

Health Strategies for NCD prevention and Control

**International Symposium on Research, Policy & Action to Reduce the
Burden of Non-Communicable Diseases**

*Faculty of Medicine, Gadjah Mada University,
Yogyakarta, 26-27 September 2013*



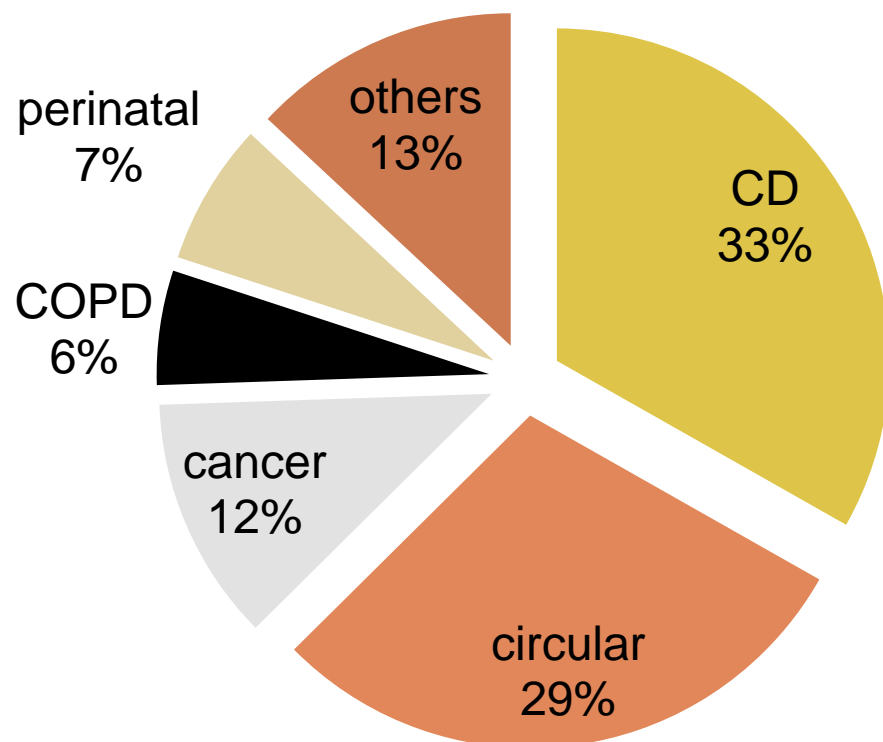
OUTLINE

- Background
- Disease burden
- Intervention Strategy
- Conclusion and the way forward



BACKGROUND

GLOBAL MORTALITY 1997



The death from NCD > CD and perinatal conditions.

The need to effective public health response was recognized in WHA 1998.

the 53rd World Health Assembly endorsed the Global Strategy for the Prevention and Control of NCD

WHO's global road map on NCDs

2000

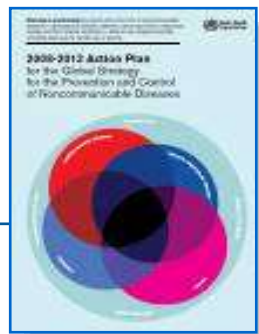
Global Strategy for the Prevention and Control of Noncommunicable Diseases

2003



Global Strategy on Diet, Physical Activity and Health

2004



Action Plan 2008-2013 on the Global Strategy for the Prevention and Control of NCDs

2008



Global Strategy to Reduce the Harmful Use of Alcohol

2009



WHO Global Status Report on NCDs

2010



Political Declaration on NCDs



2013

2020

WHO Action Plan for the Prevention and Control of NCDs for 2013-2020

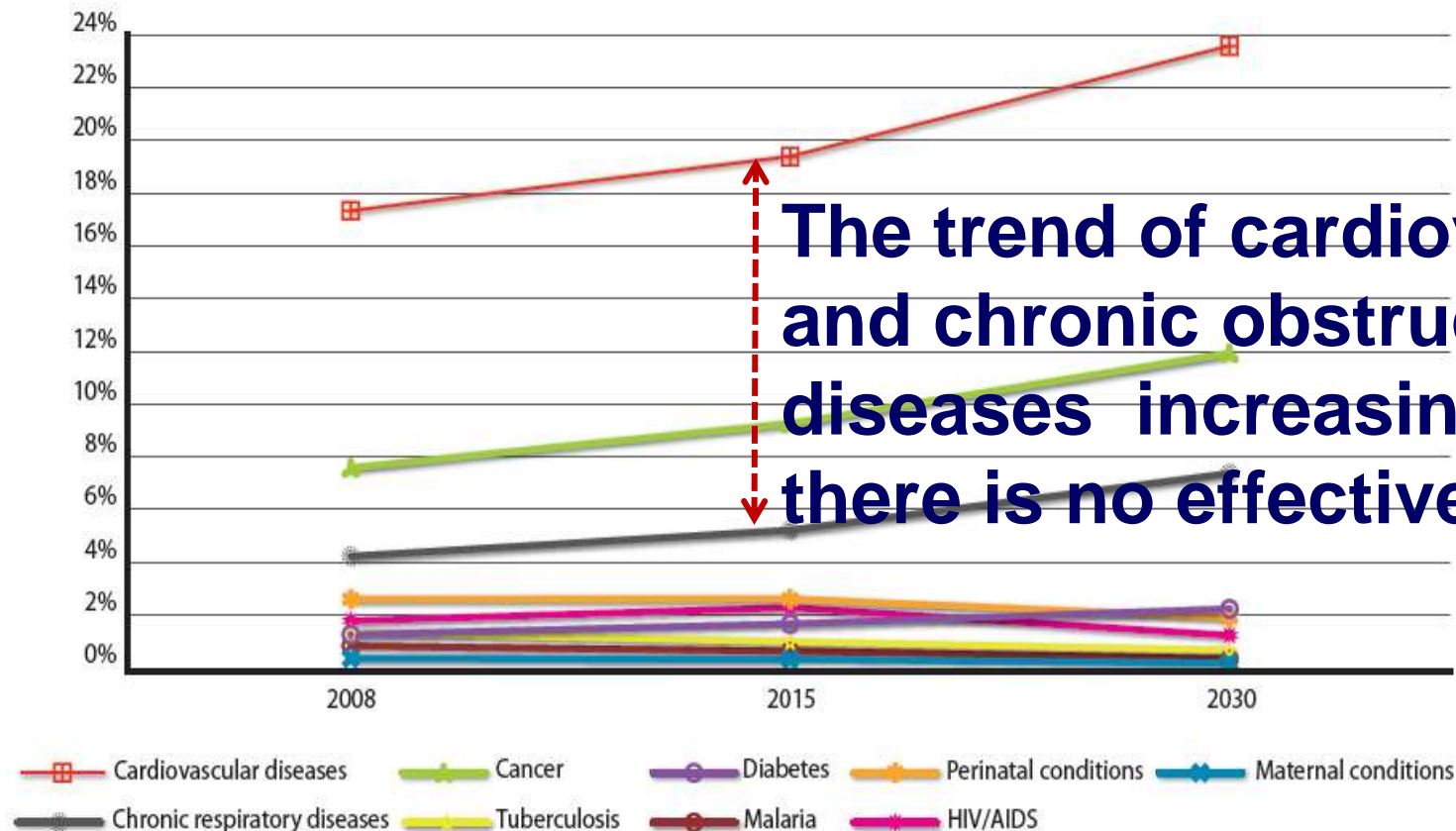


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- Intervention Strategy
- Action Plan and Indicators
- Conclusion and the way forward

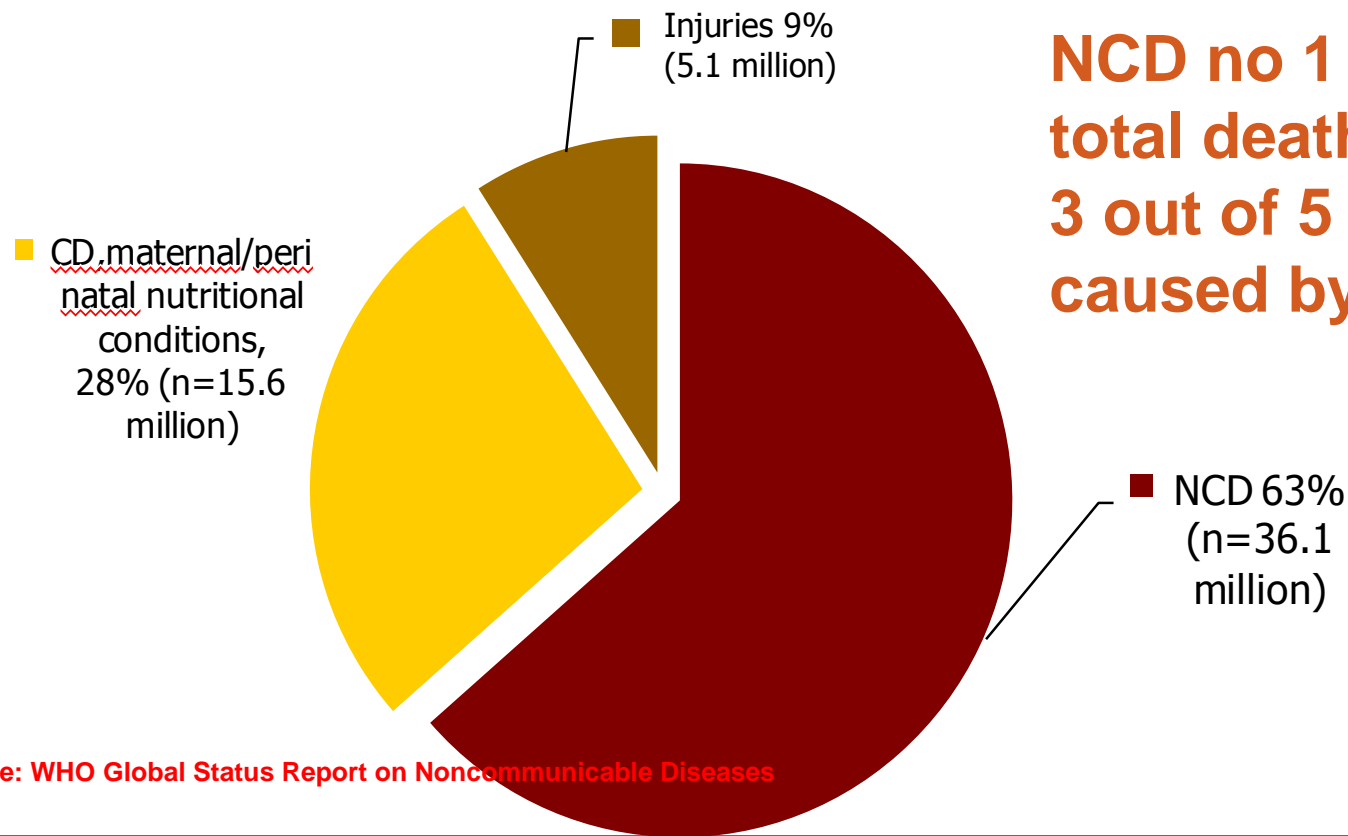


Projected mortality trends 2008-2030



Global Mortality by cause 2008

Percentage of deaths, by cause,
worldwide, 2008

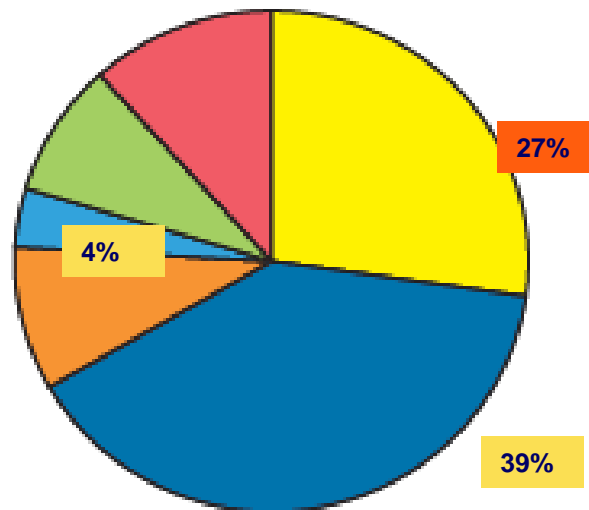


NCD no 1 killer, accounted 63% of total death
3 out of 5 global death was caused by NCD

