REPUBLIC OF KENYA

MINISTRY OF PUBLIC HEALTH AND SANITATION

KENYA NATIONAL DIABETES STRATEGY 2010-2015

FIRST EDITION

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July 2010

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Kenya National Diabetes Strategy 2010-2015

Funded by: Ministry of Public Health and Sanitation, World Diabetes Foundation and the International Diabetes Federation.

Enquiries regarding the Kenya National Diabetes Strategy should be addressed to:

National Diabetes Control Programme,
Division of Non-communicable Diseases,
Ministry of Public Health and Sanitation,
P.O. Box 30016 – 00100
Nairobi, Kenya

Telephone: +254 202717077/+254202722599
Email: noncom@health.go.ke
Website: www.pubhealth.go.ke

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WORLD DIABETES FOUNDATION

DMI Centre

International Diabetes Federation
African Region

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FOREWORD

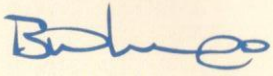
The scourge of diabetes is ravaging our country affecting the lives of our people, mainly the economically active groups resulting in a decrease in the output put of the country's labour force and consequently reducing the Gross Domestic Product (GDP). This has been compounded by a rapid increase in the prevalence of risk factors for diabetes and other chronic non-communicable diseases. If the disease is not tackled, it will hinder the attainment of the Millennium Development Goals (MDGs) and realization of the Vision 2030.

In order to achieve effective diabetes control a coordinated multi-sectoral approach must be adopted throughout the country. This National Diabetes Strategy (NDS) provides a framework of what needs to be done to reduce the burden of diabetes and its risk factors. This will eventually reduce the morbidity and mortality attributable to diabetes.

To pursue the vision of ensuring an efficient diabetes care system that is socially and culturally acceptable to all Kenyans, the NDS highlights the need for availability of skilled human resource, sustained adequate funding and partnership building. It also emphasizes the need for mobilizing communities and fighting poverty to accelerate social and economic growth.

The management of diabetes can sometimes seem straight forward but the burden of serious complications and their sequelae may represent a serious problem for people with diabetes their families, health care services and government.

It is our belief that collectively we can make a difference: Let us all join hands in the fight against diabetes and strive to achieve a diabetes free Kenya.



Hon. Beth W. Mugo, EGH, MP
Minister for Public Health and Sanitation

INTRODUCTION

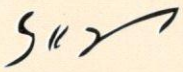
Diabetes and other non-communicable disease are now a threat to national development as they often result in long standing complications that are usually very costly to treat. Similarly these diseases are long standing and if not managed well can be fatal. They progressively drain the strength and resources of an individual rendering them unproductive and poor. This burden is in most cases passed on to families and the community with untold retardation of economic progress and eventually exacerbating poverty.

In response to this crisis, the Ministries of Health in collaboration with Non-Governmental Organizations, Regional and International Diabetes Support Bodies spearheaded the Kenya National Diabetes Strategy 2010-2015 in order to accelerate mainstreaming of diabetes policies and programmes with a view to make them an integral part of the national public health response to disease prevention and care at all levels of health care. This strategy will articulate strategic priorities in diabetes to ensure that services are directed to those areas that are likely to yield high impact for people with diabetes and those at risk of the disease.

This strategic framework will guide the funding, planning, organization, provision and monitoring and evaluation of services for people with or at risk of diabetes. It will consolidate and improve the quality and coverage of diabetes care services in Kenya.The framework also identifies the roles of various key players in the development and implementation of diabetes prevention and control services. It defines the processes and inputs necessary for the timely realization of the national targets.

A technical Working Group was established under the auspices of the Division of Non-communicable Diseases (DNCD) to develop this strategy based on evidence based prevention and control strategies for diabetes mellitus. This Strategy is a synthesis of information drawn from an extensive review of local and international knowledge and experience.

The successful implementation and strict adoption of this strategy will require the partnership of the various stakeholders in diabetes control. The Ministry is committed to provide leadership and guidance in the process of implementation of this strategy.



Dr. S. K. Sharif, MBS, MB.ChB, M.Med, DLSTMH, MSc.
Director of Public Health & Sanitation

LIST OF CONTRIBUTORS

Dr. William K. Maina	Ministry of Public Health and Sanitation
Dr. Eva Njenga	Diabetes Endocrinology Centre
Dr. Acharya Kirtida	University of Nairobi
Dr. Gaman Mohamed	Comprehensive Diabetes Centre
Dr. Izaq Odongo	Ministry of Medical Services
Scholastica Mwende	Ministry of Public Health and Sanitation
Zachary M. Ndegwa	Ministry of Public Health and Sanitation
Eva Muchemi	Kenya Diabetes Management and Information Centre
Dr. Lois N. Wagana	Central Provincial General Hospital, Nyeri
Dr. Thomas Ngwiri	Eastern Provincial General Hospital, Embu
Dr. Paul Laigong	Gertrude Children's Hospital, Nairobi
Mrs. Rosemary Ngaruro	Ministry of Medical Services
Dr. Rachael Nyamai	Ministry of Medical Services
Dr. Ayman M. Qureshi	Ministry of Medical Services
Dr. Peter Munyua	Ministry of Public Health and Sanitation
Ms. Lilian Karugu	Kenya Diabetes Management and Information Centre
Mr. Edward Ndungu	Ministry of Public Health and Sanitation
Mr. Ibrahim Wako	Ministry of Medical Services
Dr. Zeinabu Gura	Ministry of Public Health and Sanitation (FELTP)
Mrs. Rose Kuria	Ministry of Medical Services
Mrs. Monica G. Mukiira	Ministry of Medical Services
Mr. Francis K. Muma	Ministry of Medical Services
Mrs. Eunice Ndungu	Ministry of Medical Services
Ms. Mary Karimi	Ministry of Public Health and Sanitation
Dr. Anil Kapur	World Diabetes Foundation

