

Disease Elimination and Eradication

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Prevention; Definition and Concept

- **Actions aimed at eradicating, eliminating or minimizing the impact of disease and disability, or if none of these are feasible, retarding the progress of the disease and disability.**
- **The concept of prevention is best defined in the context of levels, traditionally called primary, secondary and tertiary prevention. A fourth level, called primordial prevention, was later added.**

Levels of Prevention

Stage of disease	Level of prevention	Type of response
<u>Pre-disease</u>	<u>Primary Prevention</u>	Health promotion and Specific protection
<u>Latent Disease</u>	<u>Secondary prevention</u>	Pre-symptomatic Diagnosis and treatment
<u>Symptomatic Disease</u>	<u>Tertiary prevention</u>	•Disability limitation for early symptomatic disease •Rehabilitation for late Symptomatic disease

DM + HTN + Cancer $\Rightarrow$ 
 Silent Killer
 ice Berg disease

Levels of prevention

* Primordial prevention

$\Rightarrow$ prevent Risk Factor.

Primary prevention

لـ المرضـا فـشـ مـوـجـود

$\Rightarrow$ prevent occurrence the disease
 " Screen cholesterol Level "
 Risk Factor

 موقع
 اسئلة

Secondary prevention

لـ المرضـا مـوـجـود

$\Rightarrow$ prevent complication
 " screening disease "
 " early detection "

Tertiary prevention

$\Rightarrow$ prevent handicap.

DM
 $\hookrightarrow$ central obesity (Risk Factor)

Primordial prevention

- Primordial prevention consists of actions and measures that inhibit the emergence of risk factors in the form of environmental, economic, social, and behavioral conditions and cultural patterns of living.

Primordial prevention(cont.)

- It is the prevention of the emergence or development of risk factors in countries or population groups in which they have not yet appeared

يمكن يكون مرطب ويمكن يكون RF

- For example, many adult health problems (e.g., obesity, hypertension) have their early origins in childhood, because this is the time when lifestyles are formed (for example, smoking, eating patterns, physical exercise).

HTN (disease) ⇒ Primary

HTN (RF of CVD) ⇒ primordial

Primordial prevention(cont.)

- In primordial prevention, efforts are directed towards discouraging children from adopting harmful lifestyles
- The main intervention in primordial prevention is through individual and mass education

