



Introduction of NCDs prevention & control

- **Objectives :**

- 1- The epidemiology of non-communicable diseases
- 2- Risk factors for non-communicable diseases
- 3- Overall framework and common preventive strategies against non-communicable diseases

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- **Resources :**

Slides.

Doctor's notes.

Definition & Epidemiology of NCDs

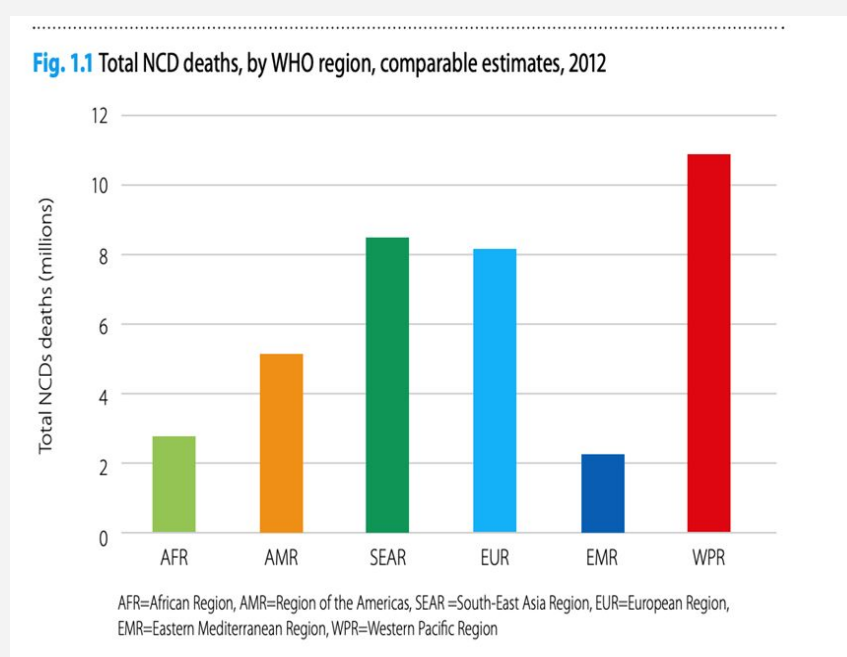
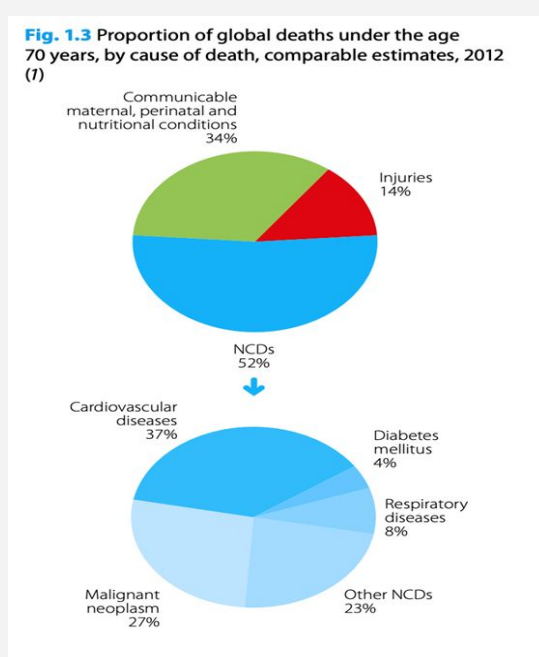
Non-communicable diseases are all impairments or deviations from the normal, which have one or more of the following characteristics;

- Are permanent
- Leave residual disability
- Caused by non-reversible pathological alterations
- Require special training of the patient for rehabilitation
- May be expected to require a long term supervision

They are:

1. Non infectious
2. Very common
3. Chronic

- Noncommunicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally.
- Each year, 15 million people die from a NCD between the ages of 30 and 69 years; over 85% of these "premature" deaths occur in low- and middle-income countries.
- Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.0 million), respiratory diseases (3.9million), and diabetes (1.6 million).
- These 4 groups of diseases account for over 80% of all premature NCD deaths.
- **Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets** all increase the risk of dying from a NCD. *If you can control these 4, you control the NCDs.*
- Detection, screening and treatment of NCDs, as well as palliative care, are key components of the response to NCDs



