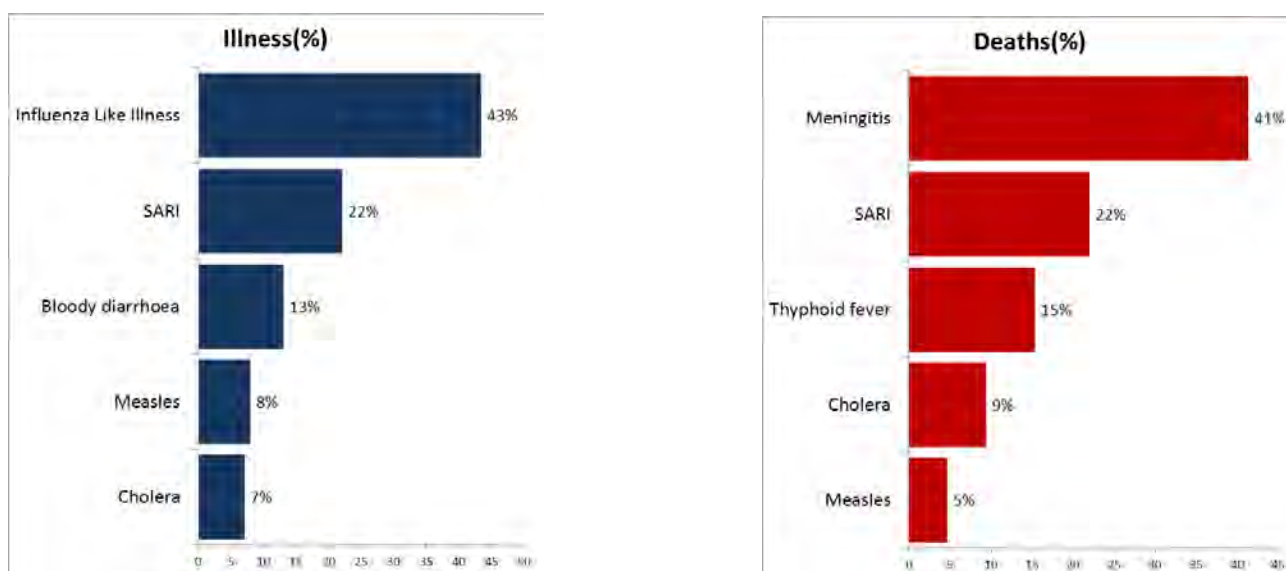
2.1.1 Influenza Like Illnesses (ILI) in the African region, January–June 2016

Respiratory infections are a significant cause of morbidity and mortality due to infectious diseases globally. The mortality rates are particularly high among infants, children and the elderly. An improved understanding of the epidemiological, virological features and seasonality of respiratory infections in Africa is essential for optimizing public health strategies for their prevention and control, including immunization. Surveillance for respiratory infections is based on the ILI and SARI case definitions; and virological and/or bacteriological laboratory confirmation. The 2009 influenza pandemic had highlighted the importance of using a standardized approach and terminology in conducting influenza surveillance activities. To improve regional capacity for surveillance, the WHO Regional Office for Africa developed a regional strategy whereby ILI and SARI were included as priority diseases in the technical guidelines for integrated disease surveillance and response in the African Region, and specific guidelines for influenza sentinel surveillance.

The goals of ILI surveillance are to expedite early detection of unusual events that might indicate a shift in the severity or pattern of disease associated with influenza, or the emergence of new influenza strain; to establish and monitor baselines rates of severe respiratory disease, including monitoring the severity and impact of influenza; to describe and monitor vulnerable groups at highest risk of severe disease; and to detect antigenic and genetic changes in circulating viruses or the appearance of antiviral resistance.

As of June 2016, according to the data received from countries, a total of 175 220 ILI cases had been reported and ILI was the most reported category A disease during the first semester of 2016 with 15 deaths all reported in the United Republic of Tanzania (1028; 1% cases and 15 deaths). Zimbabwe reported the highest number of cases (145 805; 83%) followed by Gabon (11 350; 6%), Central African Republic (8427; 5%), Ghana (8 076; 5%), Eritrea (455) and Niger (79). The weekly epidemiological trends of ILI in the countries are difficult to interpret due to incomplete and irregular reporting, and lack of laboratory diagnostic. (Figure 4, next page).

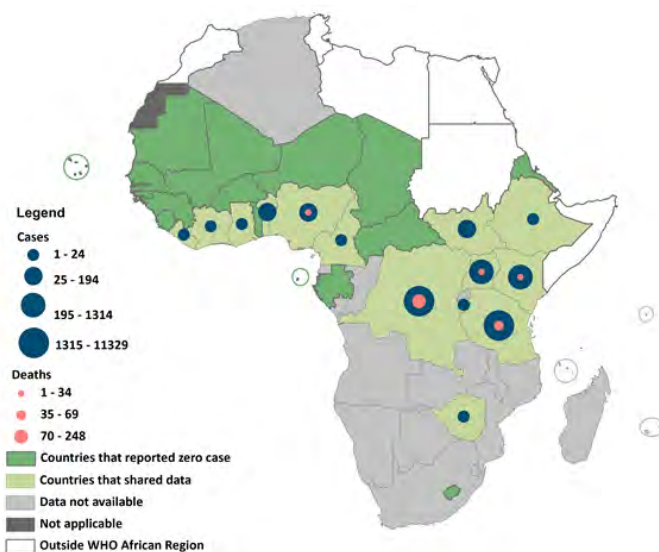**Fig. 4.** Influenza-Like-Illnesses cases trend in selected countries in the African Region in 2016