→ Vaccination

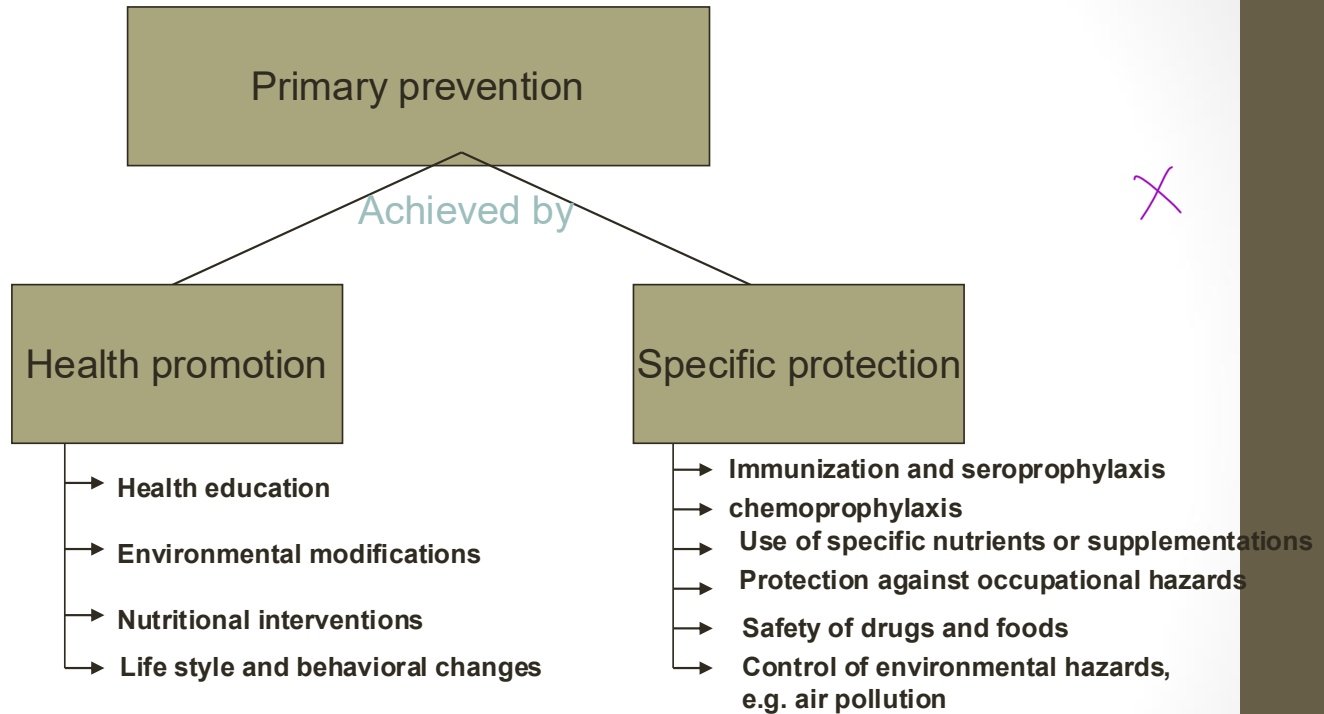
Primary prevention

Prevent occurrence of disease

- Primary prevention can be defined as the action taken prior to the onset of disease, which removes the possibility that the disease will ever occur. X
- It signifies intervention in the pre-pathogenesis phase of a disease or health problem.
- Primary prevention may be accomplished by measures of “Health promotion” and “specific protection” Vacc

Primary prevention (cont.)

- It includes the concept of "**positive health**", a concept that encourages achievement and maintenance of "an acceptable level of health that will enable every individual to lead a socially and economically productive life".
- Primary prevention may be accomplished by measures designed to **promote** general health and well-being, and quality of life of people or by **specific protective measures**.



Health promotion

- **Health promotion is “ the process of enabling people to increase control over the determinants of health and thereby improve their health”.**

Secondary prevention

- It is defined as “ action which halts the progress of a disease at its incipient stage and prevents complications.”
- The specific interventions are: early diagnosis (e.g. screening tests, and case finding programs....) and adequate treatment.
- Secondary prevention attempts to arrest the disease process, restore health by seeking out unrecognized disease and treating it before irreversible pathological changes take place, and reverse communicability of infectious diseases.
- It thus protects others from in the community from acquiring the infection and thus provide at once secondary prevention for the infected ones and primary prevention for their potential contacts.

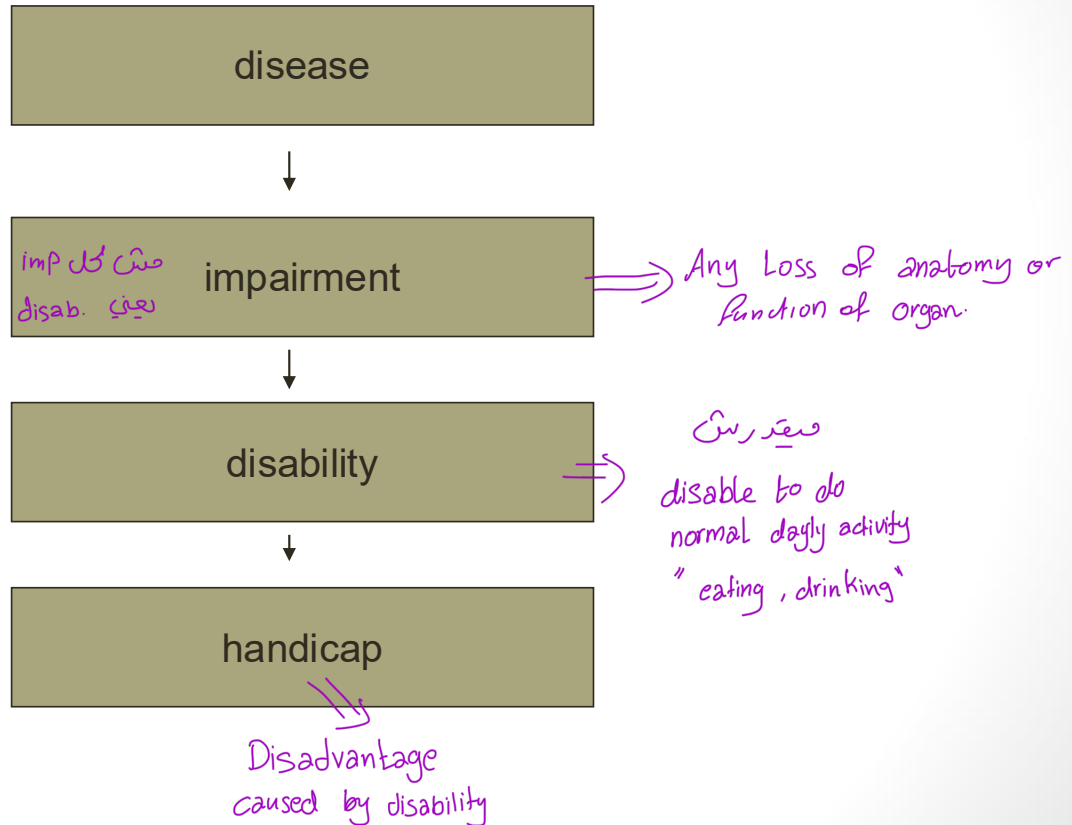
Secondary prevention (cont.)