80% of chronic disease deaths occur in low & middle income countries

Injuries are part of NCDs because it may lead to permanent disability

Risks are increasing

Reality:

chronic diseases are concentrated among the poor

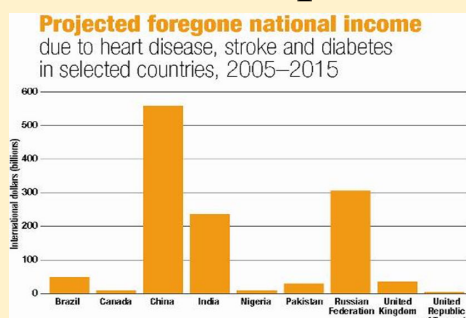
almost half in people under age 70 years

chronic diseases affect men and women almost equally
 Years ago, breast cancer is the most common type of cancer and female but nowadays like cancer is also common in females.

80% of premature heart disease, stroke and type 2 diabetes is preventable, 40% of cancer is preventable

inexpensive and cost-effective interventions exist

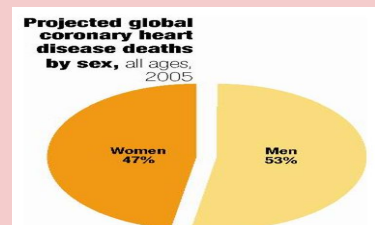
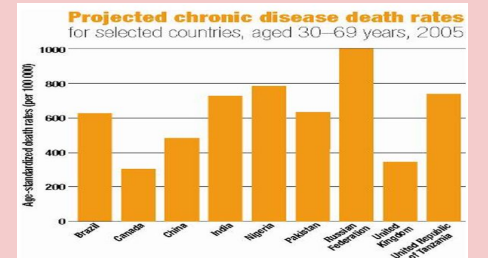
The economic impact: billions