Influenza-Like-Illnesses cases, Niger

Influenza-Like-Illnesses cases, United Republic of Tanzania

Influenza-Like-Illnesses cases, Zimbabwe

Influenza-Like-Illnesses cases, Central African Republic

Influenza-Like-Illnesses cases, Eritrea

Influenza-Like-Illnesses cases, Gabon

Influenza-Like-Illnesses cases, Ghana
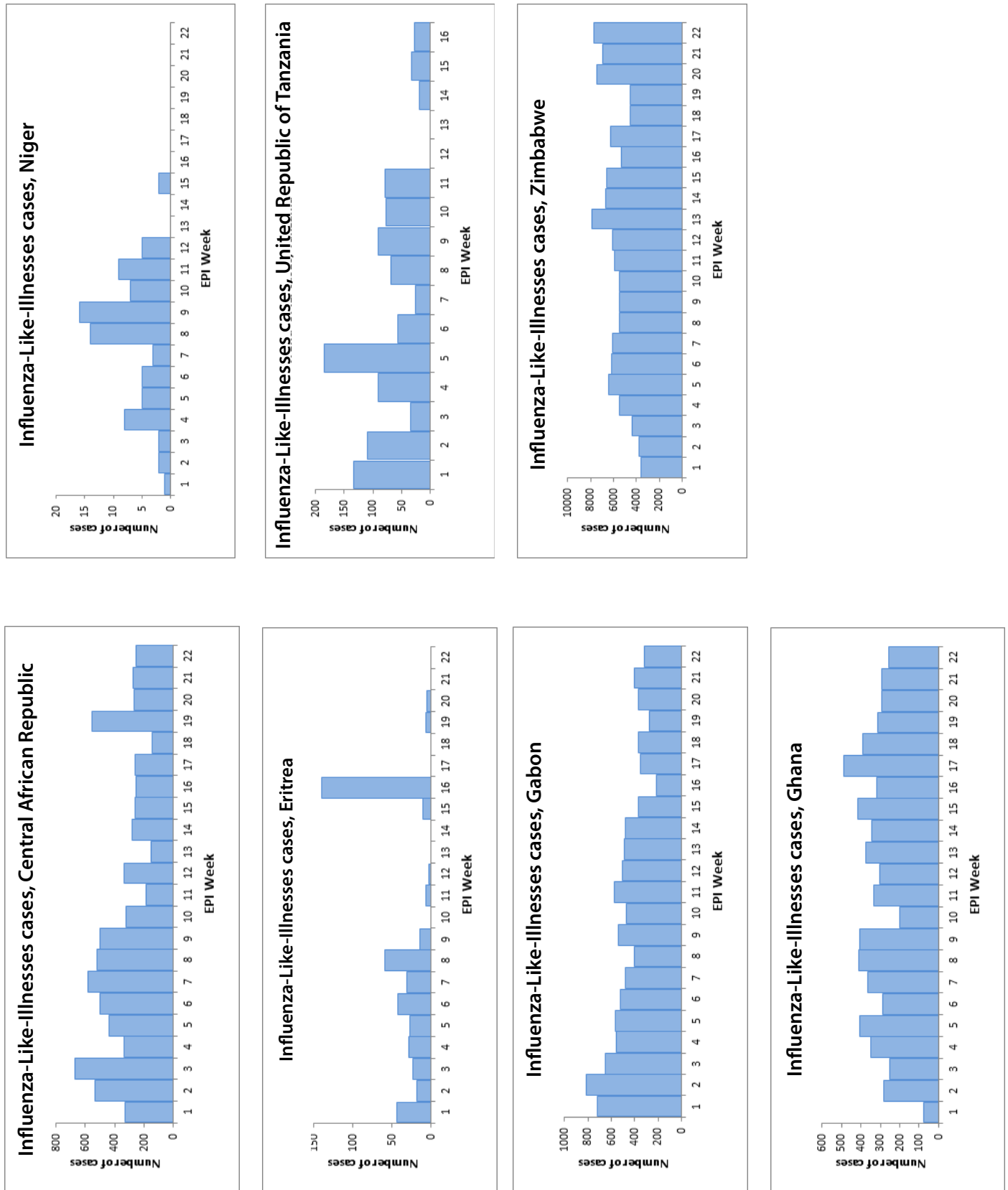
2.1.2 Distribution of the five commonly reported epidemic prone diseases

Between January and June 2016, the number of cases and deaths of the five commonly reported epidemic prone diseases were as follows: Bloody diarrhea (56 453 cases, 84 deaths, CFR: 0.1%); Cholera (51 347 cases, 383 deaths, CFR: 0.7%); Measles (37 060 cases, 218 deaths and CFR: 0.6%); Meningitis (20 875 cases, 1666 deaths, CFR: 8%); and Yellow fever (4670 cases, 104 deaths, CFR: 2.2%). Meningitis represented the diseases with highest case fatality ratio. (Figure 5)

Fig. 5. Distribution of common category A diseases across the AFRO Region for the first semester 2016

Distribution of Bloody diarrhoea cases and deaths, cumulative week 1–22, 2016

Distribution of Cholera cases and deaths, cumulative week 1–22, 2016

Distribution of Measles cases and deaths, cumulative week 1-22, 2016

Distribution of Meningitis cases and deaths, cumulative week 1-22, 2016
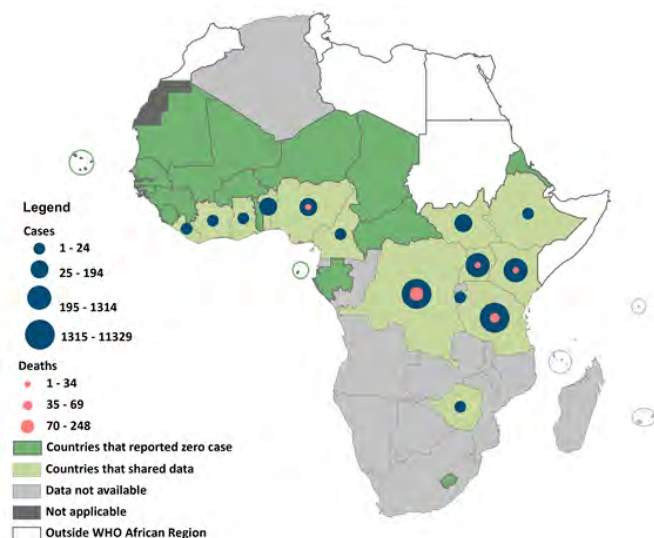
Distribution of Yellow fever cases and deaths, cumulative week 1-22, 2016
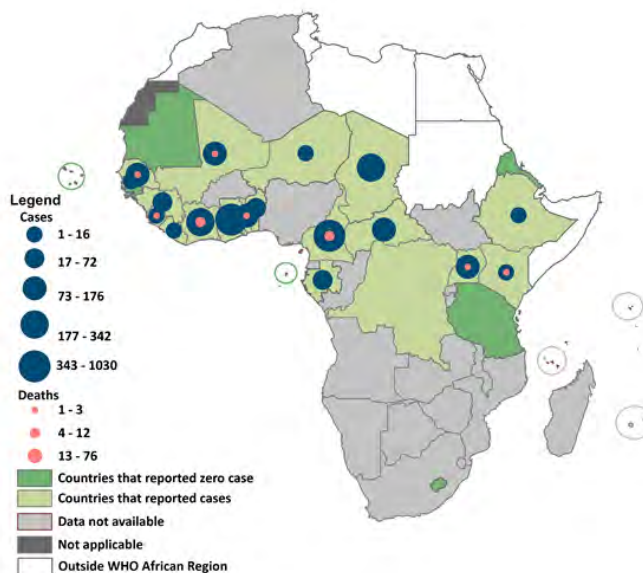
2.2 Category C: other major diseases, events or conditions of public health importance

In category C (Table 3) Malaria represented the biggest burden of disease, accounting for 98% of cases and 84% of deaths. Malnutrition (2% cases; 2% deaths), rabies and adverse events following immunization (AEFI) were the other diseases reported under this category.

