**Ans 1 (a)** **Definition of Epidemiology:**

Epidemiology is simply define as epi mean upon or about, demio mean population/ people and logy mean Study. so the study about people or Study of diseases in population is called epidemiology.

**Who define epidemiology as:-**

The Study of determination and distribution of health related events and states in residents and the application of the Study of this to control and prevention of health problems.

**A)Determinants:-**

it mean what is the Cause and risk factors of this disease mean why and how this disease cause in population.

**Example** :-

it may be cause due to some bio chemical or genetic problems or due to other envoirnmental changes.

**B) Distribution** :-

 mean spread of the disease .by whom, when and where this disease spread.

**1)whom**: mean who are more effected by this disease . depend on age and sex

* Age involved children, Young, Adult or old people.
* Sex involve male female mean which gender is more sensitive toward that disease.

**2) when** : mean when the disease is cause. mean it may be Seasonal or not. mean in which season the disease is more effective or not depend on any season.

**3) where:**-

mean where the disease is spread more rural/ urban difference of disease mean where the ratio of disease is high. e.g in villages or in cities.

**C) States and events**:- States is the Sign and Symptoms of the disease.

 Sign:- which find out by doctor. Symptoms which tells by the patient.

 **event**:- conformation of the disease in patients

**Ans(b)**

**1)Primary Data :-**

 Data which is Collected from the patient directly mean real time data.

**Example:-**

-) History taken from the patient directly.

 -) questionnaire, personal interviews etc are examples of primary data.

**2)Secondary data** :- Secondary data is the old collected data present in the hospital which we not collect from Patients directly but collect from hospital in directly which is related to the past.

**examples**. search in internet. articles in news paper, letters or public sector records

**Ans (2)**. **Cross Section Study:**-

in this Study we collect information in specific time from participant. we study cause and its out come. Study it at one specific time also called snapshot study mean it give us the quick summary about population.

we find new and old case (prevelance) in cross section study. find out the risk factors and its out come at one time.

**Steps:-**

**1)Defining the problem under study:-**

 . first we have to define/ explain what we are Studying about. e.g if we want to study about

 heart disease. so it is cross sectional disease.

**2)Defining the population under study:-**

 To Find How much population are involved in this disease.

  **Example:-**  people of Peshawar are involved in heart disease.

**3)Taking the sample of population**:-

 taking Sample represent the population of people involved in the disease or not.

**4)Collecting the Data** :

In this Step we collect the data fromthe sample we collected. e.g from Hospital or other places

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**5)Analyzing interpretation** **of data:-**

 Analysis of data by Software Called SPSS.

**Example:-**

That how many peoples are involved in heart disease

**6) Drawing the conclusion:-**

In this we find the percentage of involved population.

**Example:-**

In 100% population 50% are involved in heart disease.

**How we can collect data :-**

* We can collect data from questionnaire or from data collection forms. Distribute it in participants and collect data.
* By taking interview from participants that if they have heart disease or not and when they got involved in this diesaes.
* We can collect data from participants by clinical examination.
* We can also collect data by studying the records in hospital which is already present in hospital.

**Answer no #3:-**

**Difference between cohort study and case control study with examples:-**

 **(1). Cohort study:-**

The cohort study is the study group defined by

 an exposures.

* Compared the exposed of non group vs exposed of group.
* Prospective Study usually.
* Cohort study can establish risk fartors directly.
* It is also useful for the study of rare exposure.
* It is not suitable for rare disease.
* We can study more than one disease in cohort study.
* Asking about that did exposure change and likelihood of disease.
* Expensive and Time consuming.

**Examples of cohort study:-**

Farmingham heart study , nurse health and sociological reaserch, in retrospective VDTs and spontaneous abortion are examples of cohort study.

**(2) Case control study:-**

 the group study defined by outcome is called

 Case control study.

* Comparing the disease of non group vs group.
* It is usually retrospective study.
* No need of follow up.
* In this we study about multiple risk fartors.
* It is useful for rare disease.
* In case control study we can study one disease only .
* Looking for the exposure of risk fartors.
* Case control is not very expensive and required short period of time.

**EXAMPLE:-**

 Reasercher investigate that majority of peoples who have lungs cancer are smokers .or not . In other words we also say that lungs cancer is present in smokers or not.