ABBREVIATIONS

AIDS	-	Acquired Immunodeficiency Syndrome
CDF	–	Constituency Development Funds
CVA	–	Cerebrovascular Accidents
CVD	–	Cardiovascular Diseases
DCPP	–	Disease Control Priorities Project
DHMT	–	District Health Management Teams
DMI	–	Diabetes Management and Information Centre
DNCD	–	Division of Non-communicable Diseases
GDM	–	Gestational Diabetes Mellitus
GDP	–	Gross Domestic Product
HCP	–	Health care Provider
HIV	–	Human Immunodeficiency Syndrome
HMIS	–	Health Management and Information System
ICC	–	Inter-agency Coordinating Committee
IDF	–	International Diabetes Federation
IEC	–	Information Communication and Education
JPWF	–	Joint Programme for Work and Funding
KDA	–	Kenya Diabetes Association
MDG	–	Millennium Development Goals
MOMS	–	Ministry of Medical Services
MOPHS	–	Ministry of Public Health and Sanitation
NCD	–	Non-communicable Diseases
NDS	–	National Diabetes Strategy
NDSC	-	National Diabetes Steering Committee
NGO	–	Non-governmental Organization
PHC	–	Primary Health Care
WDF	–	World Diabetes Foundation
WHO	–	World Health Organization

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The Kenya National Diabetes Strategy was prepared with the active participation of several diabetes experts from several organizations in Kenya. The participation of the following individuals and organization is gratefully appreciated.

The Strategy was based on the Diabetes Strategy for Sub Sahara developed by the International Diabetes Federation (IDF) Africa whom we owe thanks for allowing us to use the materials.

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The development of this Strategy was carried out under the auspices of the Division of Non-communicable Diseases. In this regard, the support extended by Dr. William K. Maina, Head of the Division and the staff of the division, particularly Zachary Ndegwa and Mrs. Scholastica Mwende is gratefully acknowledged.

EXECUTIVE SUMMARY

Kenya recognizes that diseases, disability and ill health are major impediments to national development and poverty reduction. Consequently, the government is committed to the promotion quality of health for all its citizenry. Kenya, like other developing countries, is experiencing this emerging diabetes epidemic. It is estimated that the prevalence of diabetes in the country is about 3.3%. This figure is projected to rise to 4.5% by 2025 if this trend is not checked.

The complications of undetected and untreated diabetes are serious and cause huge human suffering and disability, and have huge socio – economic costs resulting from premature morbidity and mortality. Diabetes is one of the leading causes of blindness, renal failure and lower limb amputation. It also triggers cardiovascular disease which is the leading cause of deaths in diabetes patients.

The key risk factors for diabetes—obesity, physical inactivity, and unhealthy diets—require interventions to change unhealthy lifestyles. These changes are most likely to occur with implementation of a coordinated range of interventions to encourage individuals to maintain a healthy weight, participate in daily physical activity, and consume a healthy diet. Education is central to implementing such changes. It is more effective when provided through multiple methods and sites, such as schools, workplaces, mass media, and health centers.
Educational messages are also more effective if they are reinforced by action. Schools, for example, should provide not only curricula on good nutrition but also healthy meals; worksites should not only inform workers about the role of physical activity but facilitate the use of non-motorized transportation such as walking and cycling.

The National Diabetes Strategy (NDS) proposes a framework and implementation options based on the overall goal of preventing or delaying the development of diabetes in the Kenyan population, improvement of the quality of life through reduction of complications and premature mortality in people with diabetes.

This strategy has eight key strategic interventions;

1. **Advocacy** - to make diabetes everybody's business and combine the notion of individual, community, social, corporate and government responsibility.
2. **Empowerment** - to encourage full engagement of all levels and facets of society in taking responsibility for health as a fundamental common asset. Empowering individuals, families and communities helps to prevent and manage diabetes optimally.
3. **Resource Mobilization and Prioritization** – this entails having clear priorities and evidence of effectiveness to provide a sound platform for arguing for resources to be directed to diabetes. Clear and rational priorities will help to reduce waste and duplication and can highlight ways in which existing resources can be allocated more effectively.
4. **Capacity building**- this is about making what you have, work better by improving the human resource capacity, making health systems more responsive to diabetes through improved infrastructure, adequate medical supplies, improved diagnostic services and provision of necessary protocols and standards.
5. **Partnership And Coordination** – This is aimed at promoting efficient implementation of diabetes control interventions through improved coordination and collaboration of partners in the country. The implementation of National Diabetes Strategy will be coordinated by National Diabetes Steering Committee with the guidance of the Diabetes Inter Agency Coordinating Committee (ICC)
6. **Diabetes policies, legislation and regulations** - policies and legislation are pertinent in the implementation of interventions that support diabetes prevention and control. These are important in control of exposure of the population to risk factors for diabetes and other chronic non-communicable diseases.
7. **Research** - Combating the rapidly growing burden of diabetes requires strategic effort across the entire spectrum of research - epidemiology, behavioral, health system, biomedical and clinical. There is need to support research on diabetes and timely disseminate the findings to the decision makers.

