

Epidemiology of Non-Communicable diseases

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Dr Olarewaju

Outline

- What is non-communicable diseases
- Types of Non-Communicable diseases
- Diagnosis of Non-Communicable diseases
- Prevention and control of Non-communicable diseases

Introduction

- Also called chronic disease epidemiology
- Assuming increasing importance in both developed and developing countries.
- There is an epidemiological transition from communicable diseases to predominantly NCDs in Nigeria.
- NCDs are increasingly becoming an important contributor to the national diseases burden and therefore a major public health concern.

NCDs: Definition

- An impairment of bodily structure and function that necessitates a modification of the patient's normal life, and has persisted over an extended period of time.

NCDs: Definition

Various definitions

- Comprise all impairments or deviations from normal, which have one or more of the following characteristics:
 - Are permanent
 - Leave residual disability
 - Are caused by non-reversible pathological alterations
 - Require special training of the patient for rehabilitation
 - May be expected to require a long period of supervision, observation or care

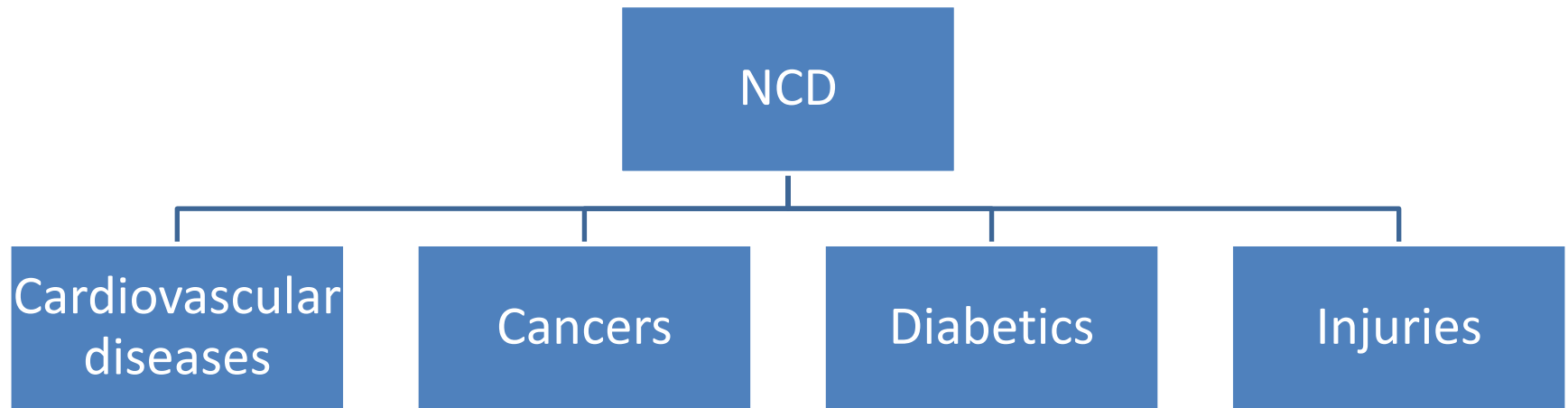
Commission on chronic illness in USA, 1956

- NCDs are leading cause of functional impairment and death worldwide.
- **NCDs account for 43% of global disease burden; 60% of deaths**
- **Projection: By 2020, NCDs will account for 60% disease burden and 73% of deaths**
- Among the top ten causes of morbidity and mortality in Nigeria.
- Imposes heavy economic burden on individuals, societies and the health system.

NCDs are assuming greater importance because –

- Control of communicable diseases- malaria, diarrhoea dxs, respiratory tract infections etc
- Urbanization and industrialization
- Life style and behaviour
- Increased life expectancy- more people living to old age
- Modern health services

Examples of Non-Communicable diseases



Characteristics

- Absence of known etiological agent –
- Multifactorial causation – absence of one to one cause but “risk factors”.