misunderstanding

MISUNDERSTANDING
 CHRONIC DISEASES MAINLY AFFECT RICH PEOPLE

MISUNDERSTANDING
 CHRONIC DISEASES MAINLY AFFECT OLD PEOPLE



MISUNDERSTANDING
 CHRONIC DISEASES AFFECT PRIMARILY MEN

MISUNDERSTANDING
 CHRONIC DISEASES CAN'T BE PREVENTED

MISUNDERSTANDING
 CHRONIC DISEASE PREVENTION AND CONTROL IS TOO EXPENSIVE

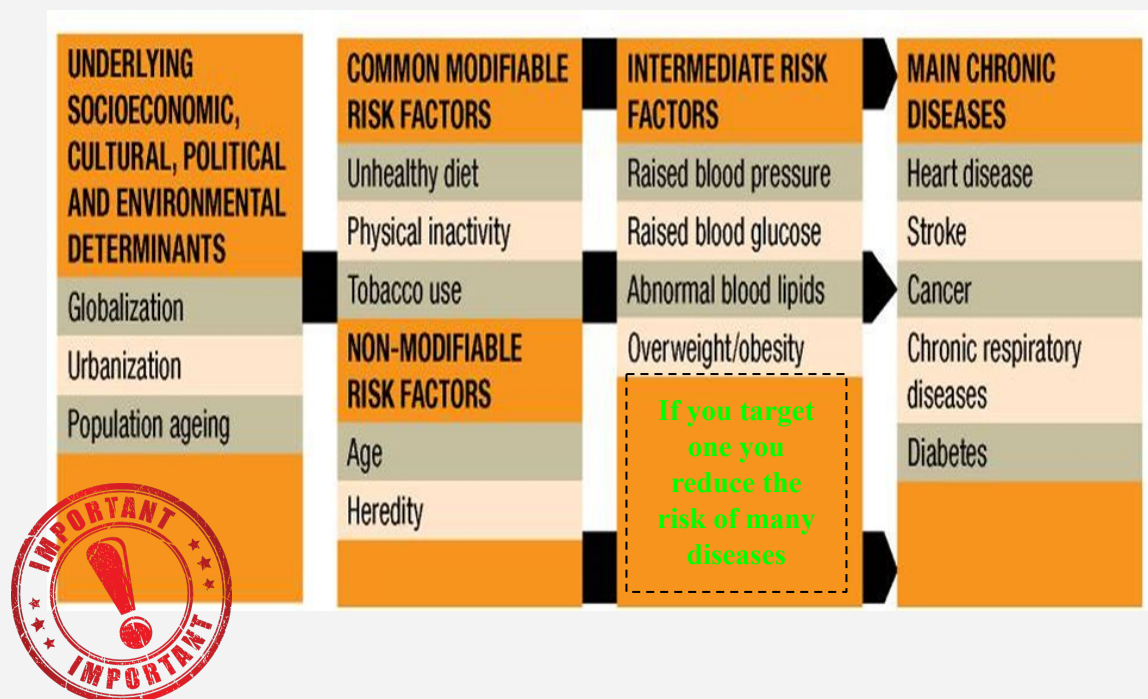
non-communicable diseases

Examples:-

- Hypertensive Heart Diseases
- Chronic Obstructive diseases
- Coronary Heart Diseases
- Mental Retardation
- Schizophrenia
- Peptic Ulcer - Arthritis
- Blindness - Cancer
- Diabetes - Stroke

Blindness can be secondary to DM or HTN

Causes of Non-communicable diseases



Modifiable behavioural risk factors

Modifiable behaviours, such as tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol, all increase the risk of NCDs.

Doctor said: read it

- Tobacco accounts for over 7.2 million deaths every year (including from the effects of exposure to second-hand smoke)
- 4.1 million annual deaths have been attributed to excess salt/sodium intake
- More than half of the 3.3 million annual deaths attributable to alcohol use are from NCDs, including cancer
- 1.6 million deaths annually can be attributed to insufficient physical activity

Metabolic risk factors

Metabolic risk factors contribute to four key metabolic changes that increase the risk of NCDs:

- Raised blood pressure
- Overweight/obesity
- Hyperglycaemia (high blood glucose levels) and
- Hyperlipidaemia (high levels of fat in the blood)

Hyperglycemia can lead to hyperlipidemia which lead to atherosclerosis

- In terms of attributable deaths:
 1. Elevated blood pressure (Attributable risk is 19%)
 2. Overweight and obesity
 3. Raised blood glucose.

Risk factors



Modifiable	Non Modifiable
<ul style="list-style-type: none">● Cigarette smoking● High Blood pressure● Elevated serum Cholesterol● Diabetes● Lifestyle changes (dietary patterns, physical activity)● Stress factors● Alcohol abuse	<ul style="list-style-type: none">● Age● Sex● Family Hx● Genetic factors● Personality <i>Type A personality</i>● Race

The objectives of Integrated Chronic Disease Prevention and Control Programme are:

- ★ To strengthen prevention and control of chronic noncommunicable diseases by tackling the major risk factors, focusing on WHO's four priority non-communicable diseases - cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases, and underlying determinants of health.
- ★ To reduce premature mortality and morbidity.
- ★ To improve quality of life, with particular focus on developing countries.

Framework for NCD prevention

Prevention

- Primary prevention **Vaccination is the best example**
 - Population Strategy e.g: in DM, hepatitis virus (vaccine at birth)
 - High Risk strategy e.g: Cancer (PAP smear)
- Secondary prevention e.g: Mammogram, PAP smear (can also be 1ry if you detect precancerous lesions)
- Tertiary prevention (limiting disability) e.g: pain in cancer pts, diabetic foot rehab.