Table 3. Top 5 category C diseases and causes of death

Disease	# of Cases	# of Deaths
AEFI	435	4
Rabies	2 165	95
Malnutrition*	479 528	415
Malaria	27 319 504	17 628
Maternal Deaths	—	2 729
Total	27 801 632	20 871

AEFI: Adverse events following immunization
*Malnutrition includes severe and moderate malnutrition

2.2.1 Malaria in the African Region in 2016

Malaria is one of the leading causes of illness and death in many African countries. It is a highly prevalent mosquito borne tropical illness caused by Plasmodium sp. and characterized by fever. Four species of the malaria parasite are transmitted by the female Anopheles mosquitoes: Plasmodium falciparum, Plasmodium ovale, Plasmodium vivax, or Plasmodium malariae. The transmission of malaria is highly seasonal in some areas in African countries but is perennial in the remainder of the region. The diagnosis of malaria is by microscopy of thick blood smears to confirm the presence of malaria parasites or malaria rapid diagnostic tests. Malaria is preventable and curable, and increased efforts are dramatically reducing the malaria burden in many countries.

Malaria continues to have a severe socioeconomic impact on our populations. Across Africa, the prevention of new cases of malaria attributable to malaria control activities saved an estimated US$ 900 million in case management costs between 2001 and 2014. Despite substantial costs savings, malaria continues to placea

heavy economic burden on health systems in Africa. Since 2000, the average annual cost of case management alone is estimated at nearly US$ 300 million. It is one of the causes of household poverty because it results in absenteeism from the daily activities of productive living and income generation. Malaria also continues to prevent many children from attending school due to illness, diminishing their capacity to realize their full potential.

The goal of malaria surveillance is to detect malaria epidemics promptly, especially in areas with seasonal epidemic transmission or with large at risk populations.

In 2016, a total of 28 799 203 malaria cases were reported with 19 071 deaths from 12 countries. The table 4 below shows the distribution of malaria in selected countries. Eritrea and Tanzania both reported far less than 1% with no deaths (See Figure 6 on pages 12–13). According to the 2015 World Malaria Report, in 2015, it is estimated that 15 countries accounted for 80% of cases, and 15 countries accounted for 78% of deaths.

Table 4. Malaria cases and deaths

Country	Malaria cases (%)[*]	Malaria deaths (%)[**]
Democratic Republic of the Congo	49	64
Uganda	15	7
Burundi	14	10
Kenya	8	4
Ethiopia	3	1
Niger	2	2
Sierra Leone	2	5
Cameroon	2	2
South Sudan	1.8	1
Guinea	0.8	1
Chad	0.6	2
Zimbabwe	0.6	1

* percentage of total malaria cases in the region.
** Percentage of total malaria deaths in the Region

The weekly epidemiological trend for each country was not similar during, if any for the first semester of 2016. No clear epidemic curve is seen in any of the countries during this first semester. In Cameroon, South Sudan and Uganda the first weeks of the year started with high cases. By Week 7 Cameroon reported a drop in number of cases, and the downward trend was maintained to the end of the 22 week. South Sudan and Uganda experienced a downward trend, with Uganda plateauing from week 8 to 17; no data was available for Uganda in week 12. Burundi, Chad, Democratic Republic of the Congo, Guinea and Niger experienced a somewhat steady number of cases throughout the first semester. However, Niger reported a spike in week 19, while Chad experienced a dip from week 12 to 15 before regaining the initial plateau.

The curves of Eritrea, Ethiopia, Sierra Leone and Zimbabwe are worth mentioning as well. Eritrea started the year with the lowest number of cases. By week 6 it started experiencing an increase and peaked at week 13. The curve dipped drastically in week 15 before rising to levels close to the beginning of the year. Ethiopia experienced a plateau for most of the semester with a sharp peak in week 8. Sierra Leone curve is similar to Ethiopia but with the peak in week 14, no data for week 15 before resuming the plateau.

The data presented that seasonality according to geographic location is playing a role in the malaria epidemiological trend. Analysis of epidemiological changes of any disease should be the starting point to guide prioritization of interventions.

