



NEET-PG

PART-B

VOLUME-IV

SOCIAL & PREVENTIVE MEDICINE



SOCIAL & PREVENTIVE MEDICINE

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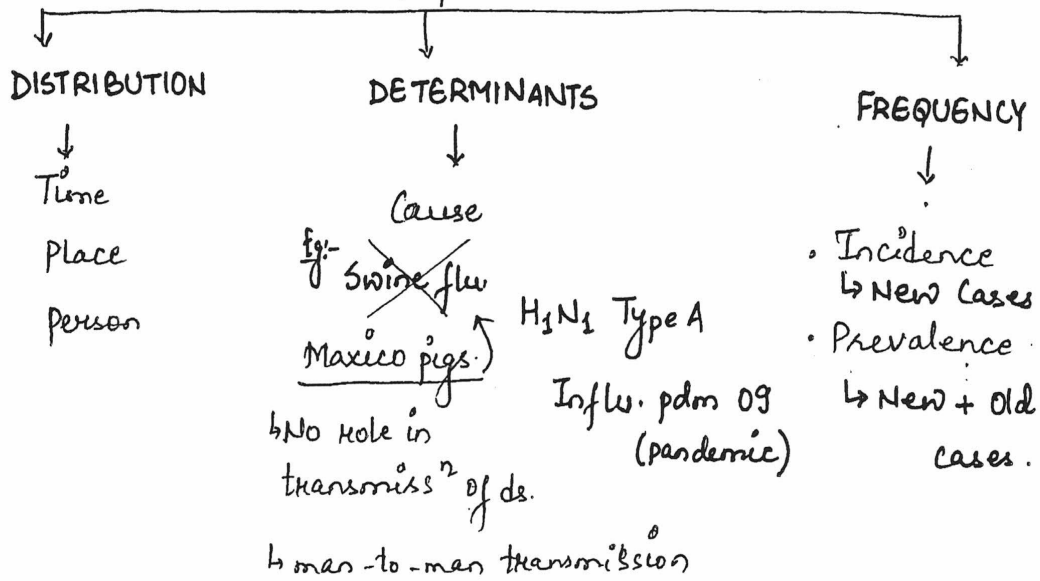
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EPIDEMIOLOGY

among people study

Defⁿ :- Epidemiology is the study of Diseases. [by John. M. Last]

Study of diseases.



DISTRIBUTION

SEASONAL / TIME DISTRIBUTION

- MALARIA
 DENGUE
 Winter { MEASLES
 C. POX
 INFLUENZA → in India, common in summer season.
 [H1N1, (H5N1, H7N9)] ⇒ types of bird flu but not in India
 TYPHOID / CHOLERA / FOOD POISONING.
 POLIO ROTAVIRUS
 DM HTN CHD, CANCER, HIV → occur any time in the year
 ↓
 • Chronic ds.
 • occur any time in year

MALARIA

Rainy season.

by Anopheles [sophisticated mosquito as it requires clear water for breeding]

Rural: An. culicifacies

Urban: An. stephensi

DENQUE

Rainy season.

Aedes Aegypti [Tiger mosquito]

* All resp. infection, more common in
⇒ winter

* Common diarrhoeal disease ⇒ common throughout the year except polio, rota virus.

POLIO

Rainy season. [July, Aug, Sept]

ROTAVIRUS

Winter season.

Neonatal Tetanus → was last disease & was eliminated from India.

Rainy season.

MAY fever →

• spring / winter season

Asthma

Winter season.

size of droplet [in resp. infection] $\Rightarrow < 5 \mu$ ⁵

Inter-person distance to transmit infection \Rightarrow Distance $< 1 \text{ meter}$

PLACE DISTRIBUTION

KALA AZAR \rightarrow Bihar, UP, W.B, Jharkhand ; sand fly (Phlebotomus)
 FILARIASIS \rightarrow coastal region ; Culex quinquefasciatus [C. fatigans]
 FLUOROSIS \rightarrow d/t excess of 'F' ; central / west India

\rightarrow Last case reported on 13/1/2011 [HOWRAH] [MP, Chhattisgarh, Andhra, Maharashtra, Rajasthan, Gujarat]

J. ENCEPHALITIS

GOITRE

MALARIA

DENGUE

MEASLES

C-POX, D, P, T, Mumps, Rubella, TB.

do not show place distribution.

