INTEGRATED MULTI-SECTORAL APPROACH TO NCDs in KENYA

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INTRODUCTION

Kenya is experiencing increase in diabetes, heart disease, cancer, chronic lung, neurological, psychiatric diseases and injury even before communicable diseases like malaria, HIV and tuberculosis have been brought under control resulting into “double burden of diseases”.
ECONOMIC INDICATORS

- Population of about 42 million people most below 20 years
- 78% live in rural areas. (Urban 22%)
- Life expectancy at birth is 59.5 years.
- The GDP is at US$20.6 billion.
- Average per capita income is about US$780 (Atlas method, World Bank 2011)
- Poverty head count of 47%.
NHA Accounts 2009

- Total Health Expenditure (THE) per capita is US$27
- government health expenditure is 5.2% total gov’t expenditure
- Public facilities - 44.3% of the providers, private facilities - 29.2% and others - 26.5%.
- Outpatient functions (39.6%), in-patients - 29.8%, health administration - 14.5%,
- Preventive and public health programmes 11.8% and pharmaceuticals 2.6%.
- 1.4 hospital beds, 0.14 physicians and 1.18 nurses per thousand populations.
• Research on evidence for the current health burden of chronic NCDs in Kenya.
• Availability and quality of data on NCDs on prevalence, burden, costing and economic data
• Assess the current state of action on NCDs in Kenya
• Barriers to commitment and action on chronic diseases
• National health decision making process and systems
• Baseline for decision making toolkit
METHODS OF CASE STUDY

• Systematic literature search with key words defining the various sections and sub-sections of the case study (PUMED)

• WHO publications, professional society journals and websites, world bank and UN publications, government of Kenya gazette notices and publications, magazines etc.

• Quantitative and qualitative data collected, and reviewed in context of the objectives of the case study. Balance of population studies, hospital-based studies, laboratory studies, size of study, variety of study designs and quality of methodology were all considered. About 192 publications related to this case study objective have been reviewed.
## Chronic disease Publications

<table>
<thead>
<tr>
<th>Condition</th>
<th>Epidemiology</th>
<th>Cost/Econ. burden</th>
<th>Interventions costs</th>
<th>Region/national</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General NCD</td>
<td>27</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Diabetes</td>
<td>17</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>CVD</td>
<td>19</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Cancer</td>
<td>38</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>49</td>
</tr>
<tr>
<td>COPD/Asthma</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Other chronic</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Obesity/diet</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Smoking</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Physical activity</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Alcohol</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>
| Chronic infections   | 9            | 0                 | 1                   | 0              | 10    | (192)
Cancers: 3.6%
Diabetes: 1.6%
Respiratory: 2.0%
Other NCDs: 5.0%
Injuries: 4.1%
Nutritional deficiencies: 0.6%
Perinatal conditions: 7.9%
Maternal conditions: 2.9%
Respiratory infections: 7.6%
Infectious & parasitic: 54.6%

Other Causes: 73.7%

All NCDs: 22.3%

Source: Global Burden of Disease: data sources, methods and results.

WHO Global Infobas
<table>
<thead>
<tr>
<th>CHRONIC DISEASE</th>
<th>DALYs/1000 capita/yr</th>
<th>World range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other unintentional injuries</td>
<td>6.8</td>
<td>0.6 – 30</td>
</tr>
<tr>
<td>Road traffic accident</td>
<td>3.6</td>
<td>0.3 – 15</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>1.9</td>
<td>1.4 – 14</td>
</tr>
<tr>
<td>Cancer</td>
<td>1.9</td>
<td>0.3 – 4.1</td>
</tr>
<tr>
<td>Asthma</td>
<td>1.7</td>
<td>0.3 – 2.8</td>
</tr>
<tr>
<td>Neuropsychiatric</td>
<td>1.7</td>
<td>1.4 – 3.0</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>0.6</td>
<td>0.5 – 1.5</td>
</tr>
<tr>
<td>COPD</td>
<td>0.6</td>
<td>0.0 – 4.6</td>
</tr>
</tbody>
</table>
BURDEN OF DIABETES

