Summary Slide

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- Epidemiology is the study of the patterns, causes, and effects of health and disease conditions in defined populations.
- There are several measures you must know that help define the epidemiology of any given disease.

Core Reference:

(Gordis, Epidemiology) 7th Edition

by Leon Gordis MD MPH DrPH

Interpretation of Prevalence

Provides an indication of the extent of a health problem.

Example 1: Prevalence of diarrhea in a children's camp on July 13 was 33% (point prevalence)
Example 2: Prevalence of cancer in women during a specified time period (period prevalence)

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What if a cure is quickly developed for this disease, aka the disease no longer exists in the person. Now what would happen to prevalence?

What if a treatment is quickly developed for this disease, aka the disease no longer deadly. Now what would happen to prevalence?

(Gordis, Epidemiology) 7th Edition by Leon Gordis MD MPH DrPH, Chapter 3

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What if a cure is quickly developed for this disease, aka the disease no longer exists in the person. Now what would happen to prevalence?

Prevalence decreases

What if a treatment is quickly developed for this disease, aka the disease no longer deadly. Now what would happen to prevalence?

Prevalence increases

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Does an increase in prevalence mean the problem is getting worse?

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What kind of prevention is vaccination?

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What kind of prevention is vaccination?

Primary Prevention

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Screening

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- Definition: Presumptive identification of an unrecognized disease or defect by the application of tests, examinations, or other procedures. Screening classifies asymptomatic people as likely or unlikely to have a disease or defect. It is usually not diagnostic.
- Purpose: To delay the onset of symptomatic or clinical disease, or to improve survival.

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Screening

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- Seems simple but is complex. There are hidden costs and risks. Screening can create morbidity and anxiety. Must be aware of biases.
- For screening to be successful you need a:
  - Suitable disease
  - Suitable test
  - Suitable screening program

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Screening

- First you classify people as “diseased” or “healthy” using a diagnostic test. Remember- a screening test is generally NOT diagnostic
- You then administer the screening test and classify people as “screen positive” or “screen negative.”

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		Gold Standard- Diagnostic Test		
		Present	Absent	Total
Screening Test Result	Positive	A True Positive (TP)	B False Positive (FP)	a + b
	Negative	C False Negative (FN)	D True Negative (TN)	c + d
	Total	a + c	b + d	

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A screening test that is reliable is not necessarily also valid.

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You develop a screening test with 80% sensitivity. What does this mean?

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You develop a screening test with 80% sensitivity. What does this mean?

80% sensitivity means that of all of the people with a disease, you are correctly identifying 80% of them using your screening test.

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The screening test you have developed has 90% specificity. What does this mean?

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