Risk factors- factors that are positively associated with the risk of development of a disease but are not sufficient to cause the disease

- Long latency period. Period between 1st exposure to suspected factor and eventual development of disease

Hence difficult to link factor & dx, difficult to prevent.

4. Indefinite onset- Slow.

Risk factors of NCD

Modifiable and non-modifiable
factors

Modifiable risk factors of NCD

- Lifestyle
 - Cigarette smoking
 - Excessive alcohol
 - Dietary patterns
 - Physical inactivity
- Environmental
 - Occupational hazards
 - Radiation
 - Other pollutants

- Failure or inability to get preventive health services such as:
 - Screening
 - Early treatment
- Stress factors
- Recently identified aetiological factors
 - Viral carcinogenesis
- HPV, Epstein barr virus, HIV,

Non-modifiable risk factors

- Family history
- Advancing age

Diagnosis of NCD

Diagnosis of NCDs

1. Biochemical testing e.g diabetes, cholesterol
2. Blood tests for markers
3. Radiologic tests, X-ray, Ultrasound, MRI, CAT scan, PET scan
4. Biopsies
5. Genetic testing

Prevention of NCDs

- Multiple Interventions

Primordial - Anti-smoking, alcohol, drug abuse laws and legislation.

Primary- Health promotion, modification of risk factors e.g physical activity, relaxation & rest, good nutrition, emotional stability-avoidance of stress, health education, avoidance of exposure to harmful substances

Secondary- Screening, case finding, prompt Rx

Tertiary- Limit disability and rehabilitation

(medical, social, vocational & economic)

Epidemiology of RTA

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What is the problem?

- RTA is an health related event that with an undesirable outcome, injury to the body, loss of life,damage to property and interruption in business activities.
- It involves the vehicles, pedestrian, passenger,drivers and even animals.
- It has devastating effect on the physical structure of the individual, family life, economic and developmental well being.

What is the problem?

- A lot of talented individuals are lost through RTA
- It has created anxiety state in the mind of Nigerians.

Magnitude: Place, Person and Time distribution-

Place:

- **World wide**
- Endemic and epidemic patterns in Nigeria
- 700,000 lost yearly to RTA worldwide.

Person: Age: young drivers (15-24yrs),
Male>Female.

Time: Weekends, Nights, Festive periods

Determinants

Agent: Vehicle: Poor maintenance: tyres, brake, steering, horn, overloading

Host:

- low education
- Medical condition: heart attack, impaired vision, fatigue, epilepsy
- Behaviour: smoking, alcohol
- Risk taking: overspeeding, non-use of protective devices, violation of traffic signs e.t.c.

Determinants factors

Environment:

- Road:
- Narrow road
- Pot holes
- Poor lighting
- Weather: Bad weather.

Prevention and Control

Directed at host:

- Health education: to drivers, pedestrian and passengers on road signs.
- Lifestyle modification: stop smoking, alcohol and other drugs while driving.
- Imposing penalties for smokers and drug abusers
- Use of preventive measures while driving such as seat belt

Agent:

- Vehicle design and maintenance

Prevention and Control

Environment:

- Road maintenance (FEPA)
- Law enforcement agencies:FRSC,POLICE,e.t.c.
- Enforcement of driving test, medical fitness, vehicular inspection e.t.c
- Conducting Researches on RTA and its determinants
- Traffic rule and regulations
-