Fig. 6. Malaria epidemiological trend in 9 countries in the African Region, January–June 2016
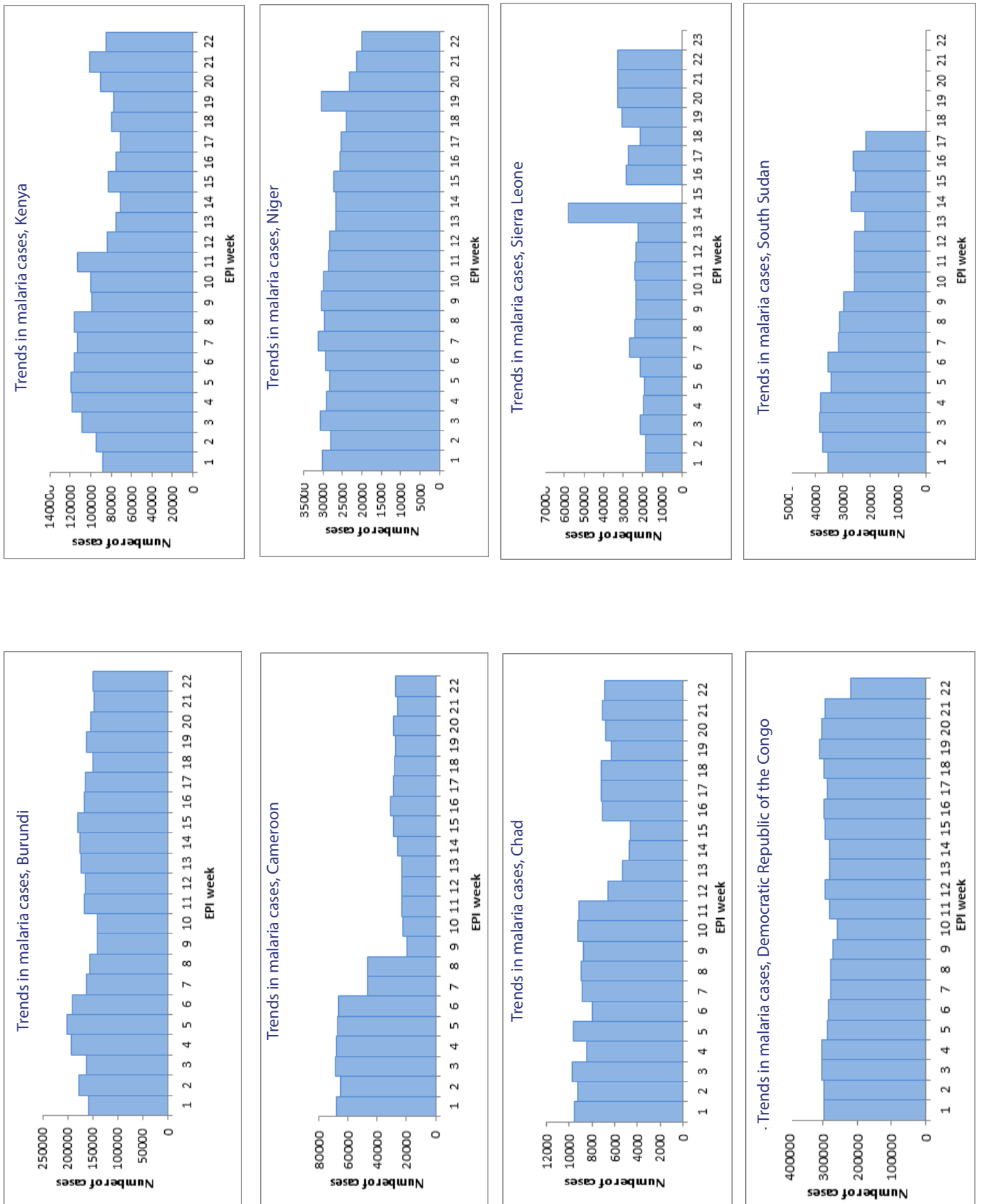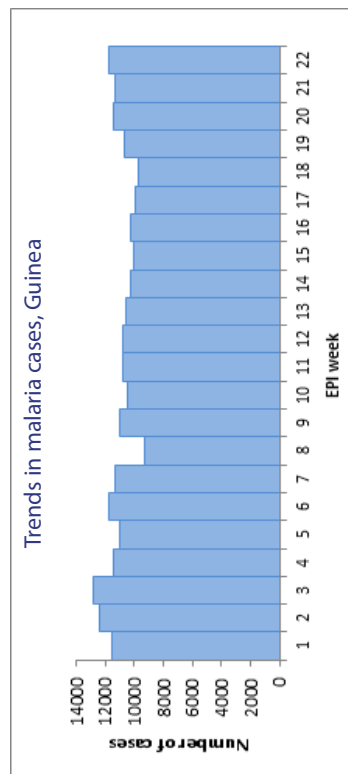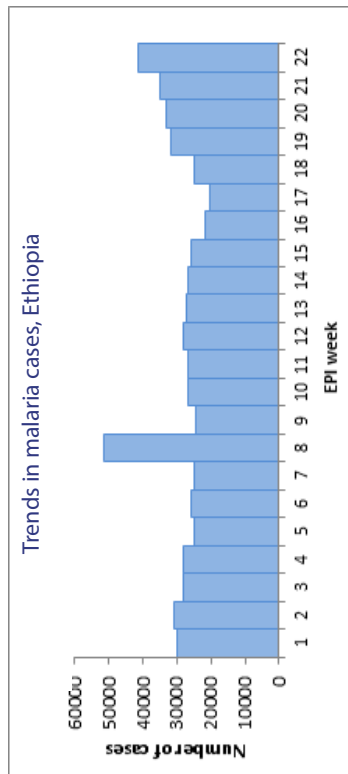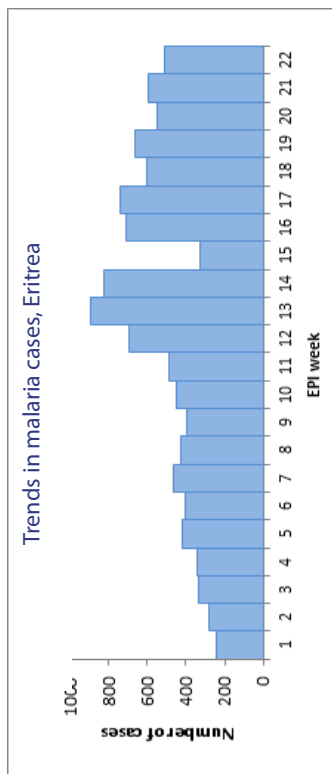
Fig. 6. (Continued)