• No whole country data available for NCDs
• Regional population samples and hospital data
• Average 4% (2% rural & 12% urban)
• IGT (average 12%)
• 68% of known diabetics found to be on RX
• 30% achieve HbA1C target of <7%
• Most are ketosis prone. 50% of deaths in insulin depended diabetics due to DKA. DKA accounts for 8% of diabetic admissions (30% mortality in 48hrs.)
CVD BURDEN

• Variable prevalence of HTN reported. 21 – 50% (rural, community, urban, age group).
• Evidence of rural-urban migration, salt and activity on blood pressure
• CVD cause of death from autopsy studies - 13% Hospital admissions 25%, (rheumatic heart disease leading cause of HF admissions – 43%)
• Population prevalence of HF in ≥50yrs is 2% and asymptomatic LVD 3.5%.
• RHD prevalence 2/1000 by clinical method & 27/1000 by echocardiography.
## CANCER BURDEN IN KENYA - 1

<table>
<thead>
<tr>
<th>WOMEN</th>
<th>MEN</th>
<th>COMBINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>Oesophagus</td>
<td>Breast</td>
</tr>
<tr>
<td>Cervix</td>
<td>Prostate</td>
<td>Cervix Uteri</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>Stomach</td>
<td>Prostate</td>
</tr>
<tr>
<td>Ovary</td>
<td>Liver</td>
<td>Oesophagus</td>
</tr>
<tr>
<td>Stomach</td>
<td>Kaposis</td>
<td>Stomach</td>
</tr>
<tr>
<td>Liver</td>
<td>Leukemia</td>
<td>Liver</td>
</tr>
<tr>
<td>Colorectal</td>
<td>Colorectal</td>
<td>Ovary</td>
</tr>
<tr>
<td>Non-Hodgkins lymphoma</td>
<td>Non-Hodgkins lymphoma</td>
<td>Kaposis</td>
</tr>
<tr>
<td>Corpus Uteri</td>
<td>Lung</td>
<td>Colorectal</td>
</tr>
<tr>
<td>Kaposi Sarcoma</td>
<td>Pancreas</td>
<td>Non-Hodgkins lymphoma</td>
</tr>
</tbody>
</table>
Risk factors for cancer in Kenya include:

- Genetic predisposition,
- Behavioural risk factors (e.g. smoking, excessive alcohol consumption, physical inactivity and obesity),
- Environmental carcinogens (e.g. aflatoxin)
- Infections. (Human papilloma virus (HPV), Hepatitis B virus, Hepatitis C virus and Helicobacter pylori, ?HIV). These infections are largely preventable through vaccinations and measures to avoid transmission, or treatable.
Cigarette Smoking

- Smoking - average 26% (Kenya)
- 200,000 tobacco related deaths in Africa per year (WHO, 2000)
- Tobacco the single largest causative factor; 30% of all cancers, 90% of lung cancer, as well as causing heart dx, stroke. (SSA)
- Youth smoking - 9.8 per cent are currently smoking cigarettes
- 12.8 per cent use other forms of tobacco (SSA-GYTS 2007)
- Tobacco Control Bill 2007 (implementation)
Alcohol

- Alcohol consumption has diverse and complex interactions with chronic non-communicable diseases (CVD, cancer, mental illness, injuries etc)

- Survey of patients attending primary care facilities for general problems - 18% had a hazardous level of alcohol intake and 23% had experienced at least one alcohol-related problem in the previous year. (WHO 2003)
PHYSICAL ACTIVITY