Source: WHO Global Status Report on Noncommunicable Diseases 2010

Proportion of Global NCD deaths, by cause 2008

% of global NCD deaths under the age of 70, by cause of death, 2008



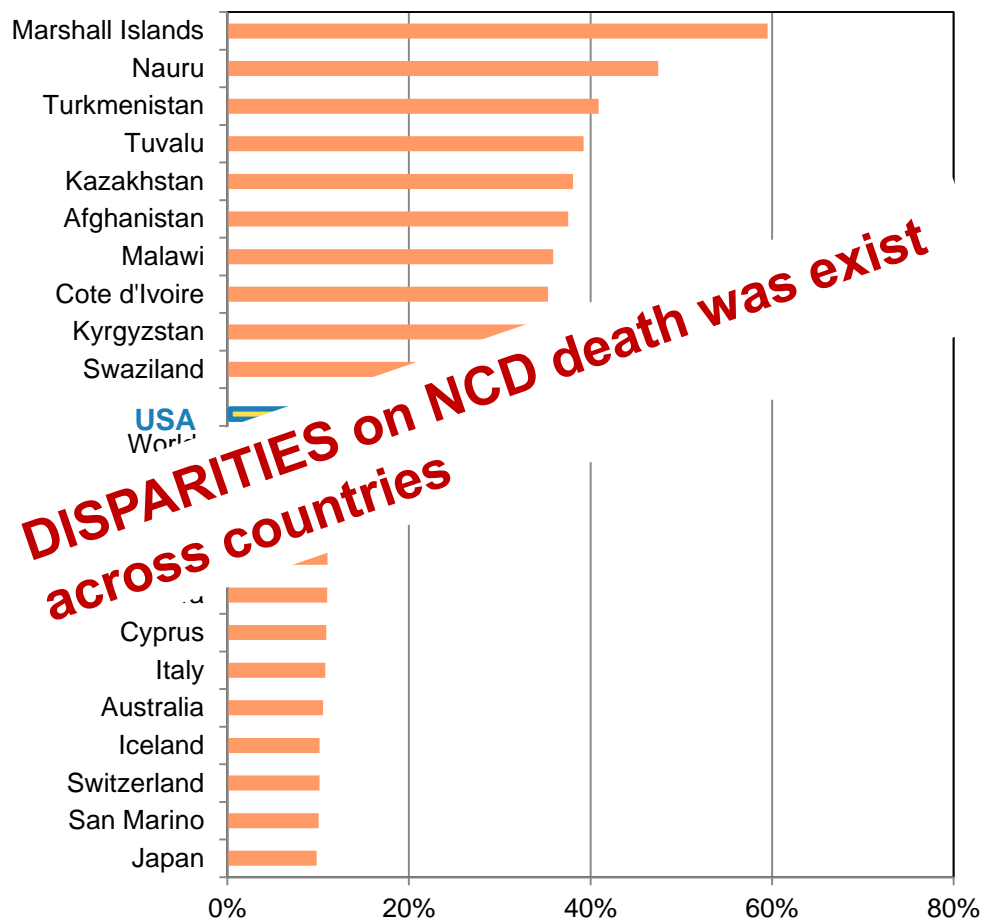
CARDIOVASCULAR disease was responsible for one third of NCD death

- Cancers
- Cardiovascular disease
- Chronic respiratory diseases
- Diabetes
- Digestive diseases
- Other noncommunicable diseases

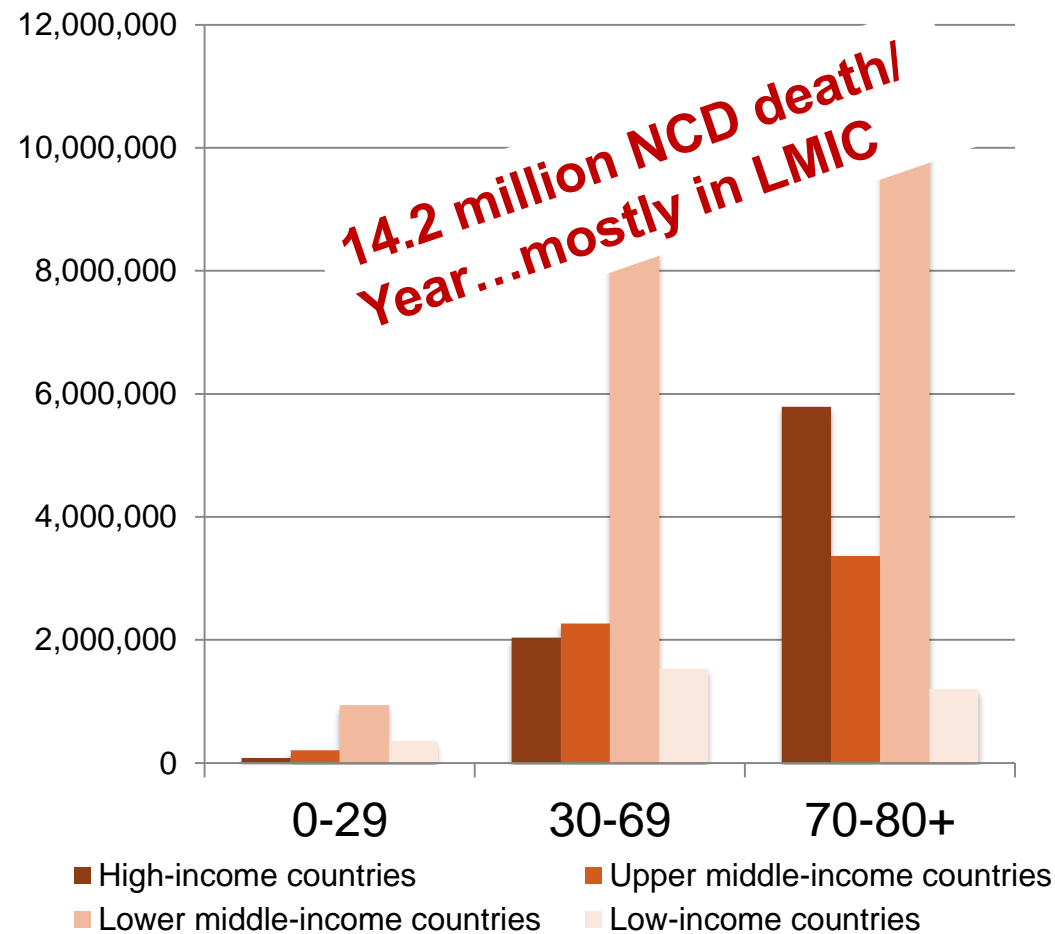
Source: WHO Global Status Report on Noncommunicable Diseases 2010