8. **Monitoring and evaluation** - Continuous measurement of the progress and impact of the implementation of NDS are essential to achieving planned interventions. The National Diabetes Strategy recognizes that establishing effective systems for Monitoring and evaluation (M&E) are a vital management tool.

This National Strategy for Diabetes (NDS) recognizes the humanitarian, social and economic burden of diabetes and consequently provides a platform for the development of affordable cost-effective public-health strategies for the prevention of diabetes. It also places more emphasis on the need for more research towards better treatment, prevention and control methods for diabetes. It calls for the country to invest in diabetes as the effects of that investment also yields substantial returns in reducing heart diseases, stroke, kidney diseases, hypertension, and cancers. All stakeholders are called upon to embrace this NDS and join hands in confronting this new and explosive epidemic of diabetes mellitus in Kenya.

KENYA NATIONAL DIABETES STRATEGY

Introduction

Diabetes Mellitus is a chronic metabolic disorder that occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it produces. This results in elevated blood sugar (hyperglycaemia) which over time leads to multiple organ damage. The commonest complications of diabetes include – eye complications, heart and blood vessels, kidneys, nervous system and foot complications leading to amputations. However, acute complications do occur such as Diabetes ketoacidosis, and diabetes non-ketotic coma (hyperosmolar).

Predisposing Factors

- Advancing age.
- Family history
- Excessive body weight
- Excessive alcohol consumption
- Physical inactivity.
- Stress.
- Unhealthy diet.
- Gestational Diabetes Mellitus
- Chronic use of steroids

Diabetes Symptoms

Diabetes Mellitus often goes undiagnosed because many of its symptoms though serious are often missed or are treated as common ailments. Recent studies indicate that the early detection of diabetes symptoms and treatment can decrease the chance of developing the complications of diabetes.

Common symptoms of diabetes include:

- Frequent urination
- Excessive thirst
- Extreme hunger
- Unexplained weight loss
- Increased fatigue
- Irritability
- Blurry vision
- Impotence
- Numbness or tingling sensation of the feet

Types of diabetes

1. Type 1 – Previously referred to Insulin Dependent Diabetes or Autoimmune Diabetes or Juvenile diabetes or early onset diabetes mellitus. Type 1 diabetes is as a result of failure of the pancreas to produce insulin. This type comprises about 10-15% of total diabetes burden.
2. Type 2 – Previously referred to as Non-insulin Dependent or Maturity onset diabetes- This type results from failure of the pancreas to produce adequate insulin or failure of body cell to utilize insulin or both. It accounts for about 85- 90% of total diabetes burden.
3. Gestation diabetes Mellitus (GDM) – Pregnant women who have never had diabetes before but who have high blood sugar (glucose) levels during pregnancy are said to have gestational diabetes. Gestational diabetes affects about 4% of all pregnant women. Gestational diabetes starts when the body is not able to make and use all the insulin it needs for pregnancy. Without enough insulin, glucose cannot leave the blood and be changed to energy.
4. Other specific types:
    - Diabetes as part of other Endocrine syndromes
    - Drug Induced diabetes
    - Pancreatic disease
    - Monogenic diabetes; previously referred to as Maturity Onset Diabetes of the Young (MODY)

Epidemiology

Diabetes is one of the commonest non-communicable diseases of the 21st century. In 2007 the global burden of diabetes was estimated to be 246 million people. The international diabetes federation (IDF) estimates that this figure is likely to rise to 380 million by the year 2025 (IDF Atlas, 2007). In its 2009 Diabetes Atlas publication, the International Diabetes Federation, the global burden of diabetes in 2010 is estimated at 285 million and projected to increase to 438 million by the year 2030, if no interventions are put in place (IDF Atlas, 2009).This rise in diabetes is associated with demographic and social changes such as globalization, urbanization, aging population and adoption of unhealthy lifestyles such as consumption of unhealthy diets and physical inactivity.

The World Health Report 2002 estimated that globally, 7.1 million deaths could

be attributed to high blood pressure, 4.4 million deaths to high cholesterol, and 2.6 million deaths to excessive body weight. Excessive body weight is a growing problem in almost every country, even the poorest. It is increasing so rapidly that in middle-income countries the disease burden associated with having a body mass index greater than 25 is now equal to or greater than the disease burden resulting from under-nutrition (WHO, 2002). Excessive body weight is known to be an independent risk factor for development of type 2 diabetes mellitus.

Despite the higher prevalence of diabetes in high-income countries, the majority of the disease burden from diabetes, more than 70 percent, is in the developing regions because of their larger populations.

In Kenya, the prevalence of diabetes is estimated to be 3.3%. This figure is based on regional projections and is likely to be an underestimation as over 60% of people diagnosed to have diabetes in Kenya usually present to the health care facility with seemingly unrelated complaints. Therefore two thirds of people with diabetes do not know they have the disease (IDF 2007).