Population Strategy

- Dietary Changes
- Blood pressure control
- Physical activity (weight reduction)
 - specially children
- Behavioral change reduction of stress & Smoking cessation
- Self care
- Health education

High risk approach

- Identify Risk: Identify high risk people and families eg those who smoke, and have high serum cholesterol.
- Specific Advice: helping them to stop smoking and exercise and diet control ect

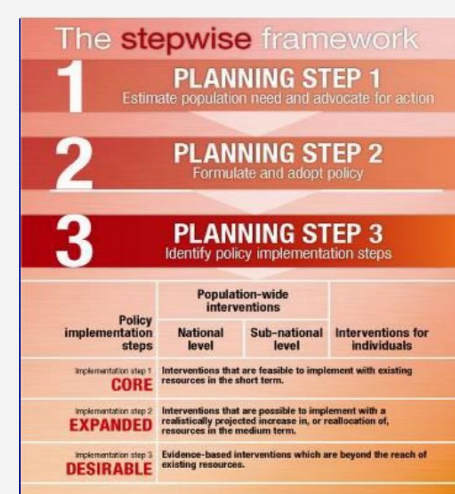
Secondary approach

Continuation of primary care

- Early case detection and treatment eg: CHD
 - Cessation of smoking
 - Reduction of serum cholesterol level
 - Compliance with meds is considered 2ry prevention

What works?

- **Comprehensive and integrated** action is the means to prevent and control chronic diseases



Global Actions:



Box 1.1 Voluntary global targets for prevention and control of noncommunicable diseases to be attained by 2025

- (1) A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases
- (2) At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context
- (3) A 10% relative reduction in prevalence of insufficient physical activity
- (4) A 30% relative reduction in mean population intake of salt/sodium
- (5) A 30% relative reduction in prevalence of current tobacco use
- (6) A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances
- (7) Halt the rise in diabetes and obesity
- (8) At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes
- (9) An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities

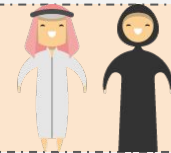
Box 1.3 Key messages of the Global Status Report on Noncommunicable diseases 2014

- Message 1** Noncommunicable diseases act as key barriers to poverty alleviation and sustainable development
- Message 2** While some countries are making progress, the majority are off course to meet the global NCD targets
- Message 3** Countries can move from political commitment to action by prioritizing high-impact, affordable interventions
- Message 4** All countries need to set national NCD targets and be accountable for attaining them
- Message 5** Structures and processes for multisectoral and intersectoral collaboration need to be established
- Message 6** Investment in health systems is critical for improving NCD outcomes
- Message 7** Institutional and human resource capacities and financial resources for NCD prevention and control require strengthening.

Box 1.2 Objectives of the Global NCD Action Plan (1)

1. To raise the priority accorded to the prevention and control of NCDs in global, regional and national agendas and internationally agreed development goals, through strengthened international cooperation and advocacy.
2. To strengthen national capacity, leadership, governance, multisectoral action and partnerships to accelerate country response for the prevention and control of NCDs.
3. To reduce modifiable risk factors for NCDs and underlying social determinants through creation of health-promoting environments.
4. To strengthen and orient health systems to address the prevention and control of NCDs and the underlying social determinants through people-centred primary health care and universal health coverage.
5. To promote and support national capacity for high-quality research and development for the prevention and control of NCDs.
6. To monitor the trends and determinants of NCDs and evaluate progress in their prevention and control.

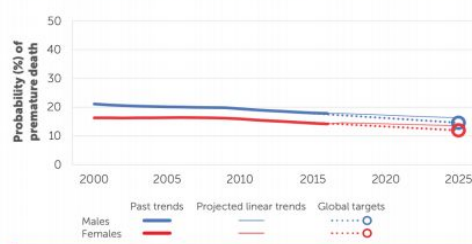
Situation in Saudi Arabia:



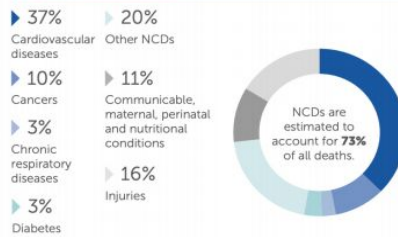
SAUDI ARABIA

2016 TOTAL POPULATION: 32 276 000
2016 TOTAL DEATHS: 114 000

RISK OF PREMATURE DEATH DUE TO NCDs (%)*



PROPORTIONAL MORTALITY*



12 000 LIVES CAN BE SAVED BY 2025 BY IMPLEMENTING ALL OF THE WHO "BEST BUYS"