Global NCD Mortality

Probability of death from NCD worldwide, 2008

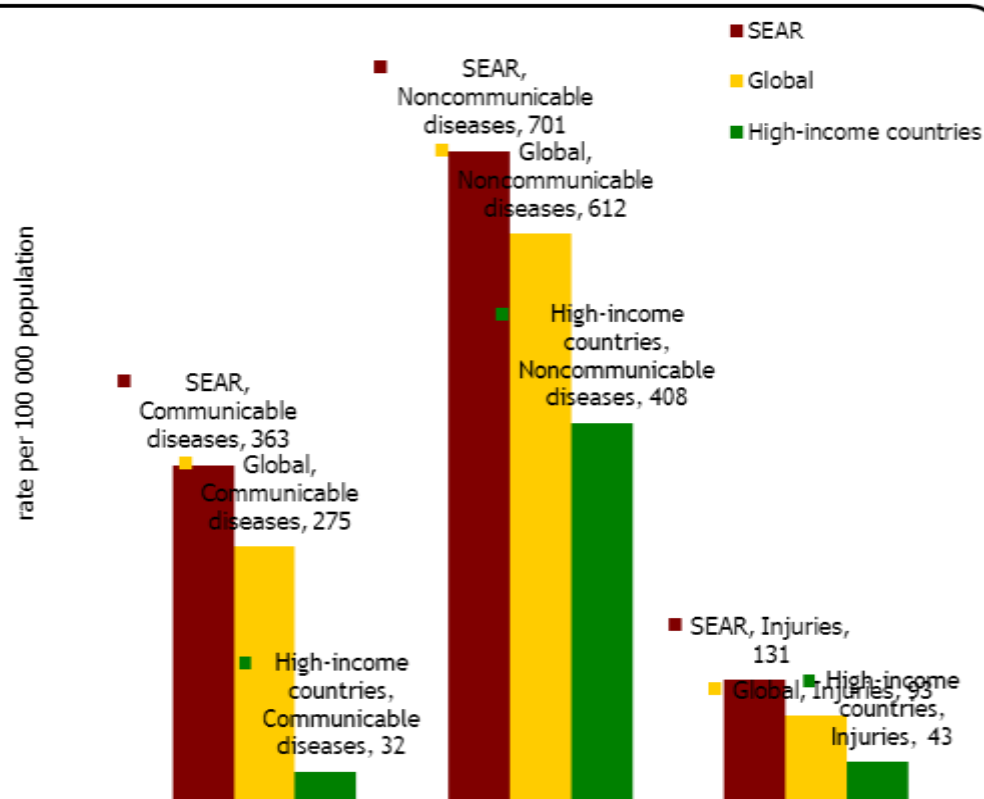


Percentage of deaths, by age group and Income country, worldwide, 2008



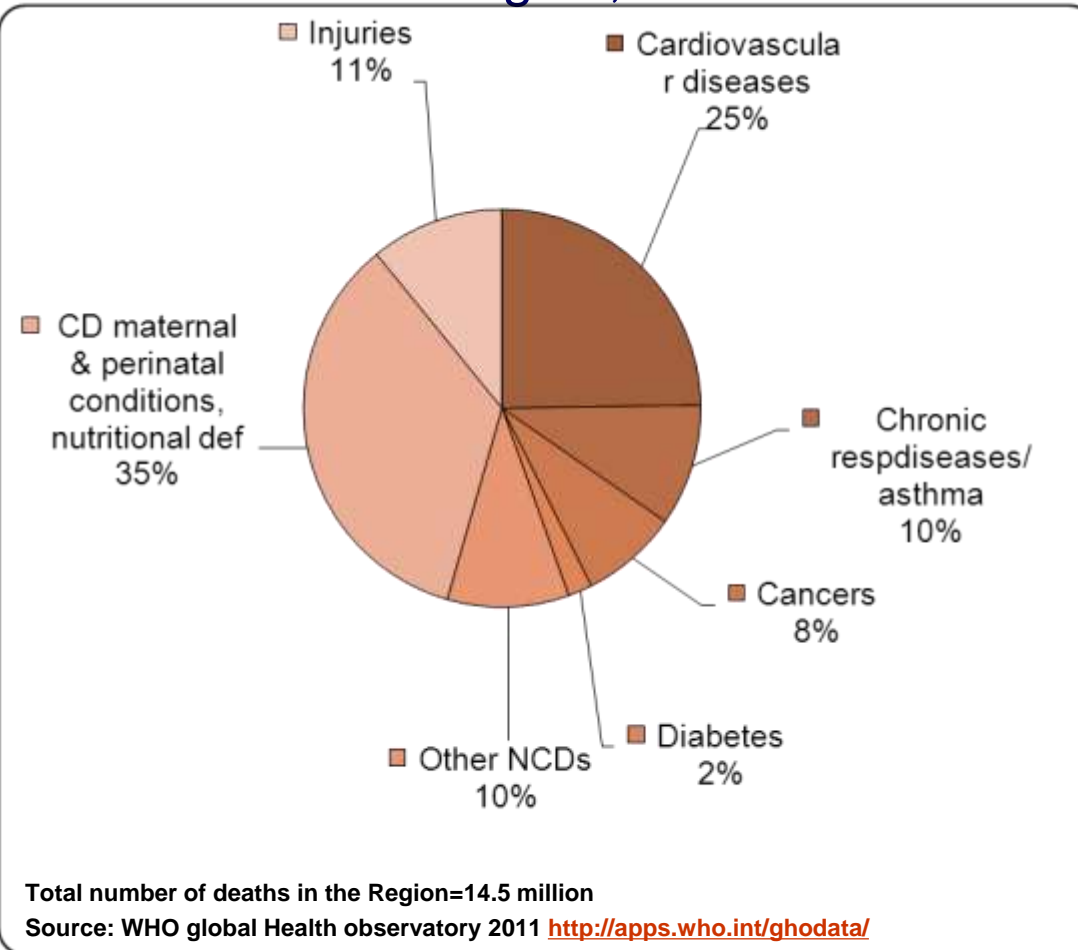
SEA NCD Mortality

Age standardized mortality rates per 100,000 population, 2008



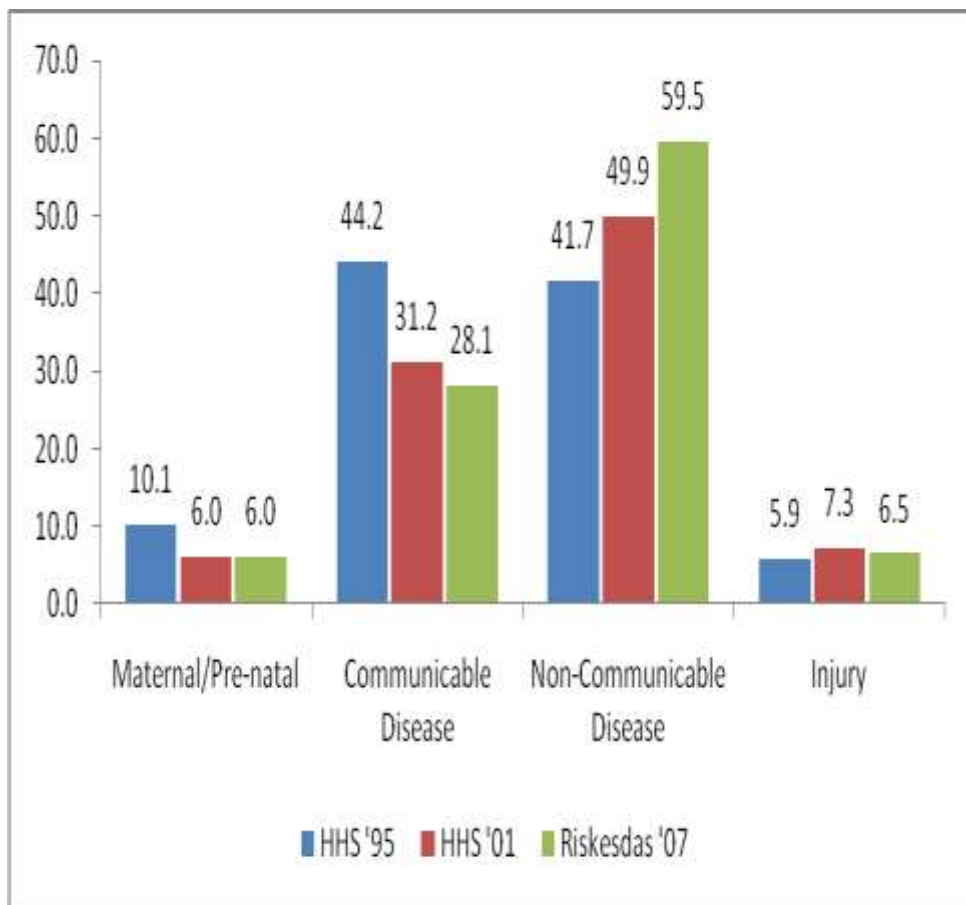
Dhillon et, al, *Int J Epidemiol.* 2012; 41:847-60.

Estimated proportion of deaths by cause, South-East Asia Region, 2008

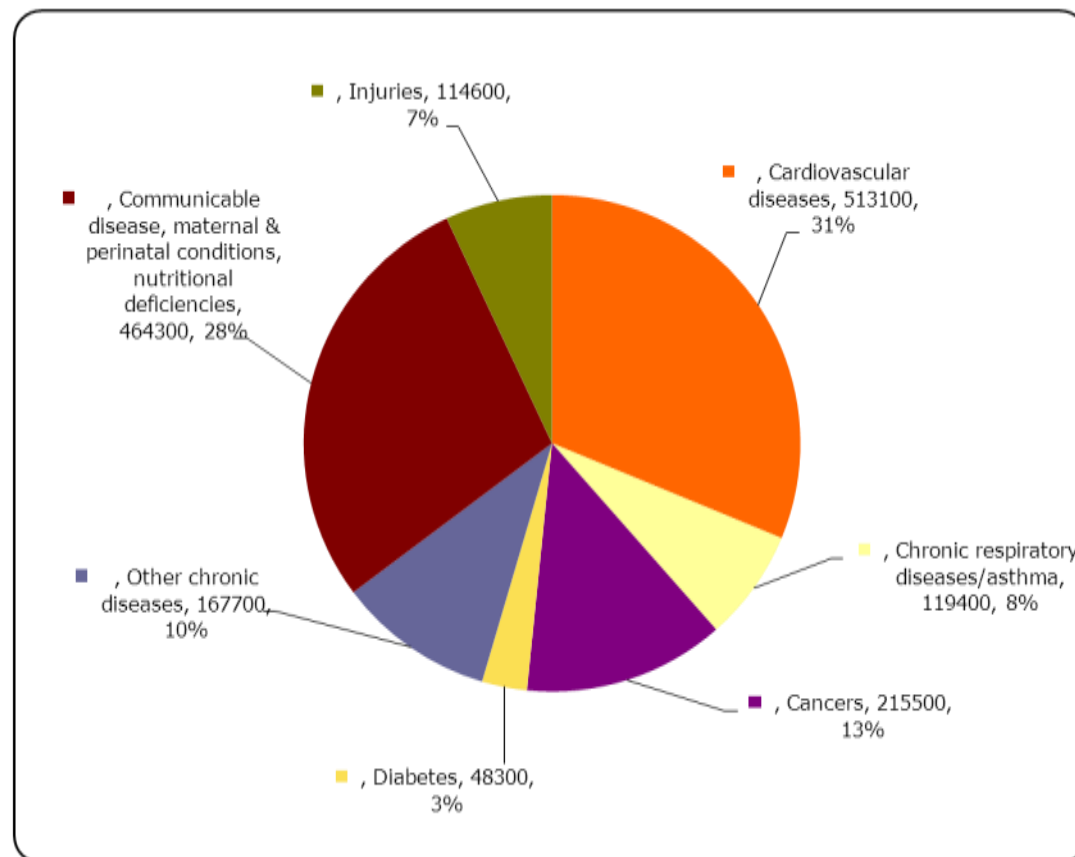


NCD Mortality- Indonesia

Distribution of Causes of Death, All Ages, Indonesia, 1995, 2001, 2007



Proportion of deaths by cause, Indonesia, 2008

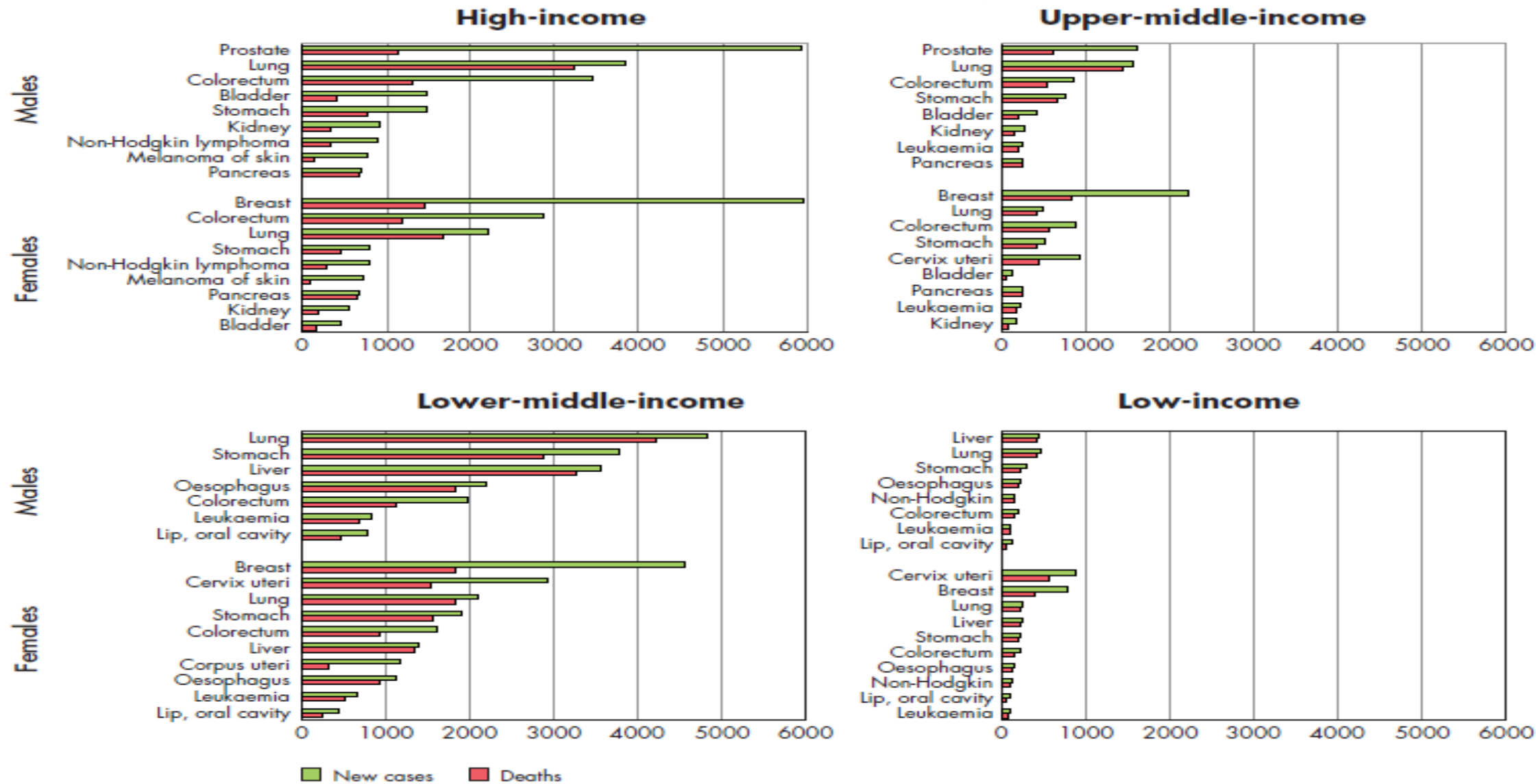


Source :Noncommunicable Diseases Country Profiles 2011

NCD Morbidity

- NCD morbidity data are important for the management of health-care systems and for planning and evaluation of health service delivery.
- Reliable data on NCD morbidity are unavailable in many countries.
- The most comprehensive morbidity data available relate to cancer and are available from population- or hospital-based cancer registries.
- Disease registries for diabetes, hypertension (raised blood pressure) and renal insufficiency exist in well-resourced settings, rather than entire populations.
- Data on the prevalence of diabetes and raised blood glucose are available from population-based surveys.