Several modifiable risk factors come to fore as driving forces of the rising prevalence of type 2 diabetes in Kenya. These factors associated with urbanization include:

- Consumption of refined carbohydrate
- Consumption of high-fat diets,
- Lack of physical activity due to sedentary lifestyles, lack of exercise or Circumstantial reduction of physical exercises occasioned by the availability of motorized transport, watching television and computer games for long hours

These common urban events and lifestyles are now reaching rural Kenya.

Situation analysis

There is a high proportion of undiagnosed cases of diabetes that end up with irreversible complications imposing a huge economic burden to the individual, family, community and in the health care system. The country has severe shortage/limited resources to take care of the extra burden of diabetes. In areas where resources such health workers exist, they are not adequately trained and equipped to effectively manage diabetes and its complications. In addition, many of the existing health facilities in the country lack the capacity for early detection of diabetes as routine screening for high blood sugar is not often done.

To confound all these there is very low public awareness of most chronic diseases particularly diabetes. This is basically due to lack of Primary Health Care (PHC) systems that are geared towards tackling chronic diseases.

There is lack of population based data on the burden and trends of diabetes and no comprehensive research exists that can inform policy on the best practices for the control of diabetes. Little attention is therefore given to the prevention and control of non-communicable diseases. Much of the emphasis, during medical training and in human and financial resources allocation is focused on infectious diseases.

Non-communicable diseases such as diabetes, cardiovascular diseases and cancers, and their related risk factors such as high blood pressure, high cholesterol, and excessive bodyweight are increasing in Kenya. Once considered diseases of industrialized countries or of the affluent in developing countries, they are now recognized as a common problem even among the poor in developing countries.

The healthcare environment in Kenya is affected by several significant factors, including a double burden of both communicable and non-communicable diseases. The system needs redesigning in order to align itself with the emerging challenge of a double burden of disease. Prevention, care and treatment, and research are all activities that are facilitated by the presence of a strong and functioning health care system.

Prevention and Control

The key risk factors for diabetes—obesity, physical inactivity, and unhealthy diets—require interventions to change unhealthy lifestyles. These changes are most likely to occur with implementation of a coordinated range of interventions to encourage individuals to maintain a healthy weight, participate in daily physical activity, and consume a healthy diet. Education is central to implementing such changes and it is more effective when provided through multiple methods and sites, such as community groups, schools, workplaces, mass media, religious organizations and health centers. Educational messages are also more effective if they are reinforced by action. Schools, for example, should provide not only curricula on good nutrition but also serve healthy school meals; worksites should not only inform workers about the role of physical activity in health but also encourage and facilitate its implementation.

Urban design and transportation policy are other key elements of lifestyle interventions. People can be encouraged to increase their physical activity by using public and non-motorized transport, especially walking and bicycling. Although not normally considered an instrument for improving health, national transportation policies can strongly influence automobile use and dependency.

Food policy is another important area for encouraging lifestyle change. Policy requirements to include how food is processed by fortifying foods with micronutrients, limiting salt contents, limiting advertising for unhealthy foods and correct labeling of food products. One of the most effective ways to improve diets is to regulate or provide incentives for food manufacturers to replace unhealthy ingredients or products with healthier ones. Changes in types of fats, for example, can be almost imperceptible to consumers and relatively inexpensive. Agricultural policies should be geared towards the production of traditional/indigenous food varieties while price policies need to make such food more affordable to the population.

Many European manufacturers have greatly reduced foods' trans-fatty acid content by changing production methods. In this way, the Netherlands reduced the trans-fat content of the food supply from about 6 percent of the energy content to approximately 1 percent in a single decade. In Mauritius, government policies replaced commonly used palm oils for cooking with soybean oil, which reduced the intake of saturated fatty acids and lowered serum cholesterol levels. Other easily targeted changes in food processing include reducing salt and fortifying foods with micronutrients such as vitamin A, vitamin B12, iodine, iron, and folic acid (DCPP, 2006).

The above measures are some of the important primary prevention interventions of diabetes. When lifestyle changes are insufficient and the disease sets in there are variety of medical interventions, many of which are expensive. The essential treatment for type 1 diabetes is insulin injections to maintain normal blood glucose levels. For type 2 diabetes, treatment requires good dietary practice, physical activity and oral glucose-lowering agents and/or insulin. Maintaining normal blood glucose in diabetic patients is essential to delay and prevent complications. In comprehensive care of diabetes blood pressure, lipids and weight abnormalities should also be managed. Other important and effective interventions for prevention and control of diabetes and its complications include health education, early screening and detection followed by prophylaxis and treatment for diabetes complications.

Complications of diabetes are difficult and expensive to treat thus maintaining adequate glyceamic control is the more cost effective option

Purpose

The purpose of the NDS is to accelerate mainstreaming of diabetes policies and programmes with a view to make them an integral part of the national public health response to disease prevention and care at all levels of health care. This strategy will articulate strategic priorities in diabetes to ensure that services are directed to those areas that are likely to yield high impact for people with diabetes and those at risk of the disease.

This strategic framework will guide the funding, planning, organization, provision and monitoring and evaluation of services for people with or at risk of diabetes. It will consolidate and improve the quality and coverage of diabetes care services in Kenya.

The framework also identifies the roles of various key players in the development and implementation of diabetes prevention and control services. It defines the processes and inputs necessary for the timely realization of the national targets.

Scope

The NDS focuses on the prevention and control of diabetes in Kenya. The vision, recommendations and key strategies in the NDS span the continuum of care from pre-diabetes through diagnosis, routine monitoring and care to the onset of complications and palliation.