DIABETICS

Diabetics

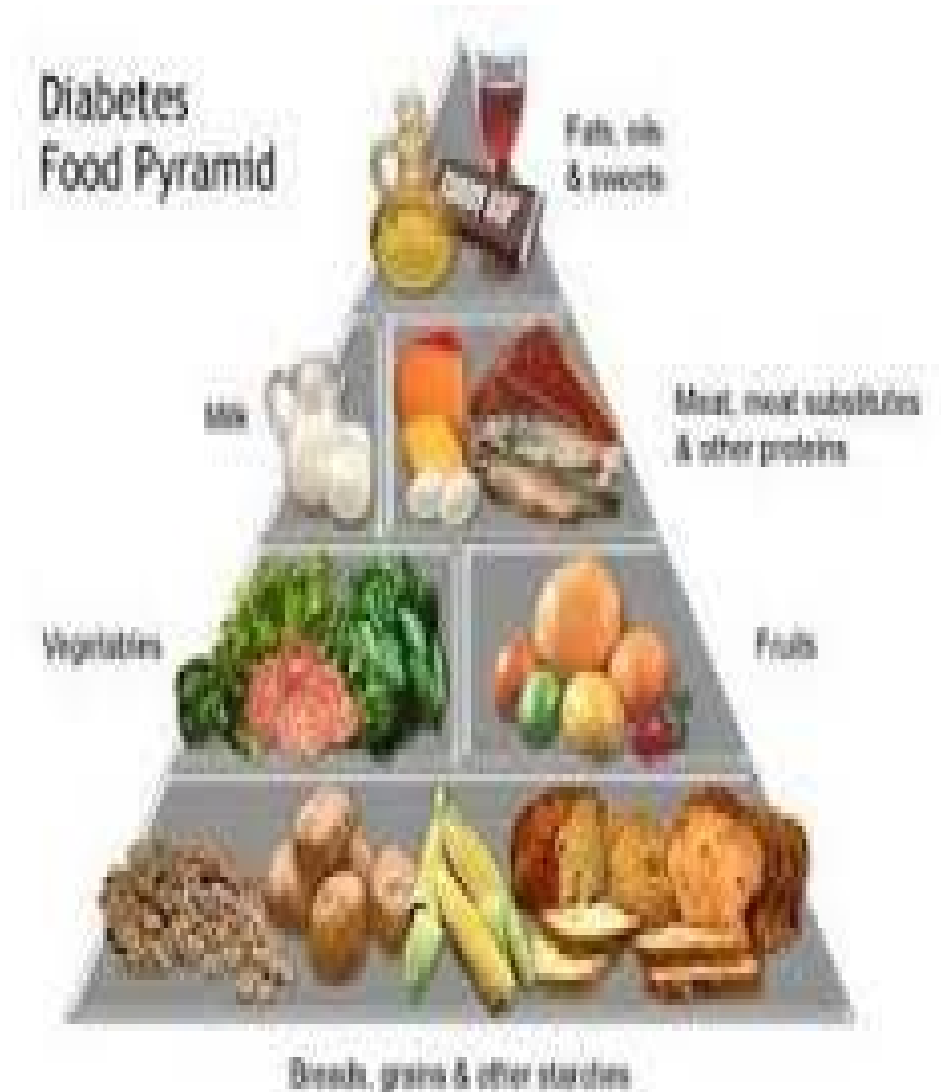
- Group of metabolic diseases in which there is **high blood sugar** over a prolonged period.
- Fasting blood sugar ; **2.2 – 6.1mmol/l** and Radom blood sugar is **7.8 -11.1 mmol/l**.
- It produces symptoms of frequent urination, increased thirst and increased hunger.
- Long term complications can affect the eyes, kidney, heart or cause foot ulcer

TYPES OF DIABETICS

- [Type 1 DM](#) results from the body's failure to produce enough insulin. This form was previously referred to as "insulin-dependent diabetes mellitus" (IDDM) or "juvenile diabetes". Linked to HLA genotypes. Onset triggered by viral infections- [Coxsackie B4 virus](#) virus or diet.
- [Type 2 DM](#) cells fail to respond to insulin properly as "non insulin-dependent diabetes mellitus" (NIDDM) or "adult-onset diabetes". It is linked to excessive body weight and not enough exercise.
- [Gestational diabetes](#), is the third main form and occurs when pregnant women without a previous history of diabetes develop a high blood glucose level.