Estimated annual number of new cases and deaths for the 10 most common cancers, 2008

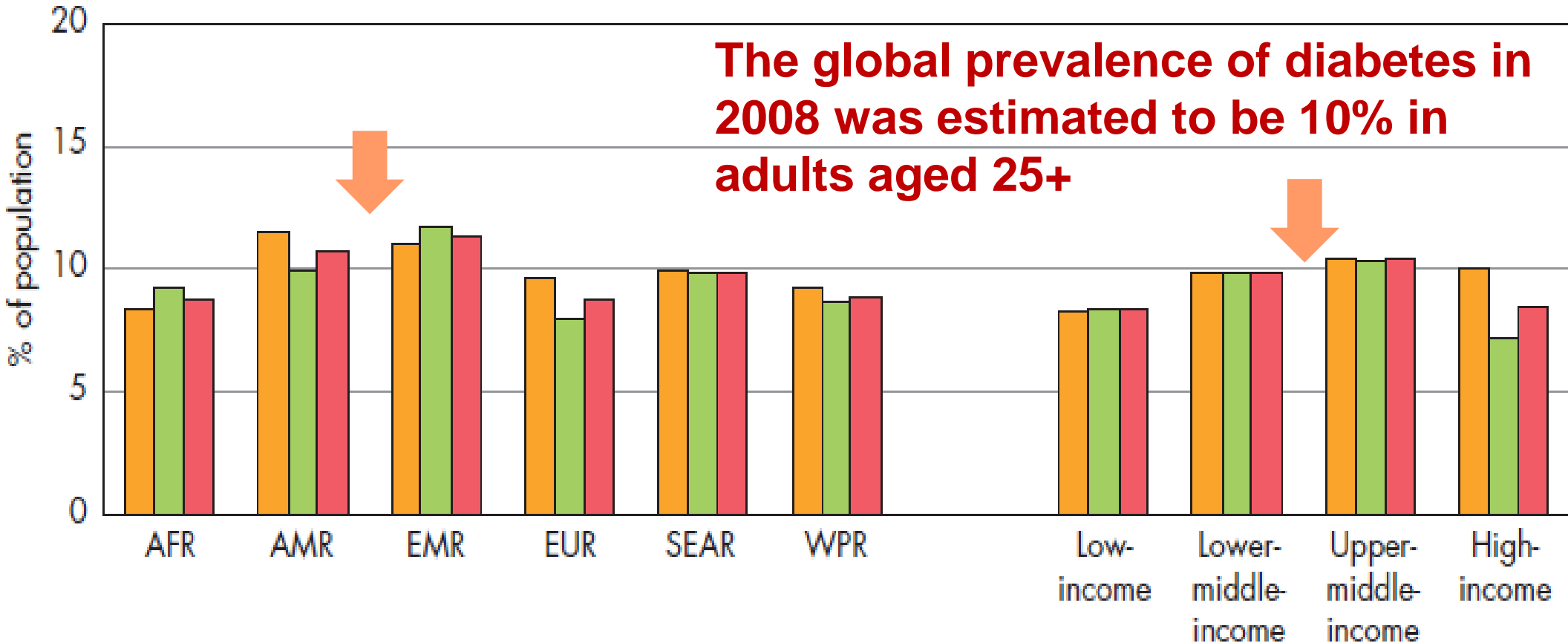


Estimated annual number of new cases and deaths for the 10 most common cancers, by World Bank income groups and by sex, 2008



World Health Organization

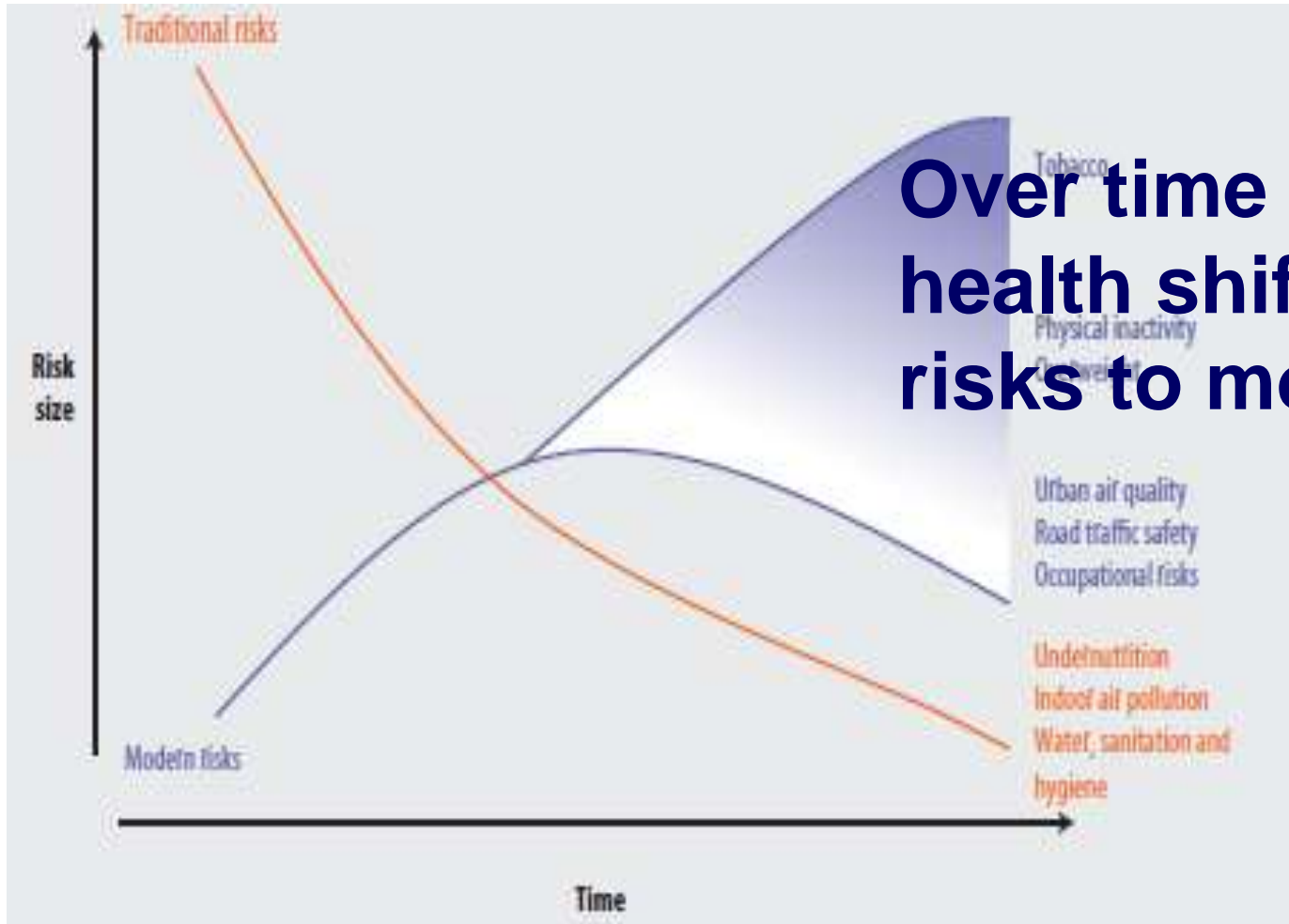
Age-standardized prevalence of diabetes in adults aged 25+ years, 2008



Age-standardized prevalence of diabetes in adults aged 25+ years, by WHO Region and World Bank income group, comparable estimates, 2008

Men Women Both sexes

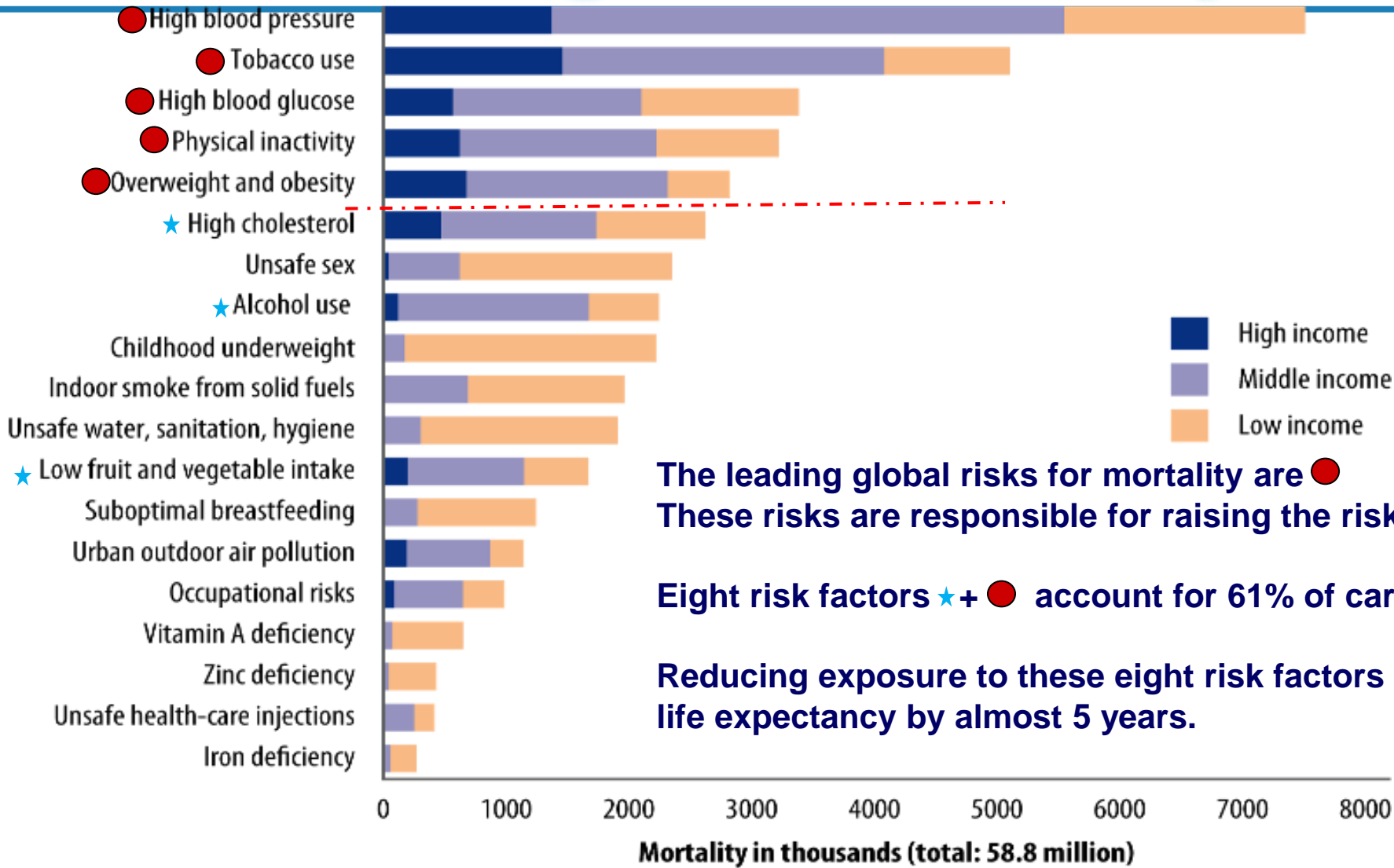
The risk



Over time major risks to health shift from traditional risks to modern risks

Source: WHO's report on "Global health risks"

Leading health risk for global mortality



The leading global risks for mortality are ●
 These risks are responsible for raising the risk of chronic diseases

Eight risk factors ★+ ● account for 61% of cardiovascular deaths.

