

④ cold chain :

→ system of storage & ~~transmission~~

Transportation of the vaccines



at low temperature ($+2$ to $+8^{\circ}\text{C}$)



from manufacture to place of its use

→ importance :

- the vaccines are Heat & light sensitive



once it loses the potency



it becomes a waste

→ most sensitive : Polio (OPV) & JE vaccine

→ least sensitive : TT & other T series vaccine
(TT, DPT, DT etc)

→ cold chain equipments :

(1) work in coolers :

→ AC cold rooms (temp. $+2$ to $+8^{\circ}\text{C}$)

→ site : vaccine institute

where vaccines are manufactured on
large scale

(2) **cold box :** Use : collect, store, & transport of vaccines from one place to another place.

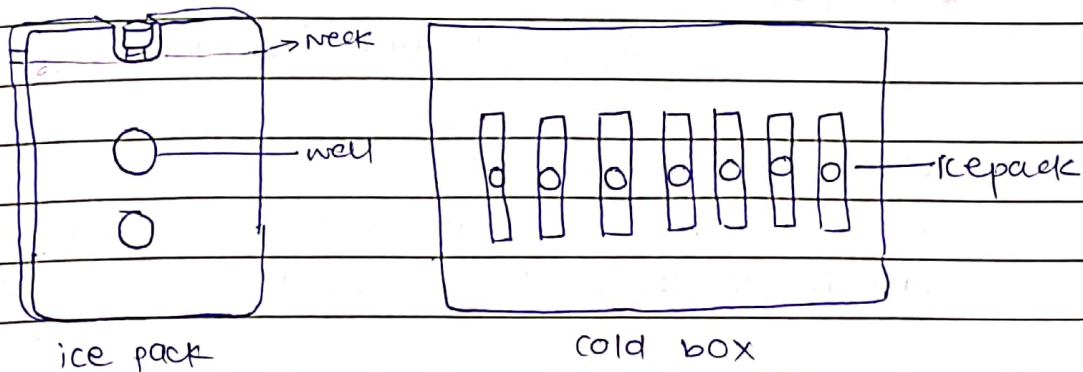
→ big rectangular box (90 cm x 60 cm) (large qty)

↓

made up of an insulated material

- lined with 24 ice pack boxes

→ cold life : 5 days



- 400 ml capacity

→ Health workers should place

→ BCG & measles vaccine : in the wells of ice-pack

→ OPV & JE vaccine : surface of ice pack

(3) **Deep freezer :**

→ Top opening refrigerator

→ maintain temperature at -20°C - -40°C

→ Electrical connections

→ used : to store only OPV & MV (measles vaccine) for long-term use

: - prepare ice packs

not stored

(T-series vaccine : denatured) (BCG - Ampule gives a crack)

4) ice lined Refrigerator :

- top opening Refrigerator
- temp : 0°C to $+8^{\circ}\text{C}$
- Equipped with baskets & preinstalled & water filled ice linings
- power failure : maintain cold life 18-20 hrs.

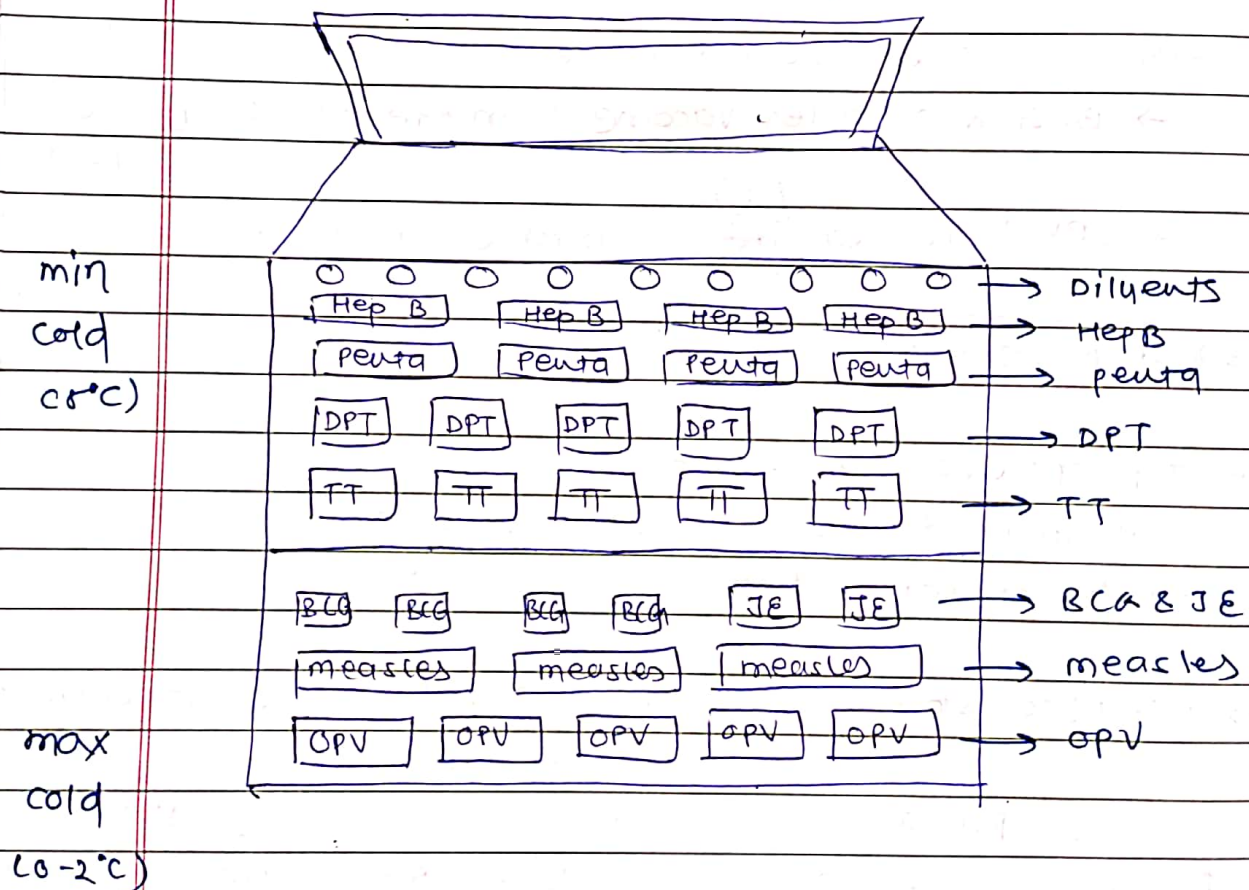
2 types : (i) lined with ice tubes (electolux)
(ii) lined with ice packs (vestfrost)