[TYPHOID, CHOLERA, FOOD POIS.] \Rightarrow Every where ; not place distribution.

J.B \Leftarrow SCA, Thalassemia \Rightarrow in Punjab.

DM HIV Y. fever \Rightarrow Not show

POLIO

India was declared Polio free on 26/03/2014.
 yet not eliminated in India.

OPV [Sabin]

very rarely, it causes 2 types of paralysis a/w OPV

VAPP
 [vaccine asso. paralytic polio]

P₃
 [m/c/c]

VDPV
 [Vacc. derived polio virus]

C_{P2}
 [m/c/c]

Variety
 Community
 immuno def.
 ambiguous.

J.E

- caused by J.E. virus. [belongs to Arbovirus - B group]

A	B.	others
Ch. gunea	all imp. ds.	

- Vector → culex Triteniorhynchus [in India]
- Role of pigs in J.E → Amplifier host (⇒ organisms multiple; not affect the pigs)
- Actual host → Airdied birds [
- Accidental host → Man
- J.E. also requires → cattle & Horses [acts as mosquito attractants].
- Max^m cases reported → Eastern UP & WB
 [rice-growing states] [Gorakhpur]
 currently in 26 states

KFD

- Kyasanur forest, Karnataka
- Hemophysalis [Hard Tick] → vector
- also kn as Monkey disease

GOITRE

- in Himalayas [earlier; not now]
- It is no longer a place distribution disease in India

HIV

- Max^m in T. Nadu.
 - Andhra
 - Maharashtra
 - Karnataka
 - Manipur.
 - Nagaland.
- } • high risk prevalence.
- } • so good example of place distribution
- Country \bar{c} max^m cases of HIV \Rightarrow
S. Africa > Nigeria > India

Y. FEVER

- Causative agent \rightarrow Flavivirus fibricus
- Vector in world \rightarrow Aedes aegypti^a
- Dlt to +ve of Dengue Antibodies in Indian population \Rightarrow Y-fever.
- \Rightarrow this is kpr as cross-immunity

Cross-immunity

- Dengue Ab. $\xrightarrow{\ominus}$ Y. fever
- Duffy $\xrightarrow{\ominus}$ vivax
-ve
- S.C.A $\xrightarrow{\text{---}}$ falciparum
- Thalass.
- G.6PD
- Spherocytosis

NEW DISEASES - INDIA

[~ 130 Cr. \Rightarrow current population]

- ① H₁N₁
- ② NIPAH
- ③ CONGO fever
- ④ EBOLA \Rightarrow DELHI
- ⑤ LITCHI VIRUS DISEASE
- ⑥ ZIKA
- ⑦ PLASMODIUM OVALE

① H₁N₁

- 1st case - Pune.
- ~ 90% cases in metros cities [d/t international air travel]
- Shows place distribution [but TB donot show]

② NIPAH

- W.B of Kerala
- caused by bat eaten fruits

③ CONGO fever

- only found in Gujarat but now in Delhi also.
- 'Hyalomma' - hard ticks [vector of transmissⁿ]
- caused by \Rightarrow Nairovirus
- DOC \Rightarrow Ribavirin

⑥ ZIKA

- Transmitted by → *Aedes Aegypti*
- Started from → T. Nadu & Gujrat
- show place distribution

⑤ LITCHI VIRUS DISEASE

- WB
- it is d/t consumption of Litchi
 - ↓
 - in Empty stomach
 - ↓ causes
 - Hypoglycemia ⇒ leads to Death [children]
- clinical responsible for hypoglycemia :-
 MCG [Methyl cyclopropyl Glycine]

⑦ PLASMODIUM OVALE

Baroda, Delhi, Mumbai, Kolkata

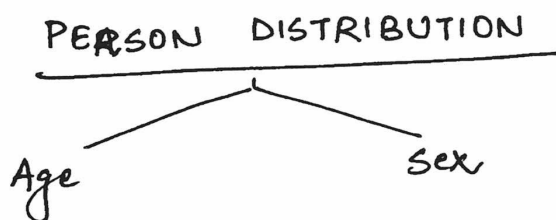
NEW DISEASES - WