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DIABETES PREVENTION AND CONTROL: A STRATEGY FOR THE WHO AFRICAN REGION

Report of the Regional Director

Executive Summary

1. Diabetes is a chronic disease characterized by chronic hyperglycaemia which requires lifelong treatment. Its prevalence in Africa varies between 1% and 20%. Type 2 diabetes, which is the most common form, can be life threatening due to its complications, particularly, cardiovascular diseases. It constitutes a serious public health problem.

2. Diabetes, like other noncommunicable diseases in the Region, receives lower attention than it deserves, despite its social, human and economic costs. Few countries have national programmes and basic facilities that are appropriate for the control of diabetes.

3. The present strategy urges Member States to evaluate the magnitude of diabetes and identify and improve areas of intervention in terms of primary, secondary and tertiary prevention activities.

4. Countries are encouraged to create the conditions required for prevention, early detection diagnosis, treatment, guarantee of equitable access to care, and availability of drugs at health facilities.

5. The Regional Committee is invited to examine and adopt this strategy.

CONTENTS

DRAFT RESOLUTION

INTRODUCTION

1. Diabetes mellitus is a chronic disease whose global spread has given it the characteristics of a pandemic. The most frequent form is Type 2 diabetes which represents more than 85% of the cases. Other forms are Type 1 (10%), specific diabetes and gestational diabetes (5%).[1]

2. The disease presents with metabolic anomalies characterized by chronic hyperglycaemia, resulting from defective secretion or action of insulin (insulin resistance) or both. It is confirmed with a random venous plasma glucose higher than 2g/l (11.1 mmol), or fasting glycaemia that is higher than 1.26g/l (7.0 mmol/l) at two tests, or a fasting glycaemia higher than 2g/l (11.1 mmol) 2 hours after a glucose intake.[2]

3. Diabetes is serious due to its complications, namely: cardiovascular ailments, cerebral vascular accidents, renal insufficiency, blindness, sexual impotence and gangrene of the feet leading to amputation.

4. During the Forty-second World Health Assembly (1989), WHO adopted Resolution WHA42.36 on the prevention and control of diabetes, inviting Member States to evaluate the prevalence of diabetes at national level, take measures that focus on the population and are adapted to the local situation, and create a model for an integrated approach in the fight against diabetes at community level.[3]

5. In the African Region, efforts made to create an environment that enhances the fight against diabetes include adoption of resolutions AFR/RC50/R4 on noncommunicable diseases: strategy for the African Region, in 2000, and AFR/RC55/R4: cardiovascular diseases in the African Region, in 2005. The World Health Organization and the International Diabetes Federation (IDF) jointly carried out other actions to contribute to it.

6. This document examines the situation of diabetes (Type 2) in the African Region and proposes a strategy for its prevention and control.

SITUATION ANALYSIS AND JUSTIFICATION

7. Diabetes mellitus is no longer rare in Africa (Figure 1). Meta-analytic estimates and recent investigations based on the STEPwise approach[4,5] for monitoring the risk factors of noncommunicable diseases indicate prevalence of between 1% and 20%. In some countries like Mauritius, it reaches 20%.[6] The global prevalence was estimated at 2.8% in 2000, with projections of

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1 WHO, *WHO/IDF report of consultation: Definition, diagnosis and classification of diabetes mellitus and its complications,* Geneva, World Health Organization, 1999.

2 WHO, *WHO/IDF report of consultation: Definition and diagnosis of diabetes mellitus and intermediate hyperglycaemia,* Geneva, World Health Organization, 2006.

3 WHO, Forty-second World Health Assembly; item 18.2 of the Agenda.

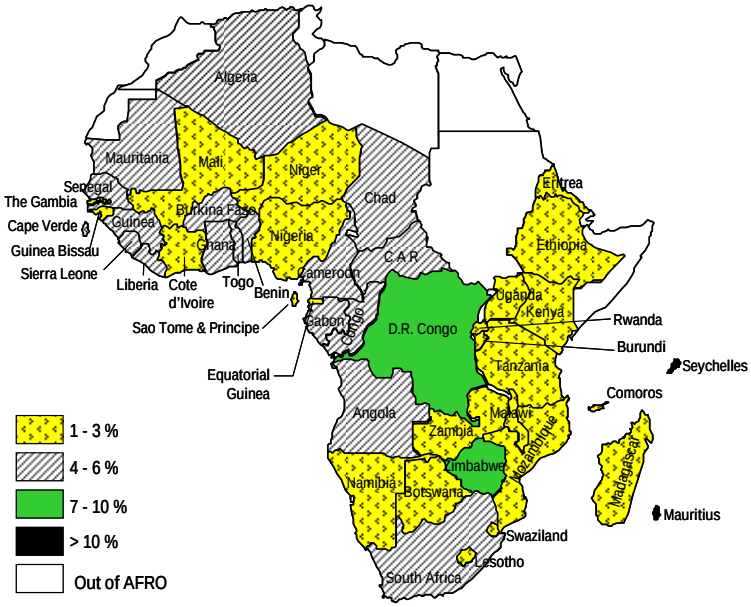
4 WHO, Survey of the STEPwise approach for the surveillance of the risk factors of NCDs, Brazzaville, World Health Organization, Regional Office for Africa, 2006.

5 Sobngwi E et al, Diabetes in Africans: Part 1: epidemiology and clinical specificities, *Diabetes and Metabolism* 27(6): 628–634, 2001.

6 http://www.who.int/ncd_surveillance/infobase/web/InfoBasePolicyMaker/Reports/reportListCountries.aspx (accessed 15 March 2007).

4.8% in 2030. The total number of persons affected would rise from 171 million in 2000 to 366 million in 2030 if no action is taken.[7]

Figure 1: Diabetes prevalence rate in WHO African Region



Sources: 1. Infobase.who.int;
2. Sobngwi E et al, Diabetes in Africans: Part 1: epidemiology and clinical specificities, *Diabetes and Metabolism* 27(6): 628–634, 2001.

8. The factors that affect the onset of diabetes are well-known. They comprise non-modifiable factors like old age (over 45 years of age), heredity (direct collateral) and the causes of diabetes in pregnancy. The modifiable factors are obesity, physical inactivity and excessive alcohol consumption.

9. Africa, which faces the dual burden of communicable and noncommunicable diseases, is witnessing changes in traditional lifestyles that have disrupted feeding pattern. This in turn leads to physical inactivity that promotes obesity. The emerging Type 2 diabetes observed in the child and adolescent is linked to obesity.

10. The disease burden is very high. Unknown diabetes in Africa is in the order of 60% to 80% in cases diagnosed in Cameroon, Ghana and Tanzania.[8] The rate of limb amputations varies from 1.4% to 6.7% of diabetic foot cases. Annual mortality linked to diabetes worldwide is estimated at more than one million.[9] In some countries of the Region, the mortality rate is higher than 40 per 10 000 inhabitants.[10]

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7 Gojka R et al, Global prevalence of diabetes, *Diabetes care* 27(5): 1047–1053, 2004.

8 IDF, *Diabetes Atlas*, 2nd Edition, Brussels, International Diabetes Federation, 2003.

9 WHO, *Preventing chronic diseases: A vital investment*, Geneva, World Health Organization, 2005.

10 WHO, *The burdern of mortality attributable to diabetes*, Geneva, World Health Organization, 2004.

11. The dearth of specialists and health workers trained in diabetes makes its treatment difficult. General practitioners or traditional healers sometimes assure its management.[11] Very few countries have care facilities that are appropriate for diabetes management, and testing for glycaemia is not always carried out in health facilities.

12. In the Region, people affected by chronic diseases, including diabetes, seek care from facilities at the peripheral levels. Though these facilities are oriented toward acute problems, they are generally not adapted to provide care to those affected by chronic diseases.

13. Treatment compliance for diabetes, in the long term, remains problematic because of prohibitive cost and unavailability, or lack of, state subsidies. The annual direct cost of treatment by insulin is estimated at US$ 229, with more than 70% of it used for the insulin.[12] The monthly cost using glibenclamide is equivalent to the salary for 6.1 working days in Nigeria and 16.6 working days in Uganda of an employee on minimum wages.[13] In Cameroon, the direct cost per patient in 2001 was US$ 489 which includes 56.5% for hospitalization, 33.5% for drugs, 5.5% for tests and 4.5% for consultation.

Justification

14. The present regional strategy on diabetes is based on the resolution[14] on noncommunicable diseases in the Region. It responds, in a specific way, to the need to increase the impact, alas, still limited, of programmes based on an integrated approach in the fight against the common risk factors of noncommunicable diseases.

15. In the Region, vulnerability to diabetes among the 45–65 age group exposes them to complications and premature deaths. It causes a decline in productivity, with an economic cost, which added to the cost of treating other types of diabetes (Type 1 and diabetes in pregnancy), constitutes an additional burden for the already weakened health systems.

16. Type 2 diabetes can be prevented by simple measures in 80% of cases. The efforts to fight diabetes in Africa fall far below the expected results. Also, it is advisable to revisit the in-patient care model for diabetes by integrating it into the primary health care.

