Individual are selected from a parent population using defined criteria.

* DIRECT METHOD :-

Priori / Postesiori Sampling

→ Both requires same set of successive steps, but the order of some of these operation differs depanding on the mode of selection.

↓

1st step : for producing reference value

↓

Collection of quantitative information about the source of biological variation for analyte studies

It may be

controllable variable → can be controlled By standardization on procedure for preparation of reference individuals & specimen collection

non-controllable variable → controlled By relavent positioning criteria.

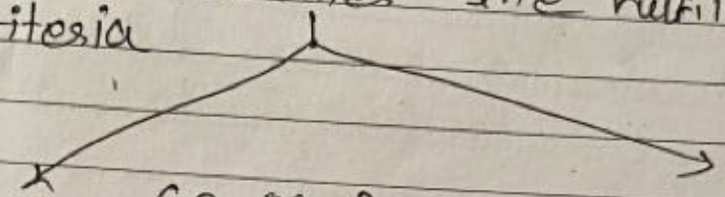
* PRIORI STRATEGY :-

→ Best suited for smaller studies.
→ Direct method
→ Individual are selected for specimen collection & analysis if they fulfill defined inclusion criteria.

→ In this sampling

↓

Reference individual from parent population are interviewed & examined clinically & by selected laboratory method whether the fulfill inclusion coitesia



if yes (Positive)

Then specimen for analysis are collected by standesdized procedure

Nagetive

↓

Don't include

* POSTERIORI METHOD :-

→ Best suited for large collection of data.

→ Direct Method.

→ Using an alreary existing database containing analysis result & information on a large numbes of individuals.

↓

Then value of individuals fulfilling defined inclusion coitesia selected.

→ Database should coulains these much information as follows :-

① Sampling from the parent population.

② Registration of demographic & clinical data on participating individuals
③ Preparation for & execution of specimen collection
④ handling & analysis of the specimens.

↓

IF these above criteria fulfills by the value of individual

↓

Those values are selected after application of defined inclusion criteria

↓

By using this value - reference individuals should be defined. selected

↓

In this study practical problem met when reference individuals are selected : the number of subjects fulfilling the inclusion criteria may be too small.

↓

Then problem has two solution

↓

The exclusion criteria may be relaxed

↓

he may define minimum set of exclusion criteria

Another design of the sampling procedure could reduce the practical problem.

INDIRECT METHOD:-

⇒ "Individuals are not considered, but certain statistical methods are applied to analytical values in a laboratory database to obtain estimate with specified characteristic"

↓

method is based on the observation that most analysis result produced in the clinical laboratory seems to be "Normal" if its distribution is Gaussian.

↓

The underlying assump" of indirect method is that the peak of Gaussian distribution is mainly composed of "Normal value".

↓

So it is possible to estimate the Normal interval if the distribution of Normal values from this distribution is extracted.

↓

But, it is ~~see~~ biased method.

It have two major disadvantage:-

→ If individuals are randomly selected from the entire population

↓

Then inclusion criteria are applied to sort out the subset of individuals fulfilling these criteria, even

→ Usually this situation is less satisfactory

→ So In Random sampling :-

" Process of selection giving each item (individual or test result) an equal chance of being chosen "

* Non Random Sampling :-

→ " Process of selection giving each item an unequal chance of being chosen "

→ Most commonally & pradically used method.

* Examples of selection (exclusion) criteria :-

⇒ Risk factors :
- Obesity
- HT

⇒ Intake of pharmacologically active agents :-
- oral contraceptives

- Alcohol
- Tobacco

⟹ Specific physiologic ~~stress~~ state :-
- Pragnancy
- stress
- Excessive exercise

* Examples of partitioning criteria :-
- Age
- Genders
- Genetic factors : Ethnic origin
  ABO
  HLA
  genes.
- Physiologic factors : stages in menstrual cycle
  stage in pragnancy
  physical condition
- Other factors : Socioeconomic
  Environmental
  Chronobiological.

(1) depend on particular mathematical method used and its underlying assump^{n}

(2) Result for each hospital depend on characteristics of hospital's patient group at that particular time

↓

So, these results would vary not only across hospital at different time

↓ but also for the same hospital at diff. times.

Destroy scientific basis of obtaining and comparing reference value.

* Random Sampling :-

→ Ideally, the group of reference individuals should be a random sample of all individuals fulfilling the inclusion criteria defined in the parent population.

→ Random sampling is practically impossible

→ Because it would imply the examination & application of inclusion criteria to the entire population

↓

Then Random selection of a subset of individual from among those accepted.