MORTALITY*	NATIONAL TARGET SET	DATA YEAR	MALES	FEMALES	TOTAL
Premature mortality from NCDs	Total NCD deaths	2016	48 600	34 500	83 100
	Risk of premature death between 30-70 years (%)	2016	18	14	16
Suicide mortality	Suicide mortality rate (per 100 000 population)	2016	-	-	3

NATIONAL SYSTEMS RESPONSE

Drug therapy to prevent heart attacks and strokes	Proportion of population at high risk for CVD or with existing CVD (%)	-	-
	Proportion of high risk persons receiving any drug therapy and counselling to prevent heart attacks and strokes (%)	-	-
	Proportion of primary health care centres reported as offering CVD risk stratification	2017	More than 50%
	Reported having CVD guidelines that are utilized in at least 50% of health facilities	2017	Yes
Essential NCD medicines and basic technologies to treat major NCDs	Number of essential NCD medicines reported as "generally available"	2017	10 out of 10
	Number of essential NCD technologies reported as "generally available"	2017	6 out of 6

... = no data available

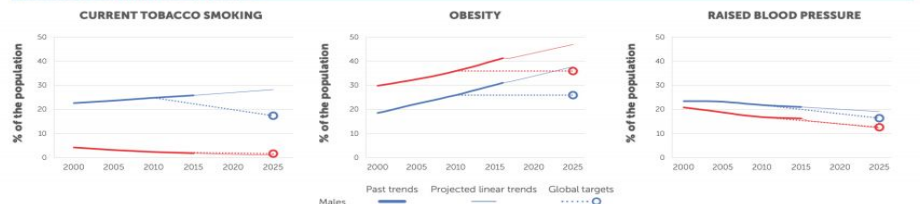
World Health Organization - Noncommunicable Diseases (NCD) Country Profiles, 2018.

*The mortality estimates for this country have a high degree of uncertainty because they are not based on any national NCD mortality data (see Explanatory Notes)

RISK FACTORS

Harmful use of alcohol	X	Total alcohol per capita consumption, adults aged 15+ (litres of pure alcohol)	2016	0	0	0
Physical inactivity	✓	Physical inactivity, adults aged 18+ (%)	2016	44	64	52
Salt/Sodium intake	X	Mean population salt intake, adults aged 20+ (g/day)	2010	8	8	8
Tobacco use	✓	Current tobacco smoking, adults aged 15+ (%)	2016	26	2	16
Raised blood pressure	✓	Raised blood pressure, adults aged 18+ (%)	2015	21	16	19
Diabetes	X	Raised blood glucose, adults aged 18+ (%)	2014	15	14	14
Obesity	✓	Obesity, adults aged 18+ (%)	2016	31	41	35
		Obesity, adolescents aged 10-19 (%)	2016	19	14	17
Ambient air pollution	-	Exceedance of WHO guidelines level for annual PM2.5 concentration (proportion)	2016	-	-	8
Household air pollution	-	Population with primary reliance on polluting fuels and technologies (%)	2016	-	-	-5

SELECTED ADULT RISK FACTOR TRENDS



MCQs

1-All of the followings are features of NCDs EXCEPT:

- A) Permanent
- B) Causes disability
- C) Reversible causes
- D) Non-reversible causes

2-Most of the chronic diseases are preventable:

- A) True
- B) False

3-Lack of physical activity and unhealthy diet both on long term can lead to all of the following except:

- A) Hypotension
- B) Hyperglycemia
- C) Elevated HDL
- D) A and C

4-WHO four priority NCDs are:

- A) Diabetes, Cardiovascular, cancer and chronic respiratory diseases
- B) Hypertension, Diabetes, cancer and chronic respiratory diseases
- C) Hyperlipidemia, diabetes, cardiovascular and hypertension
- D) Any chronic disease causes disability and needs prolonged treatment is a priority