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Tertiary prevention

- It is used when the disease process has advanced beyond its early stages.
- It is defined as “all the measures available to reduce or limit impairments and disabilities, and to promote the patients’ adjustment to irremediable conditions.”
- Intervention that should be accomplished in the stage of tertiary prevention are disability limitation, and rehabilitation.

Disability limitation



Impairment

- Impairment is “any loss or abnormality of psychological, physiological or anatomical structure or function.”

Disability

- Disability is “any restriction or lack of ability to perform an activity in the manner or within the range considered normal for the human being.”

Handicap

- Handicap is termed as “a disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfillment of a role in the community that is normal (depending on age, sex, and social and cultural factors) for that individual.”

Rehabilitation

ad

"علاج"

comprehensive

- Rehabilitation is " the combined and coordinated use of medical, social, educational, and vocational measures for training and retraining the individual to the highest possible level of functional ability."

مراحم الرتيب

Rehabilitation

to prevent
Handicap.

① Medical
rehabilitation

Physical



مثلا واده حامل
بسر بطراف ← اركابه
طراف ..

② Vocational
rehabilitation

Occupational

③ Social
rehabilitation

④ Psychological
rehabilitation

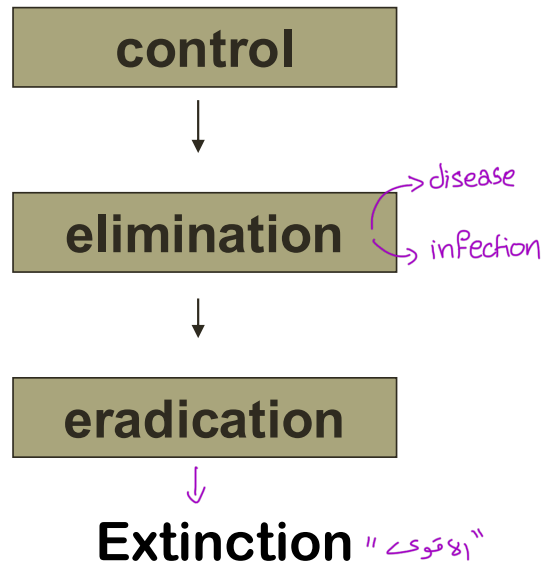
Control

- **Concept of control:**

The term disease control describes ongoing operations aimed at reducing:

- The incidence of disease
- The duration of disease and consequently the risk of transmission
- The effects of infection, including both the physical and psychosocial complications
- The financial burden to the community.

- Control activities focus on primary prevention or secondary prevention, but most programs combine both.



Terms

- **Control: Reduction of incidence, prevalence, morbidity and mortality to locally accepted level.**

حسب امکانات کل دولت .
رسم حواله له Zero

* بجال فعل محدودت المرض .
وانتشاره .

Deliberate efforts
Continuous efforts

→ sign + symptom

Elimination of Disease

← تا يکون المرض موجود

- Reduction of disease incidence to zero in a defined geographical area. *مست محلي*

E.g. **Neonatal tetanus**

Deliberate efforts
Continuous efforts

→ invasion

Elimination of Infection

→ organism موجود الـ

- Reduction of **infection** incidence to zero in a defined geographical area.

E.g. **Measles & poliomyelitis**

Temporary

عنه بروج وبهجي

Deliberate efforts
Continuous efforts

Eradication

- Permanent reduction of the worldwide incidence of infection to zero.