The NDS will target policy makers, government departments, health institutions, non-governmental organizations, civil society groups, communities, development partners and funding agencies with the aim of reducing the burden of diabetes.

Justification

Addressing diabetes and other non-communicable diseases is not something that Kenya can leave to the future. These conditions already account for a substantial share of the disease burden in the country and are likely to increase further as the country makes progress in controlling infectious diseases and reducing the high rates of mortality and morbidity associated with childbearing and infancy. A similar effort should be put in place to address non-communicable diseases. Diabetes and other related non-communicable diseases are not inevitable

consequences of modern life. Prevention can be achieved with moderate changes in lifestyles that are fully compatible with life in the 21st century. Nevertheless, the requisite changes in smoking and alcohol habits, physical activity, and diet may not be easy and will require support and encouragement through investments in education, changes in food policies, and sometimes even changes in urban infrastructure. Whereas the required behavioral changes are the same everywhere, the ways to achieve them will necessarily vary across the country, with different approaches corresponding to cultural, social, and economic features.

The toll that diabetes takes on individuals, societies and economies especially in the developing and less developed world cannot be overstated. For many patients in Kenya maintenance treatment for diabetes is expensive and poses an economic challenge to their families. As a result some of these patients do not comply with treatment therefore placing them at a higher risk of developing end organ damage. Those who need more advanced, more expensive care for diabetes related complications are often the very people who cannot afford such care, taking into consideration that approximately 46% of the Kenyan population lives on less than a dollar a day (Kenya household economic survey). When burdened with debilitating or life threatening complications requiring expensive advanced care, many of them are forced to sell their meager assets in order to pay for treatment thus becoming impoverished at the individual, family and community level. Diabetes also affects the most productive age group in the society

Effective prevention strategies for diabetes are not costly and may actually bring down costs related to other related NCDs. However, both in health and economic terms, neglecting chronic diseases such as diabetes is very expensive. The costs of treatment and loss of productivity undermine and stunt economic growth and negatively impact on realization of the Millennium Development Goals (MDGs) (WDF, 2007), vision 2030 and other national development targets.

If Kenya can successfully strengthen its health systems to improve the coverage of interventions that reduce infectious disease and maternal and childhood conditions, it equally can build further capacity to address the rising burden of diabetes and other non-communicable diseases.

The National Diabetes Strategy proposes a framework and implementation guidelines based on the overall goal of preventing or delaying the development of diabetes and its associated complications in the Kenyan population, improvement of the quality of life and premature mortality in people with diabetes.

NOTE:
Many chronic diseases including diabetes do not cause sudden death. Rather, they cause progressive illness and debilitation. In this way, they reduce productivity of the individual, draining away their resources. This aggravates poverty .

Guiding Principles

The following are the guiding principles for the implementation of NDS 2010 – 2015.

1. Equity and accessibility of diabetes services: The NDS is aimed at ensuring that every person irrespective of their social or economic status, race or creed access diabetes care services without discrimination.
2. Gender responsiveness: The NDS recognizes the particular vulnerable position of women and children in the society and supports interventions geared towards these groups.
3. Partnerships, Team Building and coordination: With the involvement of all partners at various levels (government , private sector, civil society and community) in the development, planning and implementation of interventions; such coordination should be based on a clear definition and understanding of roles, responsibilities and mandates
4. Innovation, creativity and accountability, with the involvement of individuals, people with diabetes and their families, civil society and community at all stages of decision making, planning, implementation and evaluation
5. Privacy and confidentiality: Every diabetes patient has a right to privacy and confidentiality regarding their health.
6. Systematic and integrated approach to step by step implementation of priority interventions as part of a national diabetes action plan
7. Supportive leadership and management:

The Strategy

This strategy represents the views and opinions of diabetes experts, health care providers and other stake holders in Kenya. The priority of this strategy is prevention, early detection and control of diabetes. It recognizes that to achieve this, there is need to address the health care system to support delivery of prevention and care services.

The implementation of this strategy will eventually alleviate the suffering and unnecessary early deaths of people with diabetes, find and treat those with diabetes, and to prevent new cases.

It recognizes that to achieve this, there is need to address the health care system to support delivery of prevention and care services for diabetes.

Vision

A diabetes care system that is efficient, responsive and acceptable to all Kenyans.

Mission

To promote the provision of high quality, accessible, affordable and evidence-based diabetes prevention and care services to all people living in Kenya.

Overall Goals

1. To prevent or delay the development of diabetes in the Kenyan population.
2. To improve the quality of life and reduce complications and premature mortality in people with diabetes.

Objectives

1. To improve the capacity of the health systems to deliver, manage, monitor and evaluate services for the prevention of diabetes and the care of people with diabetes.
2. To reduce the number of new cases of Type 2 diabetes through life style modification
3. To improve early detection for diabetes and its complications through screening
4. To increase the knowledge and understanding of diabetes to the population
5. To improve maternal and child outcomes for gestational diabetes, and for pregnant women with pre-existing diabetes.

6. To network and integrate diabetes care with other national programs e.g. HIV/AIDS, TB and malaria.
7. To promote research in diabetes in order to advance knowledge about the prevention and care.