⇒ control panel of ILR:

(i) indicator : Green lamp (Electricity +)

(ii) thermometer : records temperature of compartment

(iii) thermostat : to adjust the temp inside



1) Refrigerator

- provided to every PHC
- careful maintenance of inside temp. ($0-8^{\circ}\text{C}$)

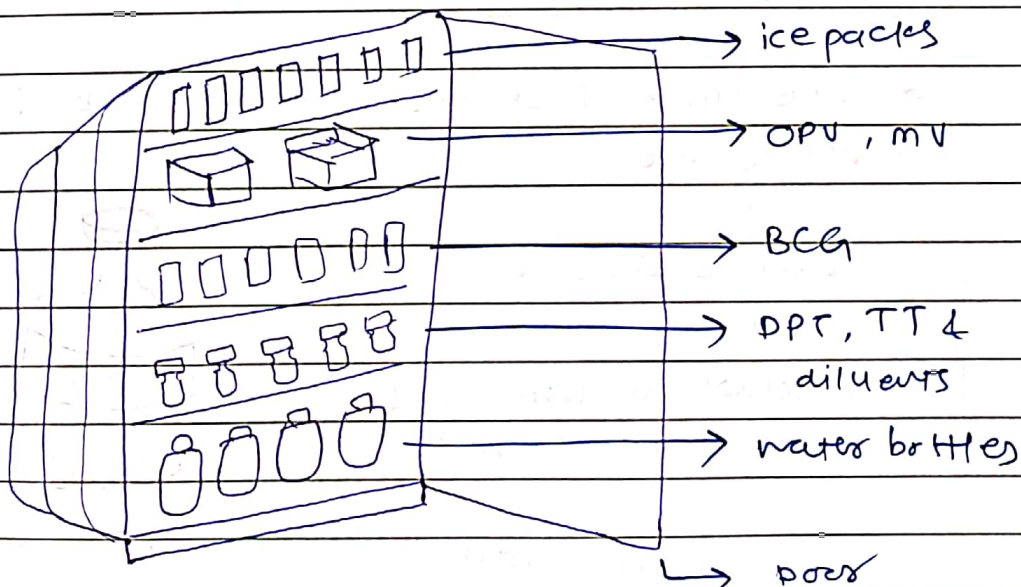
→ For efficient working

→ DO'S

- kept in cool room away from sunlight
- 10 cm away from wall
- voltage stabilizer to be used
- vaccine should be placed in definite order with space b/w the vials
- opened only when necessary
- temp. recording twice

→ DON'TS

- open frequently
- keep vaccines in the door
- food & drinks in fridge
- keep expired drugs (vaccines)

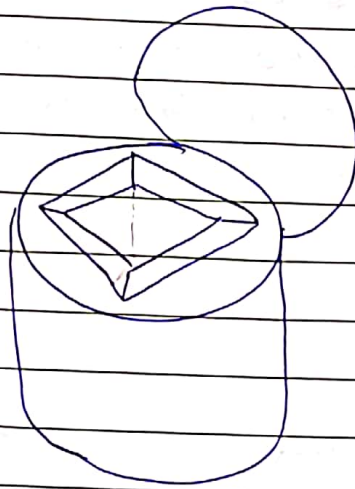


6) vaccine carriers :

- square shaped box
- made up of special insulated material
- lined by 4 ice packs
- cold life : 24 hours
- carry small quantities of vaccines from



PHC / subcenter → outreach station
(immunization camp)



5) shake test

- some time T series vaccine look frozen
- before use



vial is shaken

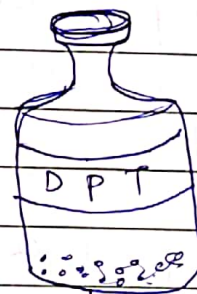


If solution : uniform : ①

: not uniform



denatured



Flocules

① Reverse cold chain:

→ maintaining cold chain in the reverse direction



point of use → vaccine testing laboratory

indication:

→ when potency of vaccine is doubtful

→ stool sample of a case of AFP has
sent to viral research laboratory,
for isolation of polio virus
under AFP surveillance

AFP = Acute Flaccid paralysis

vaccine institute