REGIONAL STRATEGY

Aims and objectives

17. The goal of this regional strategy is to contribute to the reduction of the burden of diabetes-related morbidity and mortality and its associated risk factors.

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[11] Motala AA, Diabetes trends in Africa, *Diabetes/Metabolism Research and Reviews* 18(S3): S14–S20, 2002.

[12] Chale SS et al, Must diabetes be a fatal disease in Africa? Study of costs of treatment, *British Medical Journal* 304: 1215–1218, 1992.

[13] WHO, *Study on cost of drugs and interventions proposed for improving access to drugs in six sub-Saharan African countries*, Geneva, World Health Organization, 2006.

[14] Resolution AFR/RC50/R4, Noncommunicable diseases: A strategy for the African Region. In*: Fiftieth session of the WHO Regional Committee for Africa, Ouagadougou, Burkina Faso, 28 August–2 September 2000, Final Report,* pp. 13–14, Harare, World Health Organization, Regional Office for Africa, 2000.

18. The strategy aims:

(a) to increase sensitization and advocacy in the fight against diabetes, using reliable epidemiological data for policy-makers and the general public;
(b) to promote primary, secondary and tertiary prevention interventions in favour of diabetes;
(c) to strengthen the quality of health care by integrating diabetes into primary health care in order to provide just and equitable access;
(d) to improve the capacities of health personnel to better deal with diabetes and associated diseases;
(e) to support research in community interventions, including traditional medicine.

Guiding principles

19. For prevention and control of diabetes, the following principles must guide the implementation of the strategy:

(a) comprehensive management of diabetes through cost-effective prevention, curative, rehabilitation and participatory actions;
(b) integration of diabetes into a national programme for the prevention and control of noncommunicable diseases;
(c) equity and accessibility to quality care for people affected by diabetes;
(d) multisectoral approach and partnerships, with the health sector playing a leading role, with civil society being involved and with enhanced cooperation from associations involved in the fight against diabetes;
(e) community participation, gender sensitivity and consideration of local beliefs as necessary to better generate awareness on diabetes.

Priority interventions

20. In order to better prevent and control diabetes, the following priority interventions are envisaged:

(a) creation of conditions that enhance advocacy and action for diabetes;
(b) prevention of diabetes and its associated risk factors;
(c) targeted screening of diabetes and its complications;
(d) early diagnosis and adapted treatment of diabetes and its complications;
(e) strengthening of the capacities of health systems;
(f) reorganization of health care to focus on the patient, family and community;
(g) support for operational research.

Creating conditions that enhance advocacy and action

21. Advocacy would centre on the importance of diabetes, placing it alongside the main NCDs, namely cardiovascular diseases and cancer. It must be based on real partnerships for increased

sensitization. It must focus on the community level, using prevention and information messages that target the populations at risk of diabetes.

22. Collection of reliable data is required to guide and plan actions in favour of the control of diabetes and its associated risk factors. For that, STEPwise investigations should be planned and carried out throughout Africa, particularly Step 3 required for glycaemia testing.

23. Diabetes should be on the list of medical priorities, be legislatively recognized as a medico-social disease and be given adequate resources. National initiatives and plans for the fight against diabetes can serve as entry points for noncommunicable disease programmes.

Preventing diabetes and its risk factors

24. Most risk factors for diabetes that are common to NCDs are modifiable and preventable. The implementation of the global strategy on food, physical exercise and health[15] is the primary key for diabetes prevention. This strategy, together with the fight against tobacco use and alcohol abuse, will be strengthened. These interventions should begin from childhood and reach educational establishments and adolescents.

Detecting diabetes and its complications

25. The targeted screening of people at risk of diabetes will have to be encouraged in the health facilities. Testing for fasting glycaemia makes it possible to diagnose unknown diabetes, which, though evolving silently, is very often revealed by complications.

26. The status of impaired fasting glycaemia must be focussed on, particularly, among those at risk of diabetes. Early diagnosis is interesting in identifying those at increased risk of developing the condition, thus leading to prevention and management.

Early diagnosis, fast and better treatment

27. Diabetes should be promptly managed. Indeed, there is a direct correlation between the level of glycaemia progression, onset of diabetes and its complications, and outcome of treatment. Routine glycaemia testing would prevent or delay complications.

28. Testing for glycaemia should be carried out in all health facilities, using gluco meters whose reliability has been proven. Once the diagnosis has been made, counselling and guidance should be given based on the protocol drawn up in the countries.

29. Secondary prevention activities should be based on treating cases that are declared in order to prevent or delay complications. The management of diabetes should be comprehensive, integrating effective treatment of diabetes, arterial hypertension, lipidic disorders, and activities for alcohol consumption cessation. Type 1 diabetes and gestational diabetes would be given specialized treatment.