Key Strategies

1. Advocacy

This is about making diabetes everybody's business and combines the notion of individual, community, social, corporate and government responsibility. This is because diabetes affects everybody in some way and so should be the responsibility of everyone to address the determinants of diabetes and related chronic diseases and conditions.

Activities:

- Develop a broad-based advocacy platform that integrates diabetes and related chronic diseases to have a stronger voice.
- Identify and network with Non-Governmental Organization (NGOs), key opinion leaders, health professionals and academia in diabetes and related chronic diseases.
- Develop appropriate information materials for diabetes and associated risk factors, such as obesity, physical inactivity, tobacco use, alcohol abuse and inappropriate nutrition, and their primary prevention
- Liaise with media services to promote diabetes awareness and available services.
- Lobby government Ministries and departments to invest in health and healthy environments.
- Lobby corporate groups to contribute to diabetes related programs and to provide diabetes prevention and care to their workers through their corporate social responsibility programmes.
- Sensitize Communities on diabetes prevention and control
- Commemorate the World Diabetes Day every year

2. Empowerment

The concept of empowerment is encouraging full engagement of all levels and facets of society in taking responsibility for health as a fundamental common asset. Empowering individuals, families and communities helps to prevent and manage diabetes optimally. To achieve this, diabetes prevention and care must be

integrated into the primary health care programme at all levels.

Activities:

- Conduct education sessions for people with diabetes to empower them with self management skills
- Develop clear consistent diabetes information education and communication materials targeting people with diabetes.
- Encourage people with diabetes to pass on health messages and practice healthy lifestyle choices within their families.
- Support Individuals and heads of households to promote and adopt healthy lifestyles within their families
- Support school health programmes to create awareness of diabetes and other non-communicable diseases
- Encourage diabetes awareness and healthy lifestyles at work places
- Conduct community education campaigns
- Set up and train diabetes support groups

3. Resource Mobilization and Prioritization

Resource Mobilization

Having clear priorities and evidence of effectiveness will provide a sound platform for arguing for resources to be directed to diabetes. Clear and rational priorities can also help to reduce waste and duplication and can highlight ways in which existing resources can be allocated more effectively.

Activities

- Conduct needs assessment and identify available resources for diabetes
- Lobby government, development partners and funding agencies to allocate adequate resources for diabetes and other non-communicable diseases.
- Integrate diabetes prevention and control into the national and district health plans
- Advocate for allocation of resources for diabetes from devolved development funds such as constitution and local authority development funds.

Prioritization

This involves making the best use of scarce resources to achieve highest impact, engage all stakeholders in assessing the needs versus available resources, and in setting national and local priorities for what needs to be done, in what order, and to what extent.

Activities

- Set national and local diabetes priorities and identify actors in the priority areas
- Assess available resources and existing opportunities for funding
- Define common diabetes agenda and develop a joint program for work and funding (JPWF) with partners

4. Capacity building

Capacity building is about making what you have work better by improving the human resource capacity, making health systems more responsive to diabetes through improved infrastructure, adequate medical supplies, improved diagnostic services and provision of necessary protocols and standards.

Activities

- Conduct Training of health care providers on the required competencies and deploy them appropriately for diabetes care.
- Develop and provide the health care providers (HCP) with clinical guidelines and treatment protocols
- Develop norms and standards for diabetes care at all levels.
- Provide clinical and diagnostic equipments, medical supplies and infrastructure for diabetes care according to the national standards
- Develop appropriate information systems and appropriately train providers on how to use it.
- Develop and maintain efficient systems for evaluation and quality improvement.

5. Partnership and Coordination

The purpose of this strategy is to promote efficient implementation of diabetes control interventions through improved coordination and collaboration of partners in the country. The implementation of National Diabetes Strategy will be coordinated by National Diabetes Steering Committee with the guidance of the Inter Agency Coordinating Committee

Activities

- Setting up and strengthening of the following coordinating units
- National Diabetes Steering Committee (NDSC)
- Inter- Agency Coordinating Committee (ICC)
- National diabetes stake holders forum (NDSF)
- Health Facility/District Diabetes Management Committee
- Community diabetes support groups
- Develop and strengthen Collaboration and linkages with other health programs (HIV/AID, ophthalmic, TB, Malaria etc) in order to address Diabetes concerns.
- Support districts to integrate Diabetes control issues into the district health plans
- Support districts to integrate Diabetes control issues into the district stake holders forum
- Support District and Health Facility Diabetes management committee
- Support Community diabetes support groups
- Mobilize resources for implementation of National Diabetes Strategy.

6. Diabetes Control Policies, Legislation and Regulations

To ensure that policies and legislation that support diabetes are enacted and implemented. The government will take up issues of policy, regulations and legislation.

Activities

- Develop policies that ensure access to insulin and other diabetes commodities in terms of quality, availability and affordability
- Regulation of food labeling
- Standardization and availability of testing kits for diabetics
- Establishment of a national diabetes registry
- Regulate and Define the role of herbal medicine, food supplements and alternative medicine in diabetes care
- Formulate National Standards for diabetes prevention and care.
- Support the development and implementation of Legislation and policies that favour diabetes prevention and control.

7. Research

Combating the rapidly growing burden of diabetes requires strategic effort across the entire spectrum of research - epidemiology, behavioral, health system, biomedical and clinical. There is need to support research on diabetes and timely disseminate the findings to the decision makers.