Trends in malaria cases, Uganda

Trends in malaria cases, United Republic of Tanzania

Trends in malaria cases, Zimbabwe

Trends in malaria cases, Eritrea
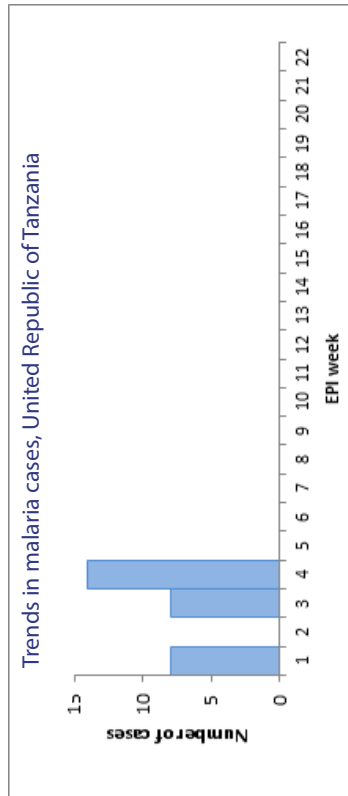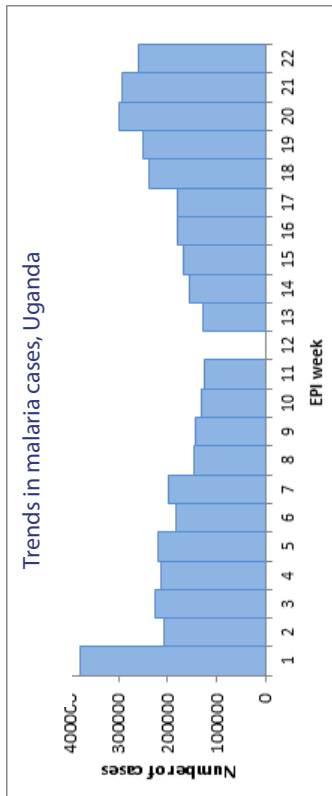
Trends in malaria cases, Ethiopia
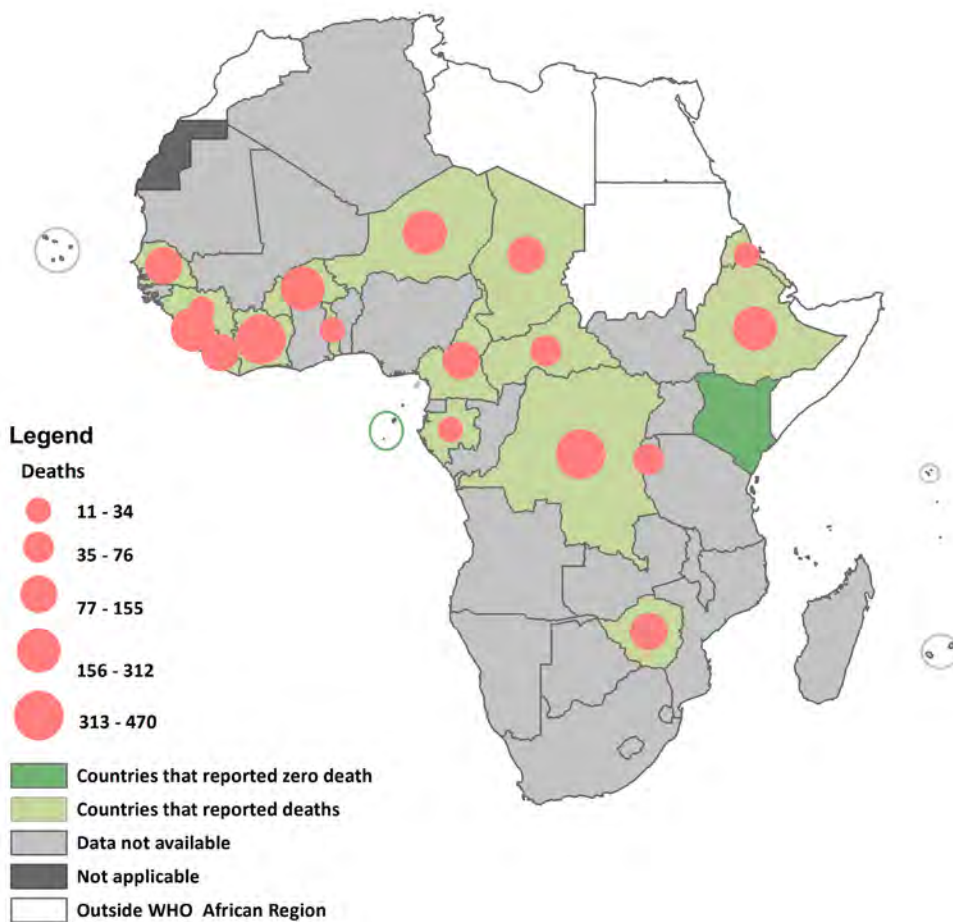
Trends in malaria cases, Guinea
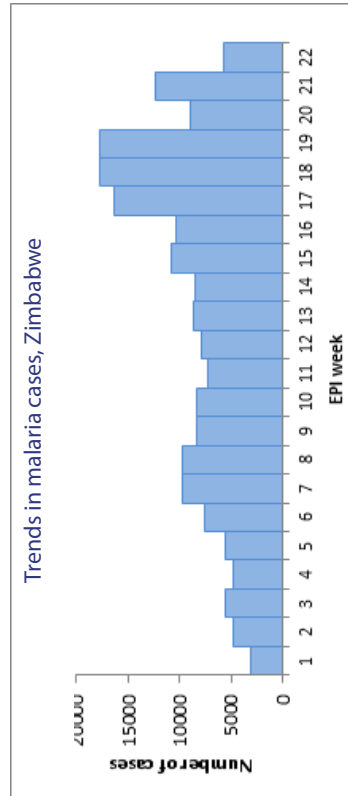
2.2.2 Maternal death reporting

Maternal death reporting through IDSR is mandatory following the revision of the IDSR technical guideline in 2016. Efforts are being made to support countries in their efforts to notify on a weekly basis data on maternal deaths.

As of June 2016, a total of 2904 maternal deaths were reported by 17 countries as illustrated in Figure 7.

Fig. 7. Distribution of Maternal deaths, cumulative week 1–22, 2016

Legend

Deaths

- 11 - 34
- 35 - 76
- 77 - 155
- 156 - 312
- 313 - 470

Countries that reported zero death
Countries that reported deaths
Data not available
Not applicable
Outside WHO African Region

2.3 Category B diseases targeted for eradication or elimination

The distribution of the most reported diseases under category B is presented in figures 8.a–c below. Acute Flaccid Paralysis (AFP) was the most widely reported disease followed by neonatal tetanus (figure 8.b) and dracunculiasis (figure 8.c). Furthermore, surveillance for AFP is used to capture all true cases of paralytic poliomyelitis and it is part of the indicators for monitoring the performance of surveillance of Poliomyelitis. As we approach the polio end game, countries would benefit in using the already set surveillance infrastructure for IDSR.

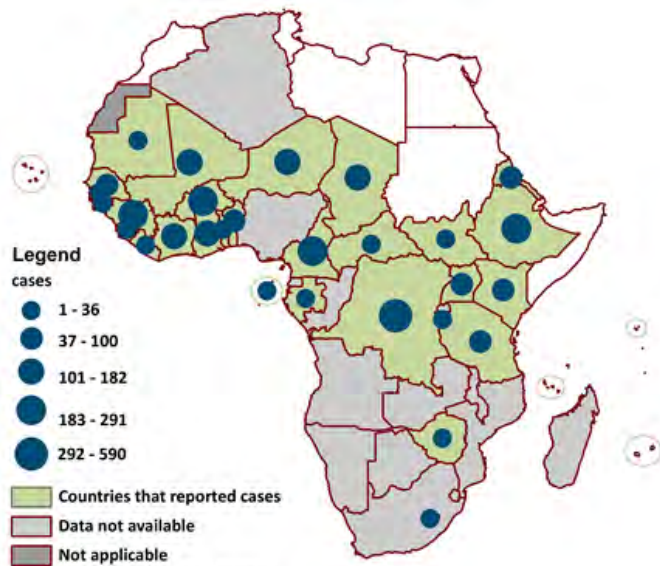**Fig. 8.a.** Distribution of AFP cases, cumulative week 1–22, 2016