SPECIFIC Management

- Use of insulin injection
- Use of anti-diabetic drugs
- Dietary and lifestyle modification
- Regular medical checkup



HYPERTENSION

HYPERTENSION

- Most important contributor to CVD sickness and death
- Affects 1 billion people worldwide
- Approx. 7.1 million deaths per year attributable to HT
- 95% cases **essential** while 20% cases **secondary** to renal/endocrine diseases
- Uncontrolled Blood Pressure can lead to stroke, Congestive Heart failure, Renal failure, retinopathy e.t.c.....

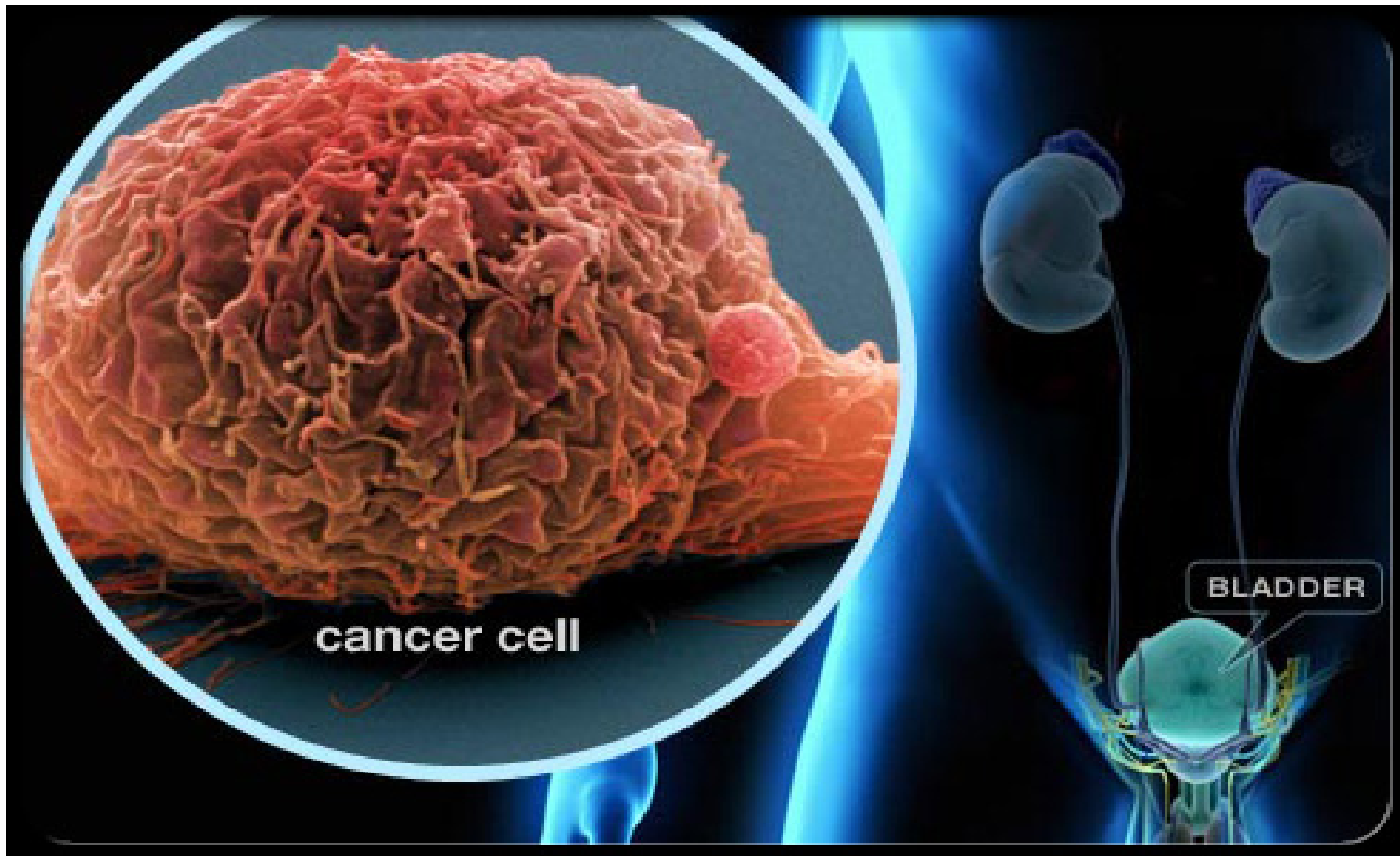


Blood Pressure classification

BLOOD PRESSURE CLASSIFICATION	SYSTOLIC BLOOD PRESSURE	DIASTOLIC BLOOD PRESSURE
NORMAL	< 120mmHg	< 80 mmHg
PRE HYPERTENSION	120 -139mmHg	80-89 mmHg
STAGE 1	140 -159mmHg	90 -99 mmHg
STAGE 2	> 160mmHg	> 100mmHg

Cancer

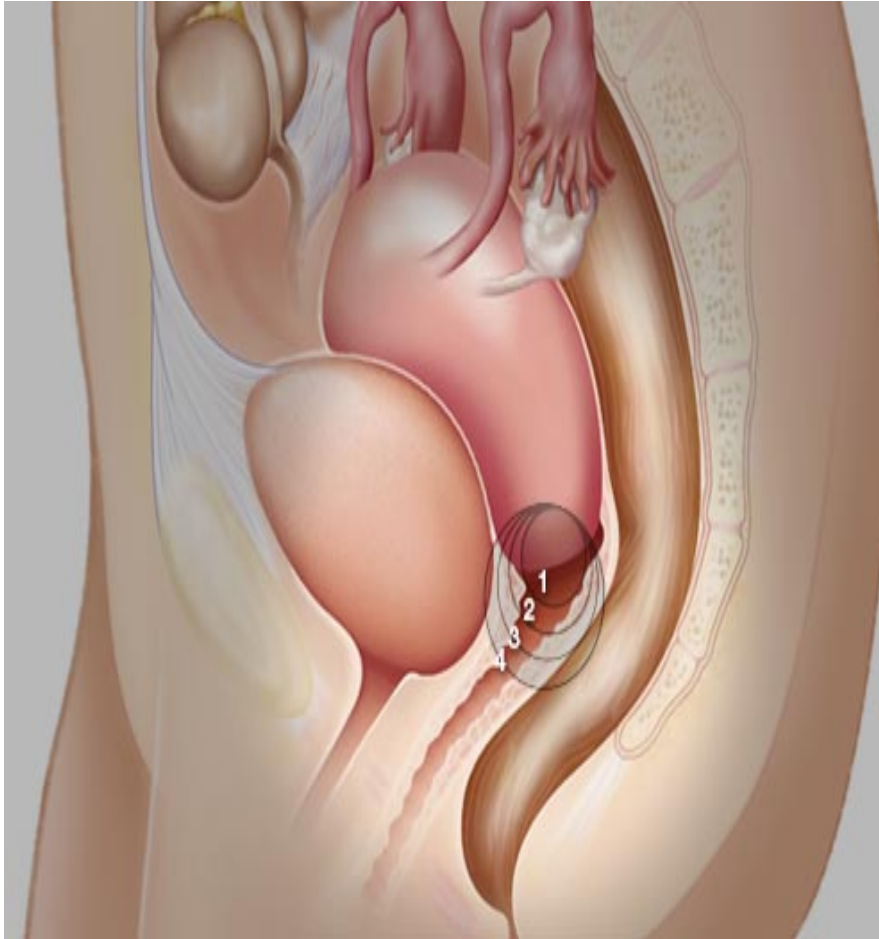
What is Cancer cell?



What is cancer ?

- Cancer occurs when cells losses its normal behaviour due to DNA damage
- DNA carries software that regulates the behaviour of the cell
- Cells begins to multiply abnormally.
- Cancer progresses from one stage to the other. (Stage 0-4)
- It is named according to body parts in which it originated from- Breast, Cervix, Endometrial e.t.c

Types of cancers



Agents linked to Cancer

DNA is damaged by the following factors:

- Tobacco – Lung Cancer
- Alcohol – Liver Cancer
- Wrong food choices – chemicals/Preservatives
- Infections – Human Papilloma Virus linked to Cervical Cancer

Agent linked to cancers

- Occupational hazards- Asbestos
- Genetic factor- Inheritance from mother, father account for 3%
- Ionizing radiation – GSM, Chest x-ray e.t.c
- Sedentary lifestyle – No exercise

Symptoms of cancer

Depend on part affected.....

