Scope of the report

- Burden of diabetes
- Preventing diabetes
- Managing diabetes
- National response
- Recommendations
BURDEN OF DIABETES
Diabetes

- is a serious, chronic disease
- characterized by elevated blood glucose
- occurs either when the pancreas does not produce enough insulin (type 1)
- or the body cannot effectively use the insulin it produces (type 2).
Causative risk factors

<table>
<thead>
<tr>
<th>Non-communicable diseases</th>
<th>Causative risk factors</th>
<th>Tobacco use</th>
<th>Unhealthy diets</th>
<th>Physical inactivity</th>
<th>Harmful use of alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease and stroke</td>
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<td>✔</td>
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<tr>
<td>Diabetes</td>
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<tr>
<td>Cancer</td>
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<tr>
<td>Chronic lung disease</td>
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Diabetes is one of the four major NCDs

Diabetes is one of the four major NCDs: Heart disease and stroke, Diabetes, Cancer, Chronic lung disease.
Risk factors

➢ Type 1
   ➢ Exact causes are unknown.

➢ Type 2
   ➢ Risk is determined by genetic and metabolic factors
   ➢ Overweight/obesity and physical inactivity are the strongest risk factors
   ➢ Fetal & early childhood nutrition affect future risk
Complications of diabetes

- Retinopathy
- Cerebrovascular disease
- Coronary heart disease
- Nephropathy
- Peripheral vascular disease in the lower limbs
- Neuropathy
- Ulceration and amputation for diabetic foot
Rise in diabetes

1980: 108 million
2014: 422 million
Rise is faster in low- and middle-income countries
Increase in diabetes is most marked in the WHO Eastern Mediterranean Region.
Deaths due to high blood glucose
3.7 Million

Deaths due to diabetes
1.5 Million

43% of deaths occurred under the age of 70 years
Economic impact of diabetes

- Catastrophic medical expenditure significantly higher in people with diabetes.
- Direct annual cost of diabetes globally > US$ 827 billion.
- Losses in GDP worldwide estimated to be US$ 1.7 trillion from 2010 to 2030
Diabetes and the global NCD agenda

2011 UN Political Declaration on NCDs

NCD Global Action Plan 2013-2020

NCD Targets for 2025 – Halt the rise in Diabetes

SDG target- One third reduction in premature mortality from NCDs (including Diabetes)

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PREVENTING DIABETES
Overweight and obesity increasing

2014
1 in 3 overweight
1 in 10 obese
Preventing type 2 diabetes at the population level

- Multisectoral approaches
  - to reduce the prevalence of modifiable diabetes risk factors

- A combination of:
  - fiscal policies,
  - legislation,
  - changes to the environment and raising awareness of health risks

Can promote healthier diets and physical activity.
Healthy work places
School-based approach
Preventing type 2 diabetes in people at high risk

- Diabetes can be delayed or prevented
  - in people who are overweight and have impaired glucose tolerance (IGT).

- Diet and physical activity are more effective than medication.

- The high-risk approach needs to be implemented in accordance with available resources.
MANAGING DIABETES
Diagnosing diabetes

- Diabetes is diagnosed by
  - measuring glucose in blood
    - Fasting
    - 2 hours after a 75g oral load of glucose
  - measuring glycated haemoglobin (HbA1c)
- High proportion of type 2 diabetes is undiagnosed.
Management of diabetes

- Good management can prevent complications and premature death using:
  - standard guidelines and protocols (WHO Package of Essential NCD interventions)
  - small set of generic medicines
  - diet and physical activity
  - patient education about self-care
  - regular screening for early detection and treatment of complications.
Access to affordable insulin

- People with type 1 diabetes require insulin for survival. People with type 2 diabetes often need insulin.

- Low-income countries generally pay most for insulin while high- and middle-income countries pay least.

- Only 23% of low-income countries report that insulin is generally available.
Early detection and treatment of complications

- **End-stage renal disease**
  - Measurement of urine protein
  - Progression to kidney failure can be slowed by essential drugs

- **Cardiovascular diseases**
  - Measure and control cardiovascular risk factors

- **Blindness**
  - Periodic eye examinations and timely laser photocoagulation

- **Lower limb amputation**
  - Proper footwear and regular examination of feet
  - Provide rehabilitation
Integrated management of diabetes and other chronic health conditions

- Diabetes management should be integrated with
  - management of other NCDs, and
  - in some settings with tuberculosis and HIV/AIDS.
NATIONAL RESPONSE
National capacity for prevention and control of diabetes (NCD CCS 2015-177 countries)

- 156 countries have a national diabetes policy, plan or strategy, only 127 are funded and operational.

- 68% of countries have operational policies for diet and physical activity.

- < 50% of countries have conducted a national, population-based survey with measurement of blood glucose status within the past 5 years.
National capacity for prevention and control of diabetes (NCD CCS 2015- 177 countries)

- Only 47% of countries report full implementation of guidelines for management of diabetes.

- Only 1/3 of low- and lower-middle income countries have all three basic technologies in PHC
  - blood glucose
  - urine strip for glucose/ketone and
  - height and weight measurement

- Blood glucose measurement is generally available in primary care in 50% of low-income countries.
RECOMMENDATIONS
## Recommendations

<table>
<thead>
<tr>
<th>National mechanisms</th>
<th>• Establish high-level multisectoral commissions</th>
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</thead>
<tbody>
<tr>
<td>Build capacity of health ministries</td>
<td>• Strategic leadership, engagement of stakeholders, implement policies and foster accountability</td>
</tr>
<tr>
<td>Prioritize prevention of overweight and obesity</td>
<td>• Life-course approach, create supportive environments, use fiscal policies and legislation</td>
</tr>
<tr>
<td>Strengthen health systems</td>
<td>• Enhance capacity of primary health care, national protocols for management, improve access to affordable medicines.</td>
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<tr>
<td>Address gaps in knowledge base</td>
<td>• Outcome evaluations, operational research</td>
</tr>
<tr>
<td>Surveillance and monitoring</td>
<td>• Collect, analyse and use representative data, develop and strengthen diabetes registries if feasible.</td>
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</table>
WHO response

**Prevention**
- Ending childhood obesity
- Fiscal policies, legislation
- Settings-based approaches

**Management**
- Clinical guidelines
- Update of diagnostic criteria
- Diabetes registries

**Access to essential medicines**
- Monitor availability and price
- Strategic procurement
- Review and update WHO EML

**Surveillance**
- Risk factor surveys
- Country capacity and response
- Mortality estimates

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