Fig. 8.b. Distribution of Neonatal tetanus cases, cumulative week 1–22, 2016
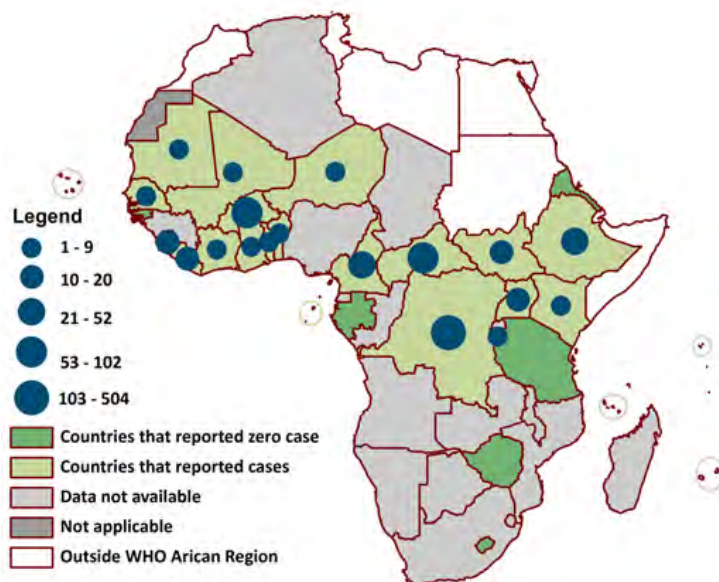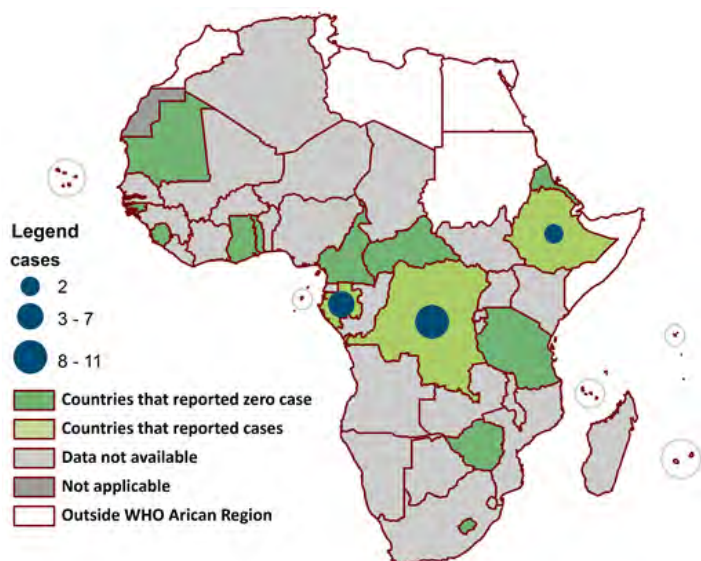

Fig. 8.c. Distribution of Dracunculiasis cases, cumulative week 1–22, 2016

III. Revitalization of IDSR in Sierra Leone

IDSR roll-out in Sierra Leone

Since adoption of the strategy in 2003, IDSR had not been fully implemented in Sierra Leone. The massive cholera outbreak in 2012 and subsequent Ebola Virus Disease (EVD) in 2014 were a pointer to the prevailing weaknesses in the disease surveillance and response system. Beginning 2015, WHO has been providing support to the revitalization of Integrated Disease Surveillance and Response starting with adaptation and printing of the IDSR technical guidelines, training modules and reporting tools. This was followed by training of trainers (TOTs) from the National level, District Health Management Teams (DHMTs), teaching institutions and animal health departments to promote the One Health approach. The trained TOTs (144 personnel) were used to rapidly roll-out IDSR training among health facility staff countrywide. This training targeted to have at least one trained health worker per health facility. An additional series of mop-up trainings were conducted in early 2016 to ensure 100% coverage of health facilities. A total of 1828 personnel from 1315 health facilities were trained.

Tracking IDSR performance

With this foundation laid, the next phase involved improving IDSR completeness and timeliness among other parameters. WHO field staff provided support to the District Health Management Teams (DHMTs) in receiving, transcribing, validating and reporting IDSR data. IDSR performance indicators were reviewed at district level and feedback provided during monthly district level meetings with health facility in-charge. On Job Trainings (OJT) were conducted, prioritizing silent facilities.

The health facility completeness rate has steadily increased from an average of about 30% in quarter 3 of 2015 to an average of 92% in quarter 2 of 2016. During the first two quarters of 2016, 89% of the 18 suspected outbreaks were detected by health workers on time, 78% of the suspected outbreaks notified to the districts within 24 hours and rapid response mounted on time (within 48 hrs.) to 93% of the suspected outbreaks (EVD, cholera, yellow fever, Lassa Fever and human rabies).