Activities

- Identify priority research issues on diabetes
- Support epidemiological and operational research on priority diabetes issues at all levels
- Undertake formative research to guide the development of advocacy tools
- Improve dissemination of research finding on diabetes to stakeholders
- Document, publish and share existing research findings on diabetes.

8. Monitoring and evaluation

Continuous measurement of the progress and impact of the implementation of NDS are essential to achieving planned interventions.

NDS recognizes that establishing effective systems for M&E are a vital management tool. Indicators to monitor inputs, process, outputs, outcomes and impact will be used to assess collective efforts.

Activities

- Develop M&E indicators and tools for diabetes
- Review and harmonize M&E indicators and tools for diabetes
- Strengthen collection, reporting, analysis and utilization of diabetes data
- Establish data base for diabetes at all levels of health care
- Develop software for diabetes data capture and integrate it within the health management information systems (HMIS)
- Regular review of the NDS implementation

NATIONAL DIABETES STRATEGY IMPLEMENTATION FRAMEWORK 2010 - 2015

Strategy	Outputs	Activities	Monitoring Indicators	Time Frame					Lead Agency	Key Partners
				Y1	Y2	Y3	Y4	Y5		
Advocacy	Increased awareness of diabetes at all levels	Develop a broad-based advocacy platform that integrates diabetes and related chronic diseases to have a stronger voice.	No. of partners actively involved in diabetes advocacy						MoPHS/ DNCD MOMS	WDF DMI KDA WHO
		Establish strong networks with NGOs, key opinion leaders, health professionals and academia in diabetes and related chronic diseases.	No. of forums held	X	X	X	X	X	MoPHS/ DNCD MOMS	WDF DMI KDA WHO Universities
		Develop appropriate information materials for diabetes and associated risk factors.	No. of IEC materials developed and disseminated	X	X	X	X	X	MoPHS/ DNCD MOMS	WDF DMI KDA WHO
		Liaise with media services to promote diabetes awareness	Number of media providers involved in promotion of diabetes awareness	X	X	X	X	X	MoPHS/ DNCD MOMS	WDF DMI KDA WHO
		Lobby government Ministries and departments to invest in health and healthy environments	No. of Government Ministries and departments supporting diabetes prevention and control	X	X	X	X	X	MoPHS/ DNCD MOMS	WDF DMI KDA WHO

Strategy	Outputs	Activities	Monitoring Indicators	Time Frame					Lead Agency	Key Partners
		Lobby corporate groups to support diabetes related programs	No. of corporate groups supporting diabetes related programs	X	X	X	X	X	MoPHS/ DNCD MOMS	DMI KDA
		Lobby corporate groups to support diabetes care and prevention to their workers	No. of corporate groups supporting diabetes care to their workers	X	X	X	X	X	MoPHS/ DNCD MOMS	DMI KDA
		Sensitize Communities on diabetes control and prevention	No. of community members reached	X	X	X	X	X	MoPHS/ DNCD MOMS	DMI KDA
		Commemorate World Diabetes Day annually	Report of events held	X	X	X	X	X	MoPHS/ DNCD MOMS	DMI KDA
Empowerment	Empowerment of the community to engage in prevention and care of diabetes	Conduct education sessions for people with diabetes to empower them with self management skills	No. of people reached	X	X	X	X	X	MoPHS/ DNCD MOMS	WDF DMI KDA WHO
		Develop diabetes information, education and communication materials targeting community members	No. of IEC materials developed						MoPHS/ DNCD	WDF DMI KDA WHO
		Support Individuals and heads of households to promote and adopt healthy lifestyles within their families	No. of households supported	X	X	X	X	X	MoPHS/ DNCD	

Strategy	Outputs	Activities	Monitoring Indicators	Time Frame					Lead Agency	Key Partners
		Support Individuals and heads of households to promote and adopt healthy lifestyles within their families	No. of households supported	X	X	X	X	X	MoPHS/ DNCD MOMS	
		Support school health programmes to create awareness of diabetes and other non-communicable diseases	No. of schools with healthy lifestyle programmes	X	X	X	X	X	MoPHS/ DNCD MOMS	
		Encourage diabetes awareness and healthy lifestyles at work places	No. of work places with healthy lifestyle programmes	X	X	X	X	X	MoPHS/ DNCD MOMS	
		Conduct community education campaigns	No. of campaigns conducted	X	X	X	X	X	MoPHS/ DNCD MOMS	
	Empowerment of people with diabetes to engage in prevention and care of diabetes	Conduct education sessions for people with diabetes to empower them with self management skills	No. of number of people with diabetes reached	X	X	X	X	X	MoPHS/ DNCD MOMS	WDF DMI KDA WHO
		Develop diabetes information , education and communication materials targeting people with diabetes	No. of diabetes IEC materials targeting people with diabetes developed and disseminated	X					MoPHS/ DNCD MOMS	WDF DMI KDA WHO
		Set up and train diabetes support groups	No. of diabetes support group carrying awareness activities	X	X	X	X	X	X MoPHS/ DNCD MOMS	