Reducing exposure to these eight risk factors would increase global life expectancy by almost 5 years.

Source: WHO's report on "Global health risks"

PH burden is hidden and underestimated

Reported NCDs are only the tip of the iceberg

Risk factor burden

Behavioral risk factors

- physical inactivity
- unhealthy diet
- tobacco use
- harmful use of alcohol

Metabolic risk factors

- obesity
- Raised blood pressure
- Raised blood sugar

- raised cholesterol

SOCIAL DETERMINANT



unrecognized

Modified from the Iceberg of Disease in Problems and Progress in Medical Care, by Logan.

4 modifiable shared risk factors cause 4 major NCDs

		<u>Shared Risk Factors</u>			
		Tobacco use	Unhealthy diets	Physical inactivity	Harmful use of alcohol
Non-communicable diseases	Cardiovascular diseases	✓	✓	✓	✓
	Diabetes (Type II)	✓	✓	✓	✓
	Cancer	✓	✓	✓	✓
	Chronic respiratory disease	✓			

Other risk factors:

Environmental:

Air pollution, occupational exposure to carcinogens

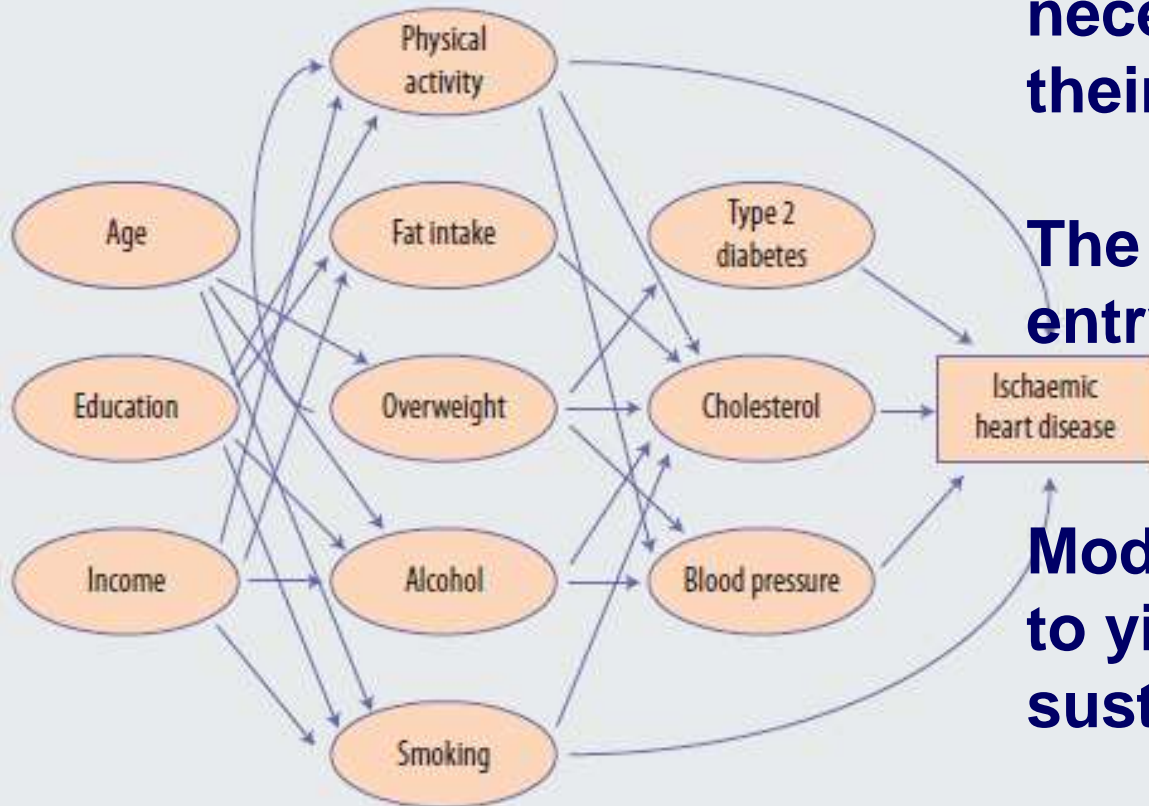
Infectious agents:

HBV, HPV, *H. pylori*



RISK FACTOR - Causal chain

Figure 1: The causal chain. Major causes of ischaemic heart disease are shown. Arrows indicate some (but not all) of the pathways by which these causes interact.



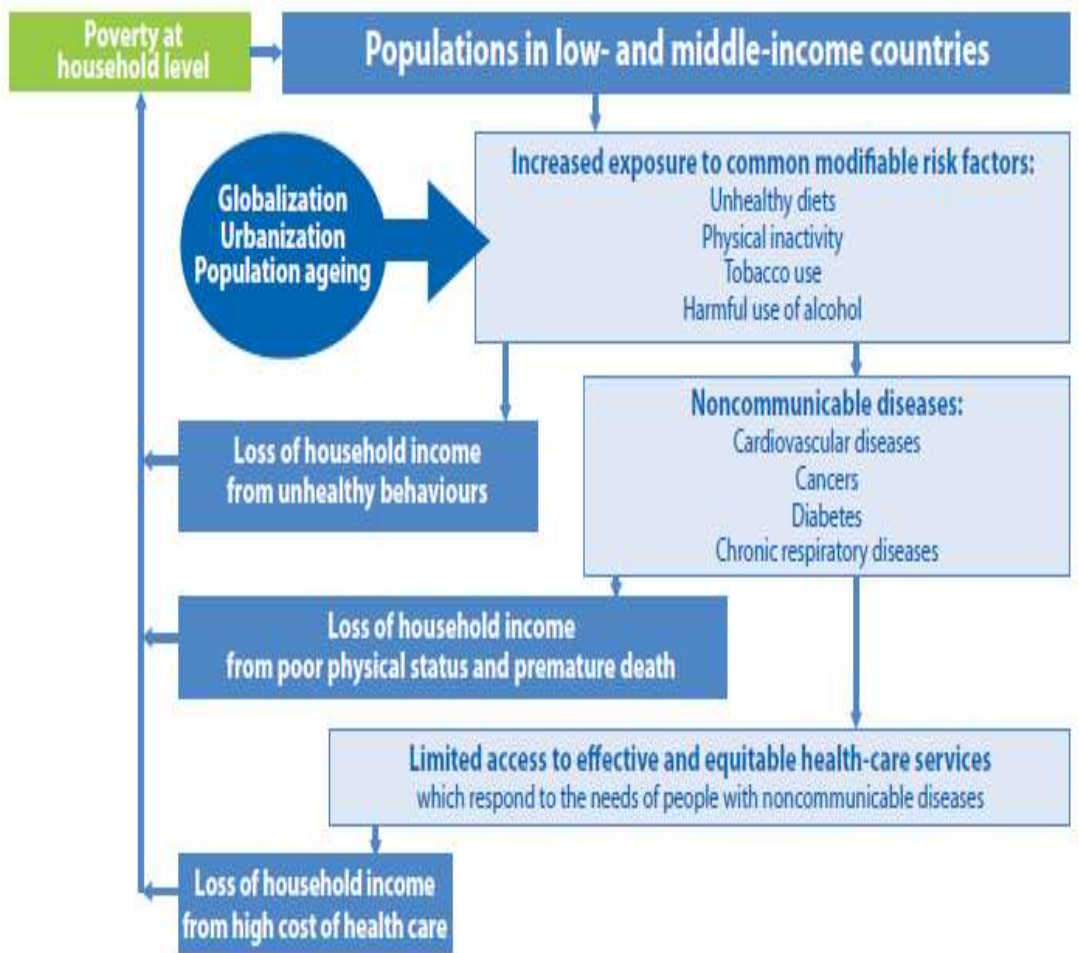
To prevent disease and injury, it is necessary to identify and deal with their causes –

The causal chain offers many entry points for intervention.

Modifying these have the potential to yield fundamental and sustained improvements to health

Source: WHO's report on "Global health risks"

NCD and Poverty



LMIC pop has more exposure to the Common RF, → more chance to suffer from NCD

Unhealthy behavior , cost of NCD treatment and limited access to effective and equitable health services lead to loss of HH income

If those who become sick or die is the main income earners, NCD can force the liquidation of family assets and loss of care and investment.

Source: WHO Global Status Report on Noncommunicable Diseases 2010

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Three pillars Global Strategy for prevention and control of NCD

Surveillance

Mapping the
epidemic of NCDs



Prevention

Reducing the level
of exposure to risk
factors

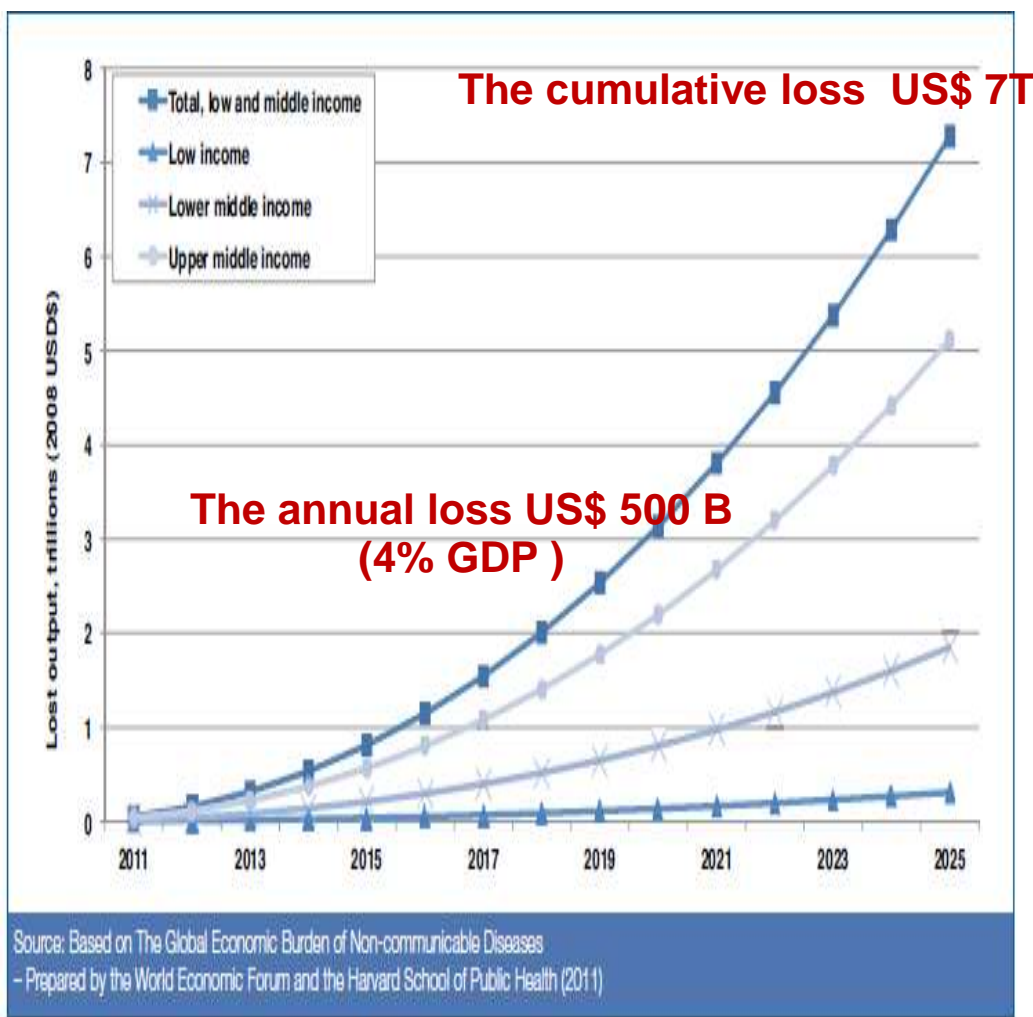


Management

Strengthen health
care for people with
NCDs



NCD loss 2011-2025 (LMICs)