- About 72% of Kenyan children and youth were classified as physically active (Global WHO guidelines for physical activity).
- There are disparities across age, sex, and socioeconomic status.
- Studies show that children from rural Kenya are more physically active than their urban counterparts.
- 70% of urban Kenyan and 34% of rural Kenyan parents reported being more active during childhood than their children.
- Over 50% of Kenyan athletes ran to school each day and covered over 5 km.
Rural vs Urban school children
Kenya's 2011 Report Card on the Physical Activity and Body Weight of Children and Youth

![Bar chart comparing physical activity methods (Car, Bus, Run, Walk) for rural (RKEN) and urban (UKEN) children in Kenya's 2011 Report Card.](chart.png)
Diet & Obesity

• The 2008–2009 y (KDHS)- 12.3% of women aged 15–49 years are underweight & 25.1% of women are overweight or obese – “nutrition transition”

• Urban women have significantly higher mean BMI (25.6 vs. 24.2 kg/m2), waist (80.8 vs. 78.9 cm) and hip measurements (102.1 vs. 98.6 cm) compared to rural women. (KCBS- 2009).

• Dietary differences are also significant between urban and rural population although this is changing very fast.
4 by 4

- 4 diseases contribute to over 2/3 morbidity & mortality from NCDs
- Namely - Cardiovascular disease, diabetes, cancer and chronic lung disease
- 4 simple, modifiable behavioural risk factors account for vast majority of the cases of Cardiovascular disease, Diabetes, cancer & chronic lung disease
- Namely – unhealthy diet, inadequate physical activity, smoking & excessive alcohol consumption
BARRIERS TO ACTION & GAPS

"Living in urban areas means we are much less active than before..."

"A woman needs big arms to cook a big pot of food..."

"Xhosa women are not allowed to wear sports outfits and exercise in public..."

"There are no facilities, time or money enough to exercise..."

"If a fat person loses weight, they are considered "thin, even if still overweight by Western standards..."

"Being thin is associated with being unhappy or ill"

"I was meant to be big..."

BARRIERS TO PHYSICAL ACTIVITY

- Access to Amenities
- Connectivity
- Density
- Aesthetics
- Safety
DIET

• Knowledge and attitudes
• Agricultural practices
• Availability
• Food prices
• Food information & labeling
• Marketing activities and global trade
• Food policy
ALCOHOL CONSUMPTION

• Alcohol use - average 20% (KDHS-2003)
• Economics of alcohol trade and taxation
• Marketing of alcohol
• Responsible alcohol consumption
• Effects of different levels on health
• The Alcohol Control Bill 2010 (implementation)
Barriers to change

• Lack of knowledge
• Inappropriate attitudes, beliefs & practices for healthy diets & physical activity
• Physical infrastructure & security not supportive to physical activity
• Inadequate policy and legislation to support healthy diets (marketing to children, food labelling & pricing)
• Weak policy & legislation implementations on alcohol and smoking (Kenya 2008 anti-Tobacco Bill, 2010 alcohol control bill)
FRAMEWORK OF SOCIO-ECONOMIC DETERMINANTS OF HEALTH

Living and working conditions may include:
- Psychosocial factors
- Employment status and occupational factors
- Socioeconomic status (income, education, occupation)
- The natural and built environments
- Public health services
- Health care services
Health Behaviours
- Tobacco use
- Alcohol consumption (heavy)
- Alcohol abstainers
- Physical inactivity
- Fruit/vegetable intake

Physiological Factors
- Obesity/overweight (& mean BMI)
- Raised blood pressure (& mean systolic blood pressure)
- Raised lipids (& mean total cholesterol)
- Diabetes (& mean blood glucose)

Disease outcomes
- Heart disease
- Stroke
- Cancers
- Diabetes
Healthcare system

• Current healthcare – silos of disease focused depts; not on population’s health or patients
• Current health care system - focus on acute, episodic care.
• Inadequately designed and resourced to care for people with chronic conditions such as cancer, CVD, diabetes etc.
• They require repeated visits, information and counselling on lifestyle changes to minimize complications and support with adherence to treatment and self-care.
Healthcare for NCDs