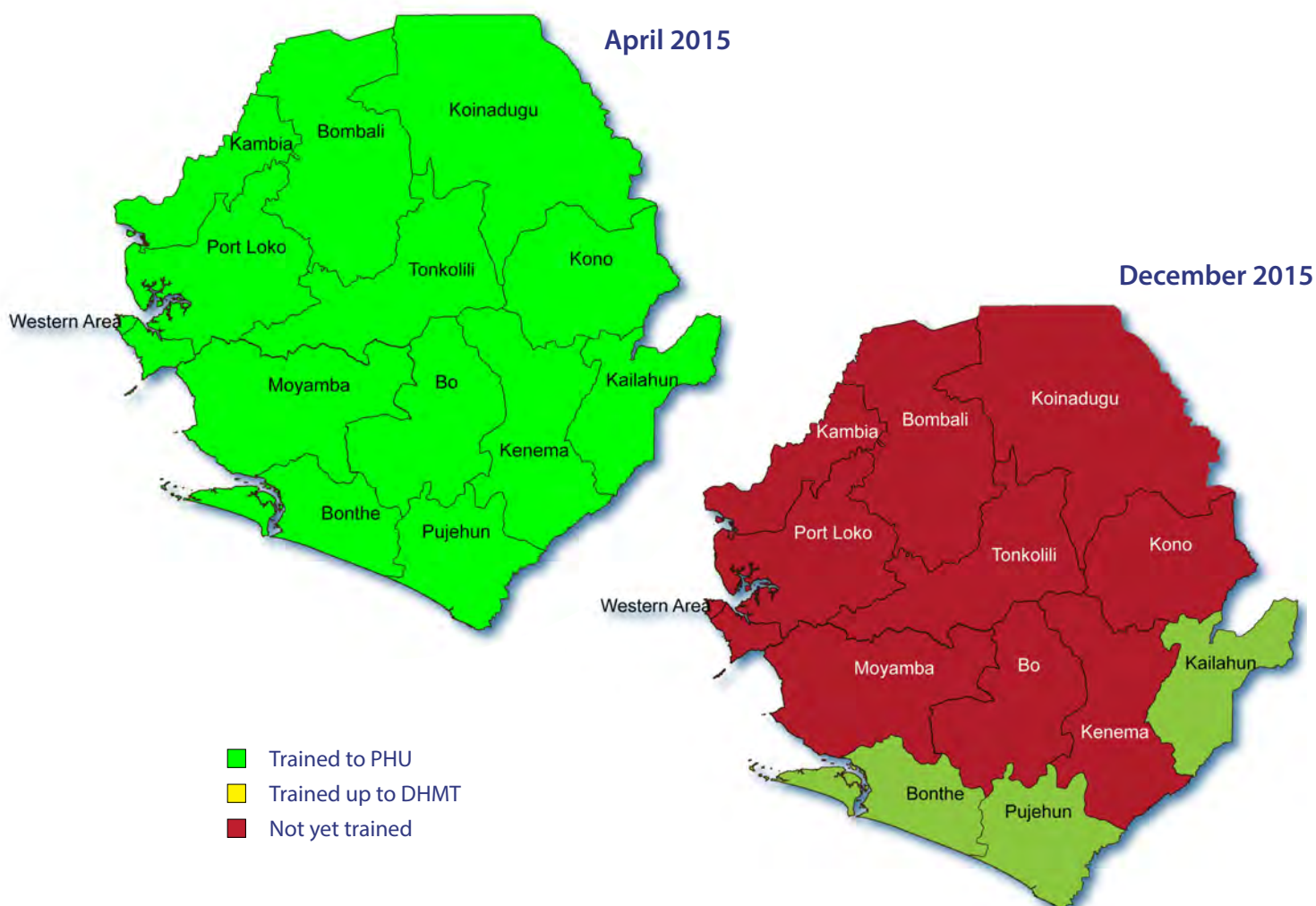**Fig. 9. IDSR training roll-out coverage**

Legend:
- Trained to PHU (green)
- Trained up to DHMT (yellow)
- Not yet trained (red)

Fig. 10. District RRT and WHO field personnel interviewing family members of a suspected yellow fever case in Moyamba District
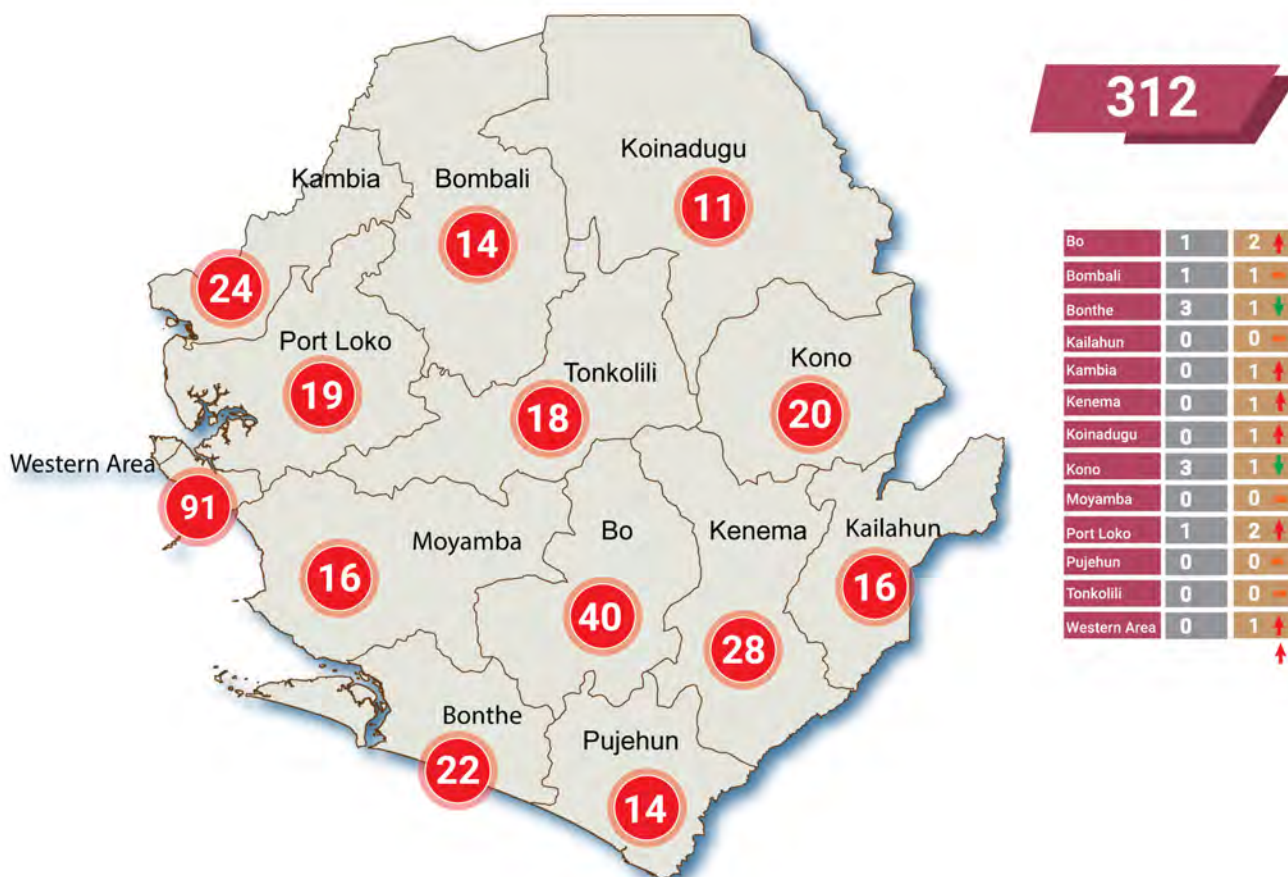

Maternal Death Surveillance and Response

Maternal Death is one of the priority events under the IDSR system. In the first half of 2016, a total of 312 maternal deaths have been reported through the IDSR system which is a 3-fold improvement in maternal death reporting compared to previous reporting through District Health Information Software (DHIS2). The current roll-out of Community Based Surveillance (CBS) will further improve maternal death reporting. Following constitution and operationalization of maternal deaths review committees in all districts, maternal deaths review have improved from 32% in Quarter 1 to 74% in quarter 2, 2016.