Strategy	Outputs	Activities	Monitoring Indicators	Time Frame					Lead Agency	Key Partners
Partnership and Coordination	Coordinating units set up and strengthened	Set up and strengthen coordinating units	No. of coordinating units set	X	X				MoPHS/ DNCD	WDF DMI KDA WHO
			No. of meetings held by coordinating units	X	X	X	X	X	MoPHS/ DNCD	DMI KDA
	Collaboration and linkages with other health programs developed and strengthened.	Develop and strengthen Collaboration and linkages with other health programs.	No. of other health programs collaborating with diabetes program	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	Diabetes control issues integrated into the district health plans	Support districts to integrate Diabetes control issues into the district health plans	No. of districts integrating diabetes issues into their DHP	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	Diabetes control issues integrated into the district stake holders forum	Support districts to integrate Diabetes control issues into the district stake holders forum	No. of Districts stake holders forums focusing on diabetes issues	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	District and Health Facility Diabetes management committee established	Establish District and Health Facility Diabetes management committees	No. of districts with functional diabetes committees	X	X	X			MoPHS/ DNCD	WDF DMI KDA WHO

Strategy	Outputs	Activities	Monitoring Indicators	Time Frame					Lead Agency	Key Partners
			No. of health facilities with functional Diabetes committee	X	X	X			MoPHS/ DNCD	WDF DMI KDA WHO
	Community diabetes support groups supported	Support Community diabetes support groups	No. of diabetes support groups formed	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
			No. of functional diabetes support groups	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	Resources for implementation of National Diabetes Strategy mobilized	Mobilize resources for implementation of National Diabetes Strategy.	Proportion of resources mobilized for planned activities	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
Diabetes policies, legislation and regulations	Increased policy support for diabetes	Develop policies that ensure access to insulin and other diabetes commodities in terms of quality, availability and affordability	Policy in place	X	X	X			MoPHS/ DNCD	WDF DMI KDA WHO
		Regulation of food labeling	No. of policy regulations on food labeling	X	X	X			MoPHS/ DNCD	WDF DMI KDA WHO
		Regulate and Define the role of herbal medicine, food supplements and alternative medicine in diabetes care	No. of community guidelines developed				X	X	MoPHS/ DNCD	WDF DMI KDA WHO

Strategy	Outputs	Activities	Monitoring Indicators	Time Frame					Lead Agency	Key Partners
			No. of community guidelines disseminated				X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	National Standards for diabetes prevention and care are in place	Formulate National Standards for diabetes prevention and care.	National Standards for diabetes prevention and care in place	X	X				MoPHS/ DNCD	WDF DMI KDA WHO
	Legislations in favour of diabetes control are supported	Support the development and implementation of Legislation that favour diabetes prevention and control.	No. of legislation supported	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	Policies supporting diabetes are in place	Develop and implement Policies supporting diabetes prevention and control.	No. of policies developed						MoPHS/ DNCD	WDF DMI KDA WHO
Research	Priority research issues on diabetes Identified and supported at all levels	Identify priority research issues on diabetes	No of Priority research issues identified	X			X		MoPHS/ DNCD	WDF DMI KDA WHO
		Support epidemiological and operational research on priority diabetes issues at all levels	No of Priority research issues supported	X			X		MoPHS/ DNCD	WDF DMI KDA WHO

Strategy	Outputs	Activities	Monitoring Indicators	Time Frame					Lead Agency	Key Partners
	Formative research to guide the development of advocacy tools undertaken	Undertake formative research to guide the development of advocacy tools	No. of Formative researches undertaken	X	X				MoPHS/ DNCD	WDF DMI KDA WHO
	Existing research on diabetes documented and shared	Document, Publish and share existing research on diabetes.	No. of Existing research on diabetes documented			X	X		MoPHS/ DNCD	WDF DMI KDA WHO
	Dissemination of research finding on diabetes Improved	Improve dissemination of research findings on diabetes to stakeholders	No. of diabetes research sharing forums held			X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
Monitoring and Evaluation	M&E indicators and tools for diabetes developed	Develop M&E indicators and tools for diabetes	No. of M&E indicators and tools developed	X	X				MoPHS/ DNCD	WDF DMI KDA WHO
	M&E indicators and tools for diabetes reviewed and harmonized	Review and harmonize M&E indicators and tools for diabetes	No. of M&E indicators and tools reviewed and harmonized	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	Data base for diabetes at all levels of health care established	Establish data base for diabetes at all levels of health care	Proportion of reporting units with Diabetes database in place			X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO

Strategy	Outputs	Activities	Monitoring Indicators	Time Frame					Lead Agency	Key Partners
	Collection, analysis, reporting and utilization of diabetes data strengthened	Strengthen collection, reporting, analysis and utilization of diabetes data	No. of units collecting data	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
			No. of units reporting on diabetes	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	Software for diabetes data base developed, piloted and rolled out	Develop, pilot and roll-out software for diabetes data base	Software for diabetes data base developed and piloted			X	X		MoPHS/ DNCD	WDF DMI KDA WHO
			No. of reporting units using diabetes data base software			X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO
	NDS implementation regularly reviewed	Conduct regular supportive supervisory visits to the districts	No. of visits made							
		Regular review of the NDS implementation	No. of NDS review meetings conducted	X	X	X	X	X	MoPHS/ DNCD	WDF DMI KDA WHO

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Division of Non-communicable Diseases
Afya House, Cathedral Road
P.O. Box 30016 – 00100
Nairobi, Kenya.

Telephone: +254 202 71 7 071

www.pubhealth.go.ke

WORLD DIABETES FOUNDATION

International Diabetes Federation
African Region