The WHO's EPIC tool is used to quantify losses from NCD in LMIC,

Over the period 2011-2025, the cumulative lost output is projected to be more than US\$ 7 trillion .

The total burden is lowest in the low-income countries,

Reports are available at www.who.int/ncd

Best buys interventions

Best buy is interventions that are not only highly cost-effective but also feasible and appropriate to implement within the constraints of the local LMIC health system.

Risk factor / disease	Interventions
Tobacco use	<ul style="list-style-type: none">• Protect people from tobacco smoke• Warn about the dangers of tobacco• Enforce bans on tobacco advertising• Raise taxes on tobacco
Harmful use of alcohol	<ul style="list-style-type: none">• Enforce bans on alcohol advertising• Restrict access to retailed alcohol• Raise taxes on alcohol
Unhealthy diet	<ul style="list-style-type: none">• Reduce salt intake in food• Replace trans fat with polyunsaturated fat
Cardiovascular disease (CVD) and diabetes	<ul style="list-style-type: none">• Provide counselling and multi-drug therapy (including glycaemic control for diabetes mellitus) for people with 10-year CVD risk > 30%• Treat acute myocardial infarction (with aspirin)
Cancer	<ul style="list-style-type: none">• Hepatitis B vaccination to prevent liver cancer• Detection and treatment of precancerous lesions of the cervix and early-stage cervical cancer

Source: From Burden to “Best Buys”:

Reducing the Economic Impact of Non-Communicable Diseases in Low- and Middle-Income Countries

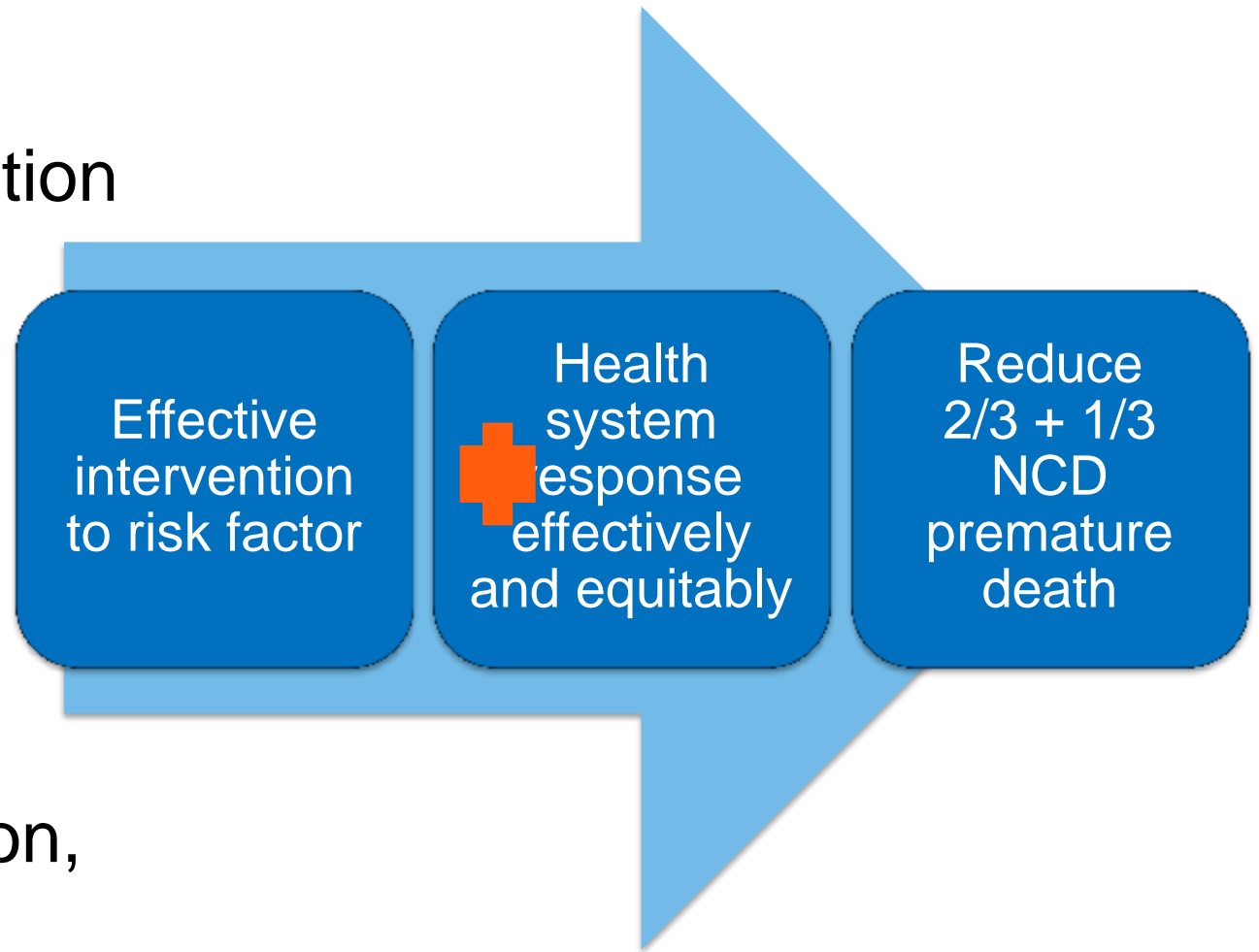


World Health
Organization

Low - Cost Solutions

MAJOR APPROACH

- Population wide prevention
- Individual primary – secondary prevention (PHC approach)
- Enabling strategies (Country led action, International Cooperation, Research, Monitoring)



High-risk strategy—based in primary health care

Addresses metabolic risk factors

**Early detection and reduction cardiovascular risk in moderate to high risk people to prevent strokes and heart attacks—
Package of Essential NCD interventions (PEN)**

**Cancer - early detection and treatment of precancerous lesions to prevent cervical cancer and hepatitis B
immunization to prevent liver cancers**

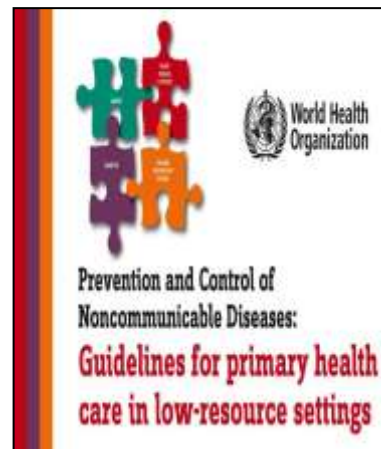
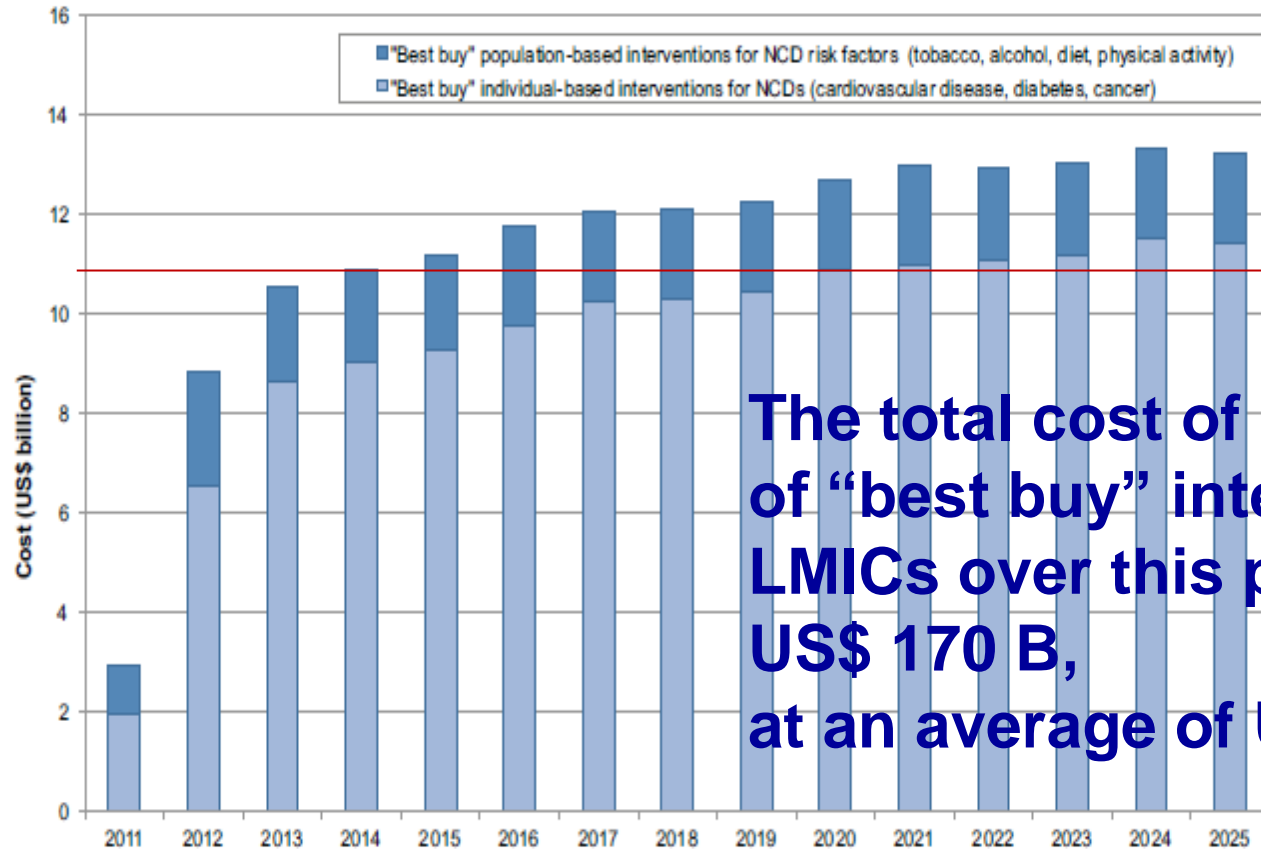


