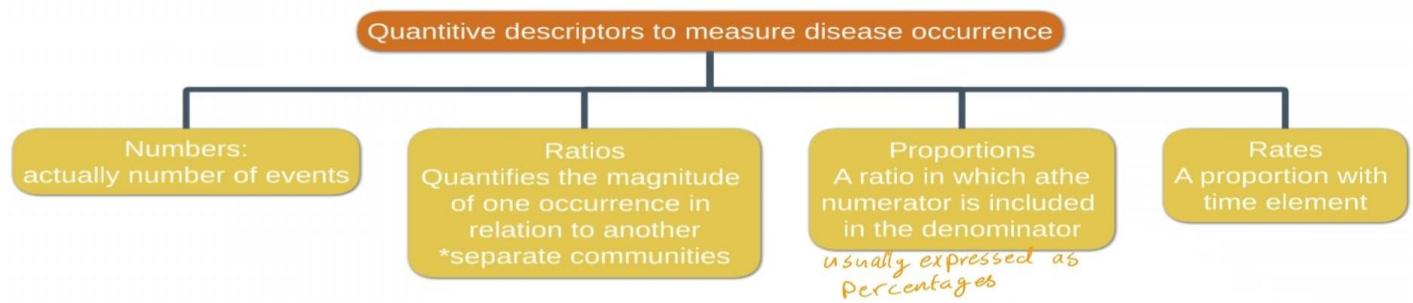
Morbidity measures:



Morbidity rates: Incidence rates (cumulative incidence, incidence density), Prevalence (period prevalence, point prevalence)

Incidence rate	Prevalence
The proportion of a population that develops a disease overtime → The risk/probability of an individual developing a disease overtime/ The **rapidity** with which new cases of a disease develop overtime / The proportion of unaffected individuals who on average will contract the disease overtime → **Cumulative incidence = Number of new cases of a disease during a specified period/Population at risk in the same Period of time**	It measures **the proportion of a population with a disease during a specified period or at a point in time** → It is not a rate, but a true proportion; there is no time element embedded in calculating prevalence → **prevalence =All persons with a disease /Total population It is not a rate** regardless of being at risk or not → It depends on the **incidence** of the disease and the **duration of the disease** process

→ Practical challenges in measuring incidence rate:

1- **Identification** of population at risk

2- Population is **not static** (it fluctuates/as a result of births, deaths and migration)

3- People are **at risk only until they get the disease** and then no more at risk

→ Prevalence can be used to **determine the health care needs of a community** [to study the cost of treatment of diabetes in a certain population, we need to know the prevalence]

→ **Prevalence = incidence * duration**

** Prevalence rate is equal to Incidence rate in case of diseases with short duration such as common cold or highly fatal such as Rabies (after onset of clinical symptoms) → SO, an increase in prevalence may not necessarily be due to an increase in incidence rate, it could be due to an increase in average duration of a disease due to decrease in death and/or recovery rates.

→ If the **average duration of disease remains constant**, then **preventive measures** that reduce the incidence of disease would be expected to result in a **decreased prevalence**. And similarly, if the **incidence remained constant**, then **developing a cure** would reduce the average duration of disease, and this would also **reduce the prevalence** of disease.

→ Removing prevalent cases by either dying or being cured of the disease; so they are no more calculated in exist cases in prevalence.

** The doctor mentioned 2 calculation examples in the slides