Fig. 11. Reported maternal deaths by district, week 1–27, 2016

Bo	1	2 ↑
Bombali	1	1 –
Bonthe	3	1 ↓
Kailahun	0	0 –
Kambia	0	1 ↑
Kenema	0	1 ↑
Koinadugu	0	1 ↑
Kono	3	1 ↓
Moyamba	0	0 –
Port Loko	1	2 ↑
Pujehun	0	0 –
Tonkolili	0	0 –
Western Area	0	1 ↑

Information-sharing and Feedback

Since week 35 of 2015, Sierra Leone has consistently generated and disseminated a weekly epidemiological bulletin with the support of WHO. The bulletin is shared with districts, other disease control programs and local and international partners for information and feedback.

The visibility created by the bulletin has led to improvement of completeness and timeliness indicators. All districts are currently producing and disseminating district specific weekly epidemiological bulletins with support of WHO field staff.

Community Based Surveillance

Increasing sensitivity of the surveillance: Towards strengthening Event-Based Surveillance, WHO is supporting the Ministry of Health and sanitation (MOHS) to implement Community Based Surveillance (CBS) to compliment indicator based surveillance. CBS Standard Operating Procedures, guidelines, training manual, reporting tools and job aides and flip charts for CHWs have been developed. National and district level TOTshave also been conducted. CBS roll-out in 3 districts is in progress with planned scale-up to the remaining districts by December 2016. This will increase the sensitivity of the surveillance system by further broadening the surveillance base. MOHS with support of Partners established EVD surveillance at community level, this have provided a platform for implementation community Based surveillance in Sierra Leone.

Use of innovations in surveillance and response

The MOHS with support of WHO developed and validated integrated supervisory tools for district and health facility levels. For the first time, an electronic platform was used during the IDSR Integrated support supervision in Quarter 1 and 2. Tablets and mobile phones were used to collect supervisory checklist data which included Geo-coordinates using the ODK collect. WHO has supported MOHS in development of Data Quality Audit (DQA) tools which will use the electronic platform in Q3. The electronic platform offers the benefit of real-time access to the data as it is collected, easy data retrieval and analysis, data security and establishment of a national database.

WHO is also working with other partners to support the MOHS to develop an electronic IDSR reporting platform (e-IDSR). The web-based platform which was successfully piloted in three districts in April to June 2016 is currently being rolled out nationwide in phases. In the initial phase, e-IDSR roll-out to district level will be completed by August 2016 to allow for data entry by districts using computers and tablets. The second phase which is planned for the last quarter of 2016 will entail roll-out to health facilities for data entry by individual health facilities using mobile phones. The system will be integrated with the national DHIS2 platform for efficiency and sustainability. A functional e-IDSR will ease data entry, improve data quality, ensure a national IDSR database and increase efficiency.

Conclusion

Lessons learnt from Ebola outbreak have been useful in developing a resilient surveillance and response system. Investment in IDSR in Sierra Leone is paying off. WHO is optimistic that a revitalized IDSR system and IHR (2005) will guarantee a good health security for Sierra Leone and the region.

IV. HSE Cluster's flash news during the first semester of 2016

1. IHR joint external evaluation: JEE assessment

Under the International Health Regulations (IHR (2005)), countries are under obligation to build their capacities to detect, prevent, respond to national, regional and international public health risks, including infectious disease threats, and chemical and radiological events. WHO plays the coordinating role in IHR monitoring and implementation, and together with its partners, helps countries to build the essential capacities that will strengthen their health security. None of the Member States in the Region has achieved the IHR minimum core capacities as of June 2016. Furthermore, the IHR annual self-assessment by Member States was found to be inadequate based on the experience from the recent Ebola virus epidemic in West Africa. The IHR Review Committee on Second Extensions for establishing National Public Health Capacities and on IHR Implementation (WHA 68/22 Add.1) recommended "to move from exclusive self-evaluation to approaches that combine self-evaluation, peer review and voluntary external evaluations involving a combination of domestic and independent experts".

The Joint External evaluation (JEE) tool – IHR (2005) is intended to assess country capacity to prevent, detect, and rapidly respond to public health threats independently and further characterize the functionality of country's IHR core capacities for ensuring health security taking into account the "One health" approach. The JEE allows countries to identify their most urgent needs and to prioritize opportunities for enhanced preparedness and response, and to engage with current and prospective donors and partners to target resources effectively.

WHO participated in the JEE of the IHR (2005) joint assessment in collaboration with the partners on the Global Health security initiative countries in Tanzania and Ethiopia during the first quarter of 2016, and Mozambique in April 2016 using the JEE tool.

JEE represents a good opportunity to support the scaling up of the IDSR implementation as real-time surveillance and reporting are among the 19 packages in JEE that are assessed.

Fig. 12. : JEE assessment in Ethiopia and Mozambique

2. eSurveillance assessment in Mauritania

For the past few years, Mauritania has integrated the utilisation of electronic tools to support the implementation of IDSR. In order to further consolidate these tools into a comprehensive system that enhances collection and transfer of national surveillance data country, the Mauritanian Health Ministry requested support and guidance from WHO on the strategy to implement new technologies for surveillance.

In response, WHO AFRO deployed an evaluation mission with surveillance experts from Mauritania, specialists from the regional Intercountry Support Team (IST) office in Ouagadougou and technical information and communication technologies (ICT) experts from Regional WHO Office for the African Region.

The evaluation mission assessed strength and gaps in the surveillance system in Mauritania in terms of organisation, human resources, infrastructure, equipment and tools. The key to create a sustainable eSurveillance system is to mutualise resources. Therefore, the mission made a recommendation to the Ministry of Health to centralise management of the surveillance tools and technical infrastructure under one system and to unify the different process under an integrated eSurveillance platform. This integrated approach will enable the country to significantly enhance timely data collection and its analytical capacity in a cost effective manner.

The mission resulted into the development of a road map which details critical actions that should be taken by Mauritania in enhancing e-IDSR.

List of abbreviations

AEFI	Adverse Events Following Immunization
AFP	Acute Flaccid Paralysis
AHF	Acute Hemorrhagic Fever
CBS	Community Based Surveillance
CFR	Case Fatality Ratio
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations (2005)
ILI	Influenza Like Illnesses
EMS	Event Management System
JEE	Joint External Evaluation
MOHS	Ministry of Health and sanitation
PHEs	Public Health Events
rSIS	Real-time Strategic Information System
SARI	Severe Acute Respiratory Infection
SRAS	Severe Acute Respiratory Syndrome
TB	Tuberculosis
ToTs	Training of trainers
WHO	World Health Organization