Table 1. Individual interventions in diabetes with evidence of efficacy (24)

Interventions with evidence of efficacy	Benefit
Lifestyle interventions for preventing type 2 diabetes in people at high risk	Reduction of 35–58% in incidence
Metformin for preventing type 2 diabetes for people at high risk	Reduction of 25–31% in incidence
Glycaemic control in people with HbA1c greater than 9%	Reduction of 30% in microvascular disease per 1 percent drop in HbA1c
Blood pressure control in people whose pressure is higher than 130/80mmHg	Reduction of 35% in macrovascular and microvascular disease per 10 mmHg drop in blood pressure
Annual eye examinations	Reduction of 60 to 70% in serious vision loss
Foot care in people with high risk of ulcers	Reduction of 50 to 60% in serious foot disease
Angiotensin converting enzyme inhibitor use in all people with diabetes	Reduction of 42% in nephropathy; 22% drop in cardiovascular disease

Loss vs Action

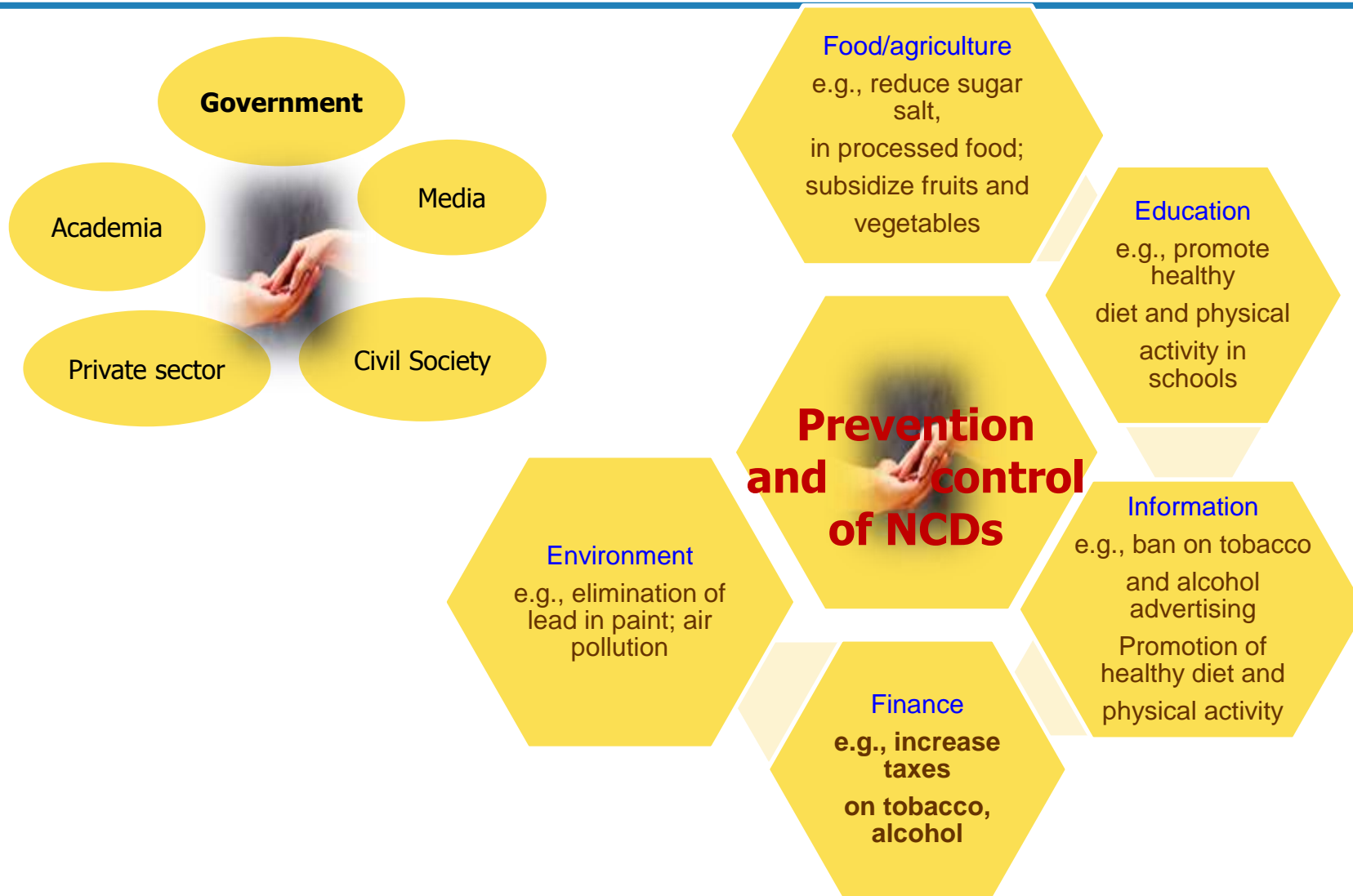


The total cost of implementing the full set of “best buy” interventions across all LMICs over this period is estimated to be US\$ 170 B, at an average of US\$ 11.4 billion per year

Source: Scaling up action against noncommunicable diseases: How much will it cost? – Prepared by the World Health Organization (2011)

Reports are available at www.who.int/ncd

PARTNERSHIP



WHO's global road map on NCDs

2000

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Political Declaration on NCDs



2013
2020

WHO Action Plan for the Prevention and Control of NCDs

Key challenges

- Double disease burden
 - Communicable disease and NCDs
 - Over nutrition and under nutrition
- Low government budget for health
- High out of pocket expenditure for health
- Weak health systems
- Lack of enforcement of laws—laws on paper only
- Inadequate information system



Global NCD Action Plan 2013-2020

Vision:

A world in which all countries and partners sustain their political and financial commitments **to reduce the avoidable global burden and impact of NCDs**, so that populations reach the **highest attainable standards of health and productivity at every age** and those diseases are **no longer a barrier to socioeconomic development** .

Overarching principles

Human rights	UHC, equity and gender equality	Life-course approach	Evidence-based practice	Empowerment of people and communities
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Goal:

To **reduce the burden** of preventable morbidity and disability and avoidable mortality due to NCDs

“We know what works, we know what it costs and we know that all countries are at risk. We have an Action Plan to avert millions of premature deaths and help promote a better quality of life for millions more.”

Regional Action Plan

Goal: To reduce preventable morbidity, avoidable disability and premature mortality due to NCDs in the South-East Asia Region

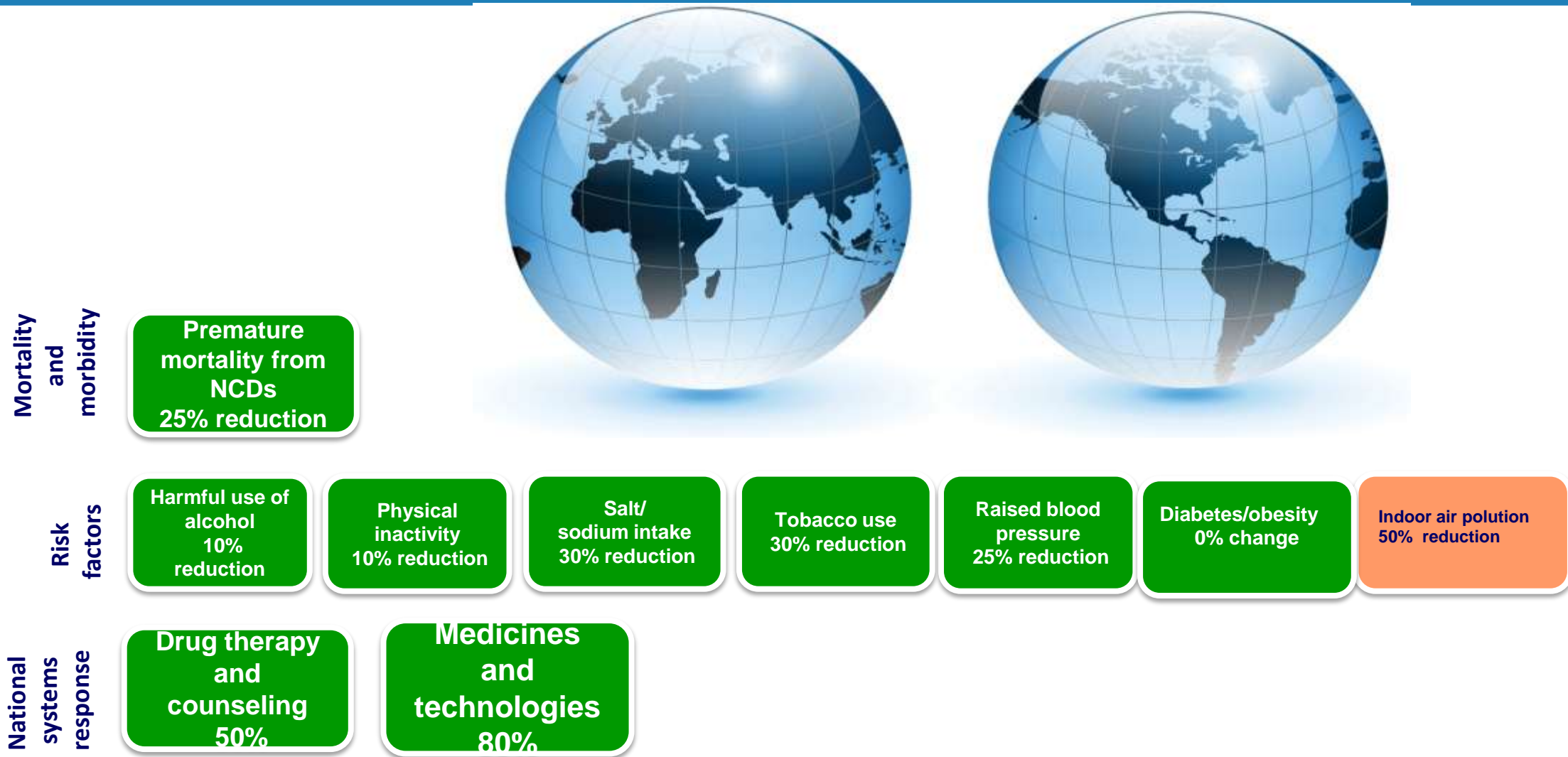
Guiding Principle

- Focus on Equity
- Multi-sectoral/stakeholder actions and involvement
- Life-course approach
- Pop. based and individual approaches
- Empowerment
- Health system strengthening
- Universal health coverage
- Evidence-based strategies
- Management of real, perceived or potential conflicts of interest

Priority Action



Set of 9/10 voluntary global-regional targets



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Conclusion

- NCD's are the biggest global killers today and nearly 80% occurred in low- and middle-income countries,
- Population growth and ageing, economic transition and resulting changes in behavioral, occupational and environmental risk factors.
- The NCD epidemic has a serious negative impact on human development and reduce productivity and contribute to poverty.
- NCDs create a significant burden on health systems and a growing economic burden on country economies.



Conclusion

- High quality NCD risk factor surveillance is possible
- A surveillance framework that monitors exposures (risk factors and determinants), outcomes (morbidity and mortality) and health-system responses (interventions and capacity) is essential.
- The majority of non communicable diseases can be averted through interventions and policies that reduce major risk factors.
- Low cost intervention is available , combine a range of evidence-based approaches Interventions have better results.
- Comprehensive prevention strategies must emphasize the need for sustained interventions over time.