Locally في
geograph. في

e.g. **smallpox** ١٩٧٩

ليس هناك المزيد المرضي في حفظ .

disease $\Rightarrow$ control + E. of disease

Infection $\Rightarrow$ Eradi + Elim + E. of infection

Deliberate efforts
No Continuous efforts

Disease Eradication

- Eradication literally means to "tear out by roots".
- It is the process of "Termination of all transmission of infection by extermination of the infectious agent through surveillance and containment".
- Eradication is an absolute process, an "all or none" phenomenon, restricted to termination of an infection from the whole world. It implies that disease will no longer occur in a population.
- To-date, only one disease has been eradicated, that is **smallpox**.

disease ٤١٥
infection ٤١٦

Extinction

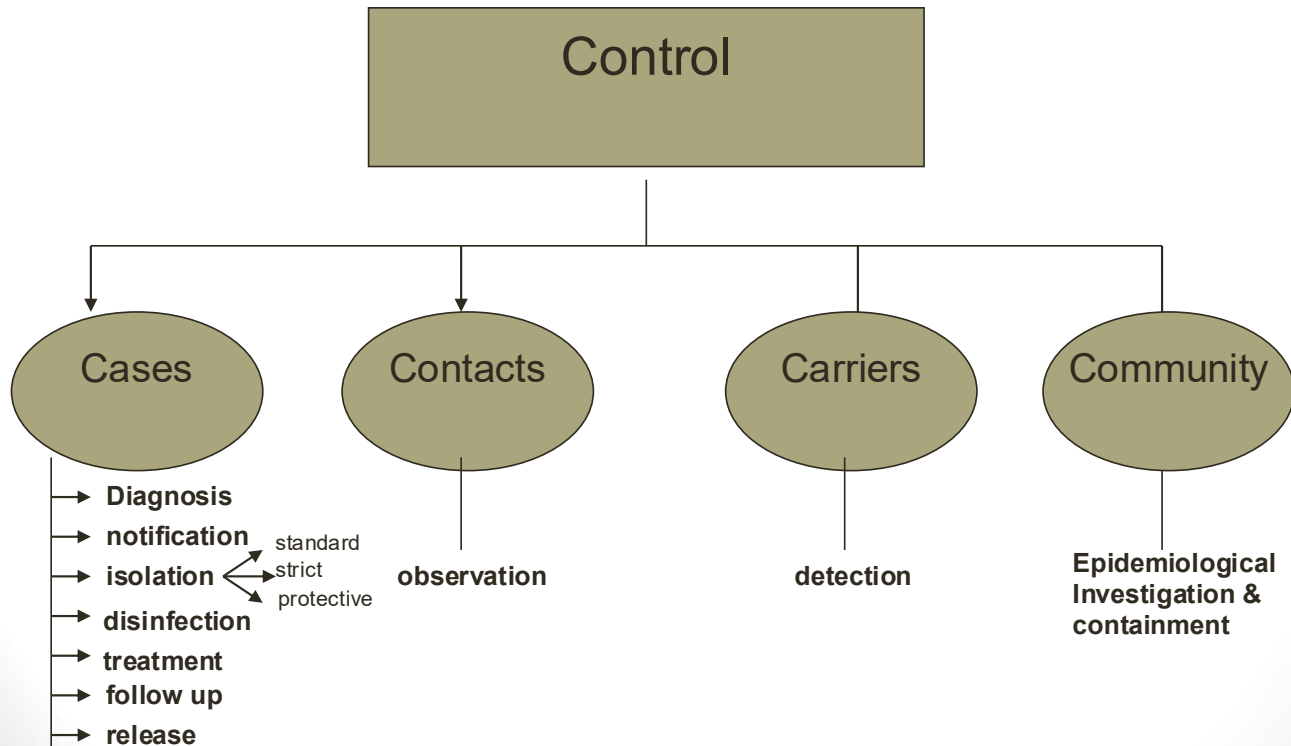
↪ Organism

- The specific **infectious agent** no longer exists in the nature or laboratory.

✱

No Deliberate efforts
No Continuous efforts

Control of infectious diseases (the 4 “C”s)



Quarantine

- Quarantine has been defined as:
“The limitation of freedom of such persons or domestic animals exposed to communicable disease for a period of time not longer than the longest incubation period of the disease to prevent contact with those not exposed”.



Thank You