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[15] Resolution WHA57.17, Global strategy on diet, physical activity and health. In: *Fifty-seventh World Health Assembly, 14–22 May 2004, Volume 1: Resolutions and decisions*, pp. 39–41, Geneva, World Health Organization, 2004.

30. Access to oral antidiabetic medications, insulin and basic supplies must be assured. A good drug policy should ensure accessibility and reduced prices of these drugs. Health centres and hospitals must be provided with affordable essential and generic drugs. Concerning oral antidiabetic medications, metformine and glibenclamide are recommended by consensus.[16]

31. Tertiary prevention remains crucial because of the many complications related to late diagnosis. Particular stress will be put on the prevention of blindness, renal insufficiency and especially on lesions of the foot, the cause of amputations. The care of diabetic feet will have priority in health centres.

Strengthening the capacities of health systems

32. It is essential to integrate the management of diabetes into primary health care facilities through the delivery of a minimum package of activities. This entails identifying the people (groups) at high-risk and referring them to the health facilities for screening, follow-up and monitoring of care. Health personnel will be trained in diabetes management, prevention and control as part of primary health care. This will ensure that the care usually administered only by the doctor can be undertaken by a multidisciplinary team trained and integrated within the health centres.

33. First referral levels and high quality of care will be of help to primary health care facilities in screening, diagnosis and initial treatment of patients. They should also manage complications which could be treated in integrated specialized clinics.

Patient-focused care

34. Routine care for diabetes requires a lifestyle change. The role and responsibility for treatment make the patient an active actor. Health workers must guide the patient towards being independent. In proactive management of diabetes, the role of the family and the community enhances treatment.

Supporting research

35. To better target priority research areas and better prevent and control diabetes, countries will be encouraged to support and finance research activities, and also integrate traditional medicine. It will be necessary to encourage the training of researchers and equip universities, research institutions, schools of medicine and training centres.

Roles and responsibilities

Roles of the countries

36. The countries should:

(a) prepare and implement diabetes control policies and plans, integrated into the national programme for the prevention and control of noncommunicable diseases; set up, at national level, integrated surveillance systems;

[16] IDF, Guide on the management of type 2 diabetes in sub-Saharan Africa, Dar es Salaam, International Diabetes Federation, 2006.

(b) strengthen their health systems and capacities for diabetes control by promoting: (i) the participation of individuals and communities in the care and support of persons affected by diabetes; (ii) collaboration with partners; (iii) fundamental and operational research on diabetes;

(c) mobilize internal and external resources and allocate them regularly, assure coordination of the interventions of the different actors, assure the monitoring of the programmes for the control of diabetes and noncommunicable diseases;

(d) conduct and publish their STEPwise surveys;

(e) strengthen partnerships with other stakeholders.

Role of WHO and partners

37. WHO and partners should:

(a) provide technical assistance to countries for the analysis and development of policies; data collection and analysis, as well as their dissemination;

(b) develop and make available standards and guidelines for the diagnosis and treatment of diabetes, its complications and its associated risk factors;

(c) encourage the principal partners, namely the International Diabetes Federation and others, to allocate additional resources to interventions in favour of diabetes;

(d) encourage and support research on diabetes in order to better prevent and improve the quality of life of the affected persons.

Implications in terms of resources

38. Most countries already spend a considerable amount of resources, mainly in support of clinical management of diabetes. The interventions proposed in this document imply reorganizing and channelling resources to facilitate implementation. More specific is the need to ensure the availability of suitably trained human resources at different levels of the health care system, medicines and supplies needed for screening and treating those affected, and support for a mechanism of community follow-up.

39. In many countries, additional resources must be mobilized, firstly from national resources and then from partners. In this regard, countries using the information available on the costs of medicines and other necessary commodities should estimate their total needs to facilitate their resource mobilization programme.

MONITORING AND EVALUATION

40. The surveillance of diabetes and its risk factors remains one of the major components of monitoring and evaluation. The STEPwise investigation is one of the indispensable tools, as is the diabetes register.

CONCLUSION

41. Diabetes represents a real and growing health problem in the Region. Sustained commitment from the authorities would increase the ability to cope with the dual challenge of prevention and treatment on the one hand and on the other, the lethal burden of complications, particularly cardiovascular diseases.

42. Multidisciplinary and multisectoral approaches are indispensable to the prevention and control of diabetes. In Africa more than elsewhere, they constitute the cornerstone of interventions which should focus on the patient and the community, within the framework of primary health care.

43. The Regional Committee is invited to examine and adopt this strategy.