The way forward

- Global and regional momentum generated for NCDs
- It is now important to translate commitments to actions
- Countries should develop national multisectoral action plans for prevention and control of NCDs with
 - Full involvement of all stakeholders
 - Clear roles and responsibilities
 - Specific indicators and targets for accountability
 - Realistic budget

It is Now Time for Action



The Way Forward

- Multisectoral partnerships
- Equity and universal coverage
- Life course approach
- Health promotion and disease prevention
- Strengthened health systems
- Community empowerment
- Evidence-based cost-effective approaches

Guiding Principles for Action

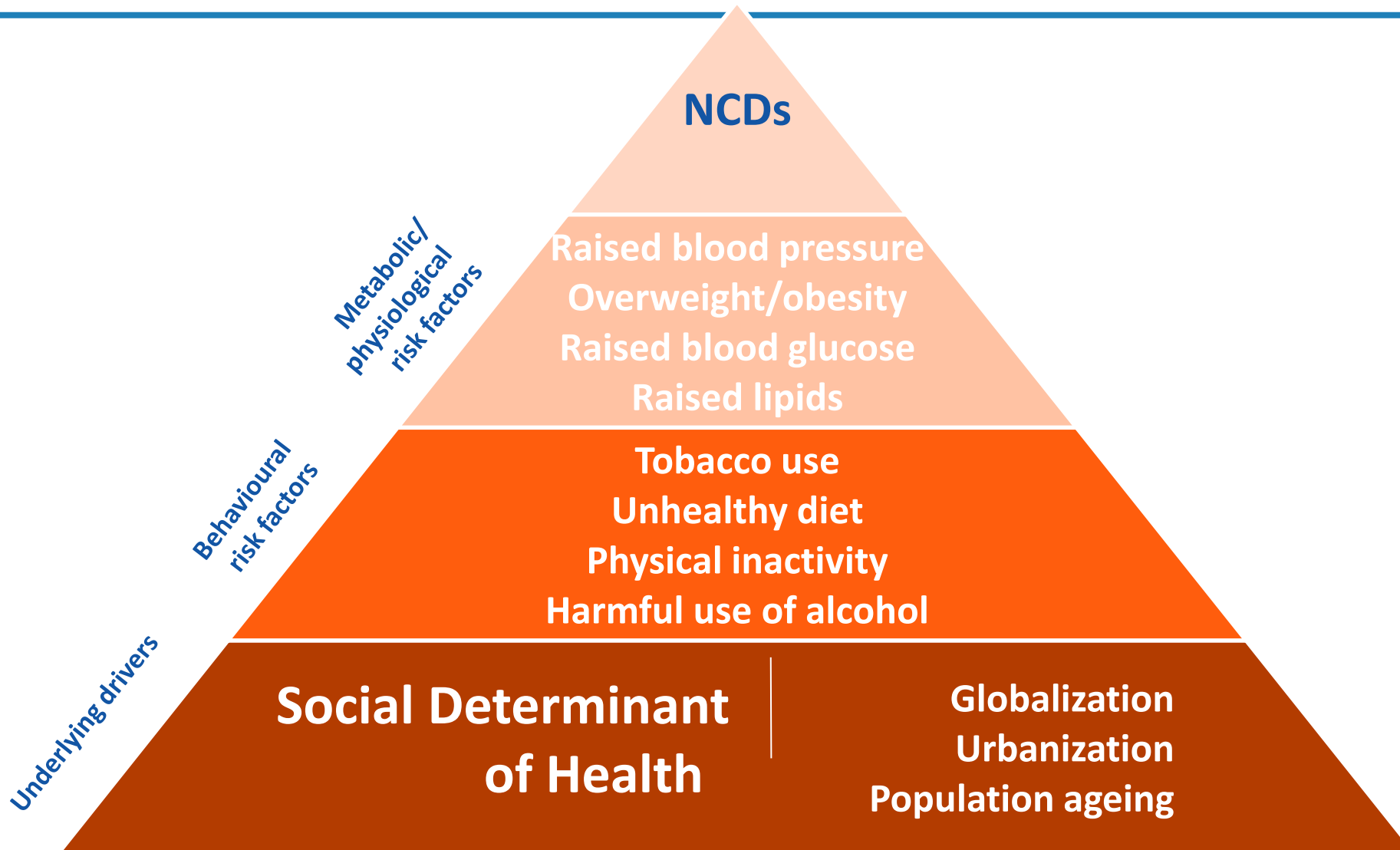


Thank You

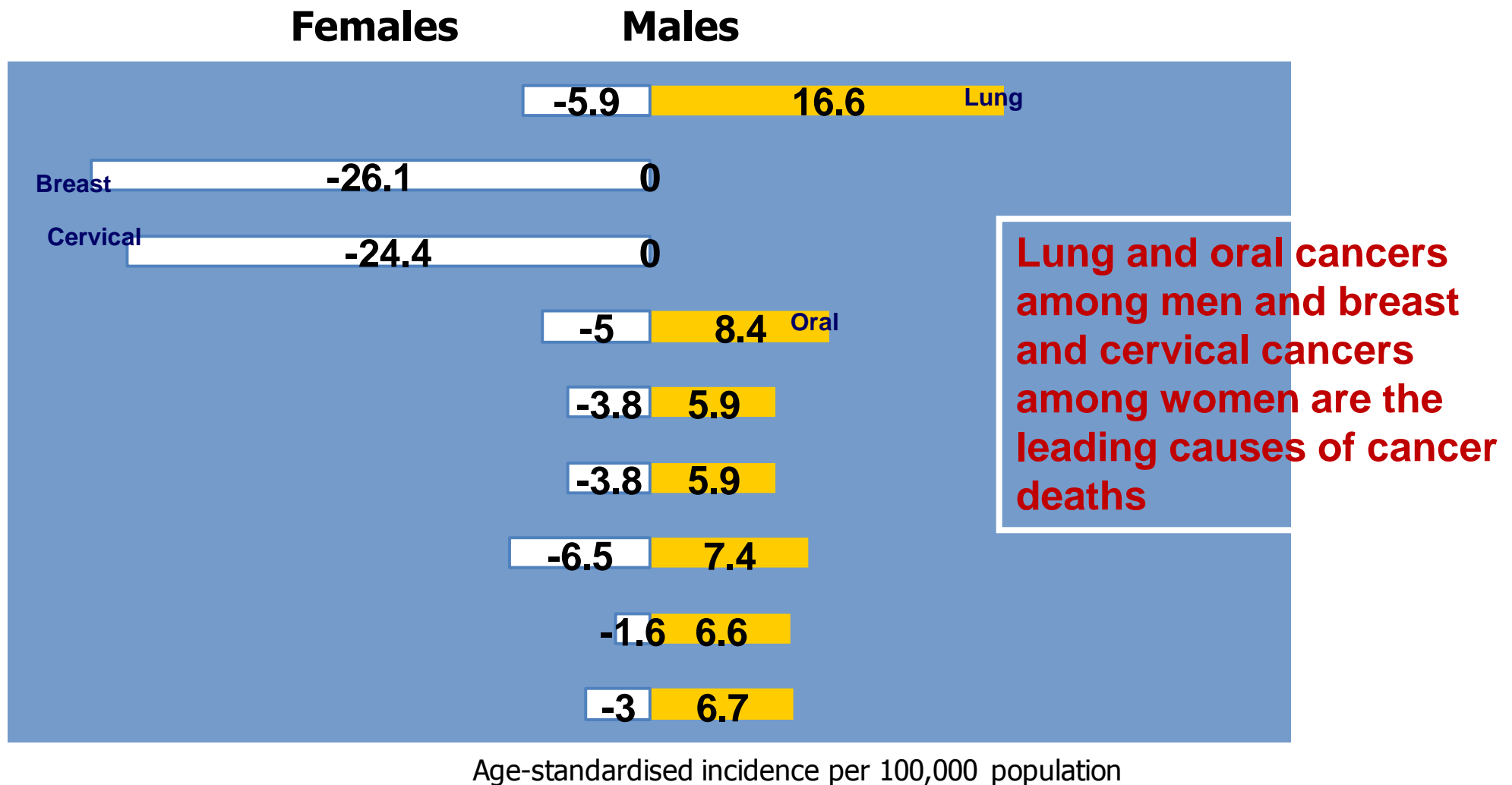


Terima kasih

Root causes of NCD



Incidence of selected cancers, by sex, South-East Asia Region, 2008



Source: Globocan, 2008

Tobacco Use

- Almost 6 million people die from tobacco use each year, both from direct tobacco use and second-hand smoke.
- By 2020, this number will increase to 7.5 million, accounting for 10% of all deaths.
- Smoking is estimated to cause about 71% of lung cancer, 42% of chronic respiratory disease and nearly 10% of cardiovascular disease.
- The highest incidence of smoking among men is in lower-middle-income countries; for total population, smoking prevalence is highest among upper-middle-income countries.

Harmful use of Alcohol

- Approximately 2.3 million die each year from the harmful use of alcohol, accounting for about 3.8% of all deaths in the world.
- More than half of these deaths occur from NCDs including cancers, cardiovascular disease and liver cirrhosis.
- While adult per capita consumption is highest in high-income countries, it is nearly as high in the populous upper-middle-income countries



Unhealthy Diet

- Adequate consumption of fruit and vegetables reduces the risk for cardiovascular diseases, stomach cancer and colorectal cancer.
- Most populations consume much higher levels of salt than recommended by WHO for disease prevention; high salt consumption is an important determinant of high blood pressure and cardiovascular risk.
- High consumption of saturated fats and trans-fatty acids is linked to heart disease. Unhealthy diet is rising quickly in lower-resource settings.
- Available data suggest that fat intake has been rising rapidly in lower-middle-income countries since the 1980s.

Hypertension - Hypercholesterol

- Raised blood pressure is estimated to cause 7.5 million deaths, about 12.8% of all deaths.
- It is a major risk factor for cardiovascular disease.
- The prevalence of raised blood pressure is similar across all income groups, though it is generally lowest in high-income populations.
- Raised cholesterol is estimated to cause 2.6 million deaths annually; it increases the risks of heart disease and stroke.
- Raised cholesterol is highest in high-income countries

Physical inactivity

- Approximately 3.2 million people die each year due to physical inactivity.
- People who are insufficiently physically active have a 20% to 30% increased risk of all-cause mortality.
- Regular physical activity reduces the risk of cardiovascular disease including high blood pressure, diabetes, breast and colon cancer, and depression.
- Insufficient physical activity is highest in high-income countries, but very high levels are now also seen in some middle-income countries especially among women.



Cancer

- At least 2 million cancer cases per year, 18% of the global cancer burden, are attributable to a few specific chronic infections, and this fraction is substantially larger in low-income countries.
- The principal infectious agents are human papillomavirus, Hepatitis B virus, Hepatitis C virus and *Helicobacter pylori*.
- These infections are largely preventable through vaccinations and measures to avoid transmission, or treatable.
- For example, transmission of Hepatitis C virus has been largely stopped among high-income populations, but not in many low-resource countries.

WHO EPIC TOOL

Box 1: Estimating economic losses due to ill health: The WHO EPIC tool

The EPIC tool was developed by the World Health Organization to simulate the economic impact of diseases on aggregate economic output². EPIC links the value of economic output to quantities of labour and capital inputs, as well as to technology. The EPIC model adjusts labour and capital inputs according to population health. Namely, labour is diminished by disability and death caused by NCDs. Capital is also reduced because costs of screening, treatment and care claim resources that would otherwise be available for public and private investment. The EPIC model predicts losses caused by different health conditions in terms of their effect on the value of economic output.

