



University of Jordan  
Faculty of Medicine



Medical Committee  
The University of Jordan





# Community Medicine



Lecture Title:	<b>EPIDEMIOLOGY</b> .....				
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Lecturer:	<b>Dr. Farouq Al-Shakhatreh</b> .....				
Done By:	<b>Husam Fawaz</b> .....				
Price:	.....				

DESIGNED BY:  
WASEEM KAMAL

M.D. University of Jordan  
Class of 2018

 groups/Doctor2012  
 <http://medstudygroup.weebly.com>



# “EPIDEMIOLOGY”

✚ **Epidemiology** (علم الوبائيات): General Studying of **distribution** and **determinants** of diseases & health related problems in human population.

✚ **Distribution means:** occurrence of mortality or morbidity or health related problems (like smoking ,Road Accidents, Number of pregnancies, social class and Exposure to Cement Dust) in human being according to **person, place & time**

## Examples:

- When you read article or book...They say: prevalence rate of anemia in pregnant women is **25%** this is an epidemiological study.
- Poliovirus Vaccine** prevents the occurrence of disease by **95 %**. ( if There are 100 kids, by giving them this vaccine will prevent the occurrence of disease in 95 kids thus by 95% ).
- Incident Rate of **bronchial asthma** is about **4%** in cement factory.

❖ The First theme of epidemiological studies is to distribute diseases according to **personal characteristics** (like Age, Gender (male & female)).

## Examples:

1. Many studies found that infectious diseases are common in children as compared to other age groups.
2. Myocardial infarction is more likely to be fatal in male.

❖ The second theme is a **place distribution of disease** (area of residence or place of work).

## Examples:

1. Malaria is more common in developing countries as compared with developed.
2. Al fo7ai9 (الفحيص) have more bronchial asthma because of dust as compared to other parts of the country.
3. Workers in noisy factories are more likely to have deafness (الطرش).

- ❖ The third theme is the **time variation of mortality or morbidity** and we have 3 types:
  - 1) **Long-term Variation.**
  - 2) **Cyclic or periodic Variation.**
  - 3) **Short –term variation (Epidemic).**

- **First type is secular trend or long term variation:** it is a variation of mortality and morbidity over a long time.

The best example is Variation of infant mortality rate in Jordan over long period of time (1961-2010) in 1961 the infant mortality rate was 160/1000 while it was 18/1000 in 2010.

(يفضل اعتماد الأرقام حسب شيتات د.سمر الشريف)

- **Second type is cyclic or periodic variation:** the number of cases of certain disease increases every specific period of time.

Examples in Jordan:

- ☒ Diarrhea is more common in summer.
- ☒ Measles in Jordan increases over a period of (4-5years), in USA and Sweden it increases over 10 years (variation in USA and Sweden is better) \*\*Note that The situation has improved in Jordan because in the past measles increases over ( 2-3 years) BUT nowadays (4-5 years), because the coverage rate of vaccination has increased.

- **Third type is called epidemic or short term variation:** Abnormal and temporary increase in number of cases of a certain disease over a *short* period of time.

- ☒ Example: if we have 3 or 4 cases of poliomyelitis every year and then it reached 10 or more cases we say that we have an outbreak of poliomyelitis.

When you want to make a study or read an article there is some terms you have to be familiar with, like:

- Determinant: factor which increase or decrease occurrence of a disease.
- Risk factor: a factor which significantly associated to occurrence of disease.

- Cause of a disease.
- P value: Statistical significant level.

☒ For anything to be a risk factor for certain disease, its P value must be less than or equal 0.05 (5%).

In relation of smoking to bronchitis for example P value = 0.002 >> is smoking a risk factor of bronchitis?

0.002 is less than .05 so yes it is risk factor.

✚ When we say P value is 0.02 >> we mean that P value (in association of drinking milk and osteoporoses for example) is **by chance** 0.02 of that association and 0.98 is a **real association**.

✚ The less the P value, the strongest the risk factor.