Symptoms of breast cancer

- Breast Changes:
- Breast lump.
- Redness and thickening of the skin on the breast.
- Rash that persists for weeks
- Changes in the nipple
- Discharge when you are not breastfeeding, bloody



Symptoms of Cervical Cancer

Asymptomatic at early stages.

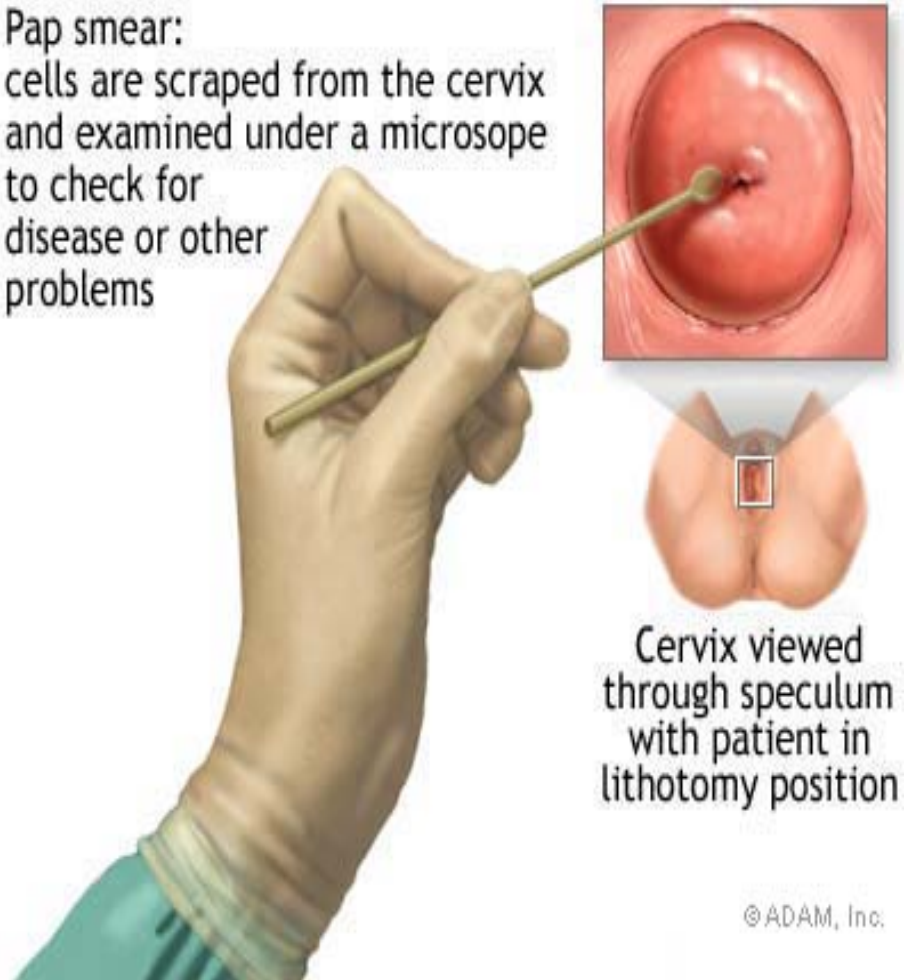
- Abnormal vaginal bleeding (during sex, after menopause, in between menses)
- Vaginal discharge with an unpleasant odour.
- Pain during sex
- Pelvic or back pain



Diagnosis of Cervical Cancer



Pap smear:
cells are scraped from the cervix
and examined under a microscope
to check for
disease or other
problems



Thank you