• Prevention (lifestyles in workplace, school, neighbourhood)
• Screening & Education
• Primary care (integrated care – healthcare system strengthening)
• Capacity Building for primary care (equipment, innovative/new technology processes)
• Surveillance and research – evidence based policy
• Health information systems
• Secondary & Tertiary Care (centres of excellence – Public-Private Partnerships)
• Healthcare financing – Sustainability, equity and access to care.
The Global NCD Alliance

1. Covers the four major NCDs as defined by WHO in their 2008 action plan on NCDs.
2. Over 880 member associations in 170 countries.
3. Put together in May, 2009 and has proved to be a strong and effective advocacy network, linking member associations on the ground with global organizations.
NCD Alliance in Kenya

• Diabetes, Heart disease, Cancer, Chronic Lung disease, Neurologic diseases and chronic arthritis and mental illness have common risk factors that are amenable to prevention

• Simple primary care packages are feasible to implement

• It is time for new paradigm in healthcare systems in affected countries and achieve what has hitherto eluded developed world.

• Healthcare system should target populations and patients and not just diseases.
The Kenya NCD Alliance so far

- Diabetes management & Information Centre (DMIC)
- Kenya Diabetes Association (KDA)
- Kenya Association for Prevention of Tuberculosis & Lung Disease (KAPTLD)
- Kenya Society for Haemato-Oncology (KESHO)
- Neurological Society of Kenya (NSK)
- Rheumatological Society of Kenya (RSK)
- Psychiatrists Association of Kenya (PAK)
- Kenya Non-Communicable Diseases Consortium (KNCDC)
- Kenya Cardiac Society (KCS)
Principles for Kenya NCD Alliances

- Broad multi-sectoral approach
- Integration of NCDs to CDs programmes & activities
- Integration of NCDs
- Defining NCDs for Kenya
- Coordinated stakeholders activities to achieve synergy
Activities

• Integration & strategic meetings between KCS, DMI, KESHO, KATLD, DKA, RSK and civil societies dealing with NCDs. Registration KNCDA

• Strategic meetings with government ministries concerned with health & other NGOs. (June 2011 symposium with Gov’t, NGO leaders)

• Capacity building for primary NCDs healthcare providers

• Baseline risk factors & barriers survey for Primordial and primary prevention of NCDs (schools, workplace & neighbourhoods)

• Pilot integration of Cardio-metabolic care into HIV care networks, MCH/FP, etc

• Promotion of healthy diets, physical activity, cessation of smoking and moderation of alcohol.

• Kenya NCD Policy development

• Support activities build up to UNGASS Sept, 2011
Opportunities

- promotion of healthy diets, increased physical activity & alcohol and tobacco control at the population level,
- advocacy for policies, financial and physical structures that support control of NCD risk factors
- Surveillance, and other research activities that provide evidence based policy developments and interventions
- Primary care models, capacity building and financing of primary care for NCDs.
- Organisation and financing of secondary and tertiary NCD care (centres of excellence – national or continental?). PPP
Strategy/Action Plan

• Integrating care for CD with care for NCDs
• Targeting populations healthcare needs instead of diseases only.
• Use of existing healthcare infrastructure (MCH/FP, KEPI, HIV/TB Care networks, Malaria control, etc) for both CD & NCD
• Increased government funding of health budget.
• Strengthening of health information systems, and (also e-health, m-health and tele-health)
• Expansion of the essential drug list
• Re-engineering and expansion of insurance industry for population coverage and disease coverage by insurance
• Public-private partnerships
• Advocacy and health promotion activities to public and policy makers
WAY FORWARD (Challenges)

• Evidence – policy – evidence - policy
• Clear policy framework
• Integration of NCDs
• Integration into primary healthcare
• Inter-sectoral collaborative approach.

(every gov’t minister should be a health minister)

• Political goodwill/ professional advocacy/civil society promotional activity
"You must be the change you wish to see in the world."

Mahatma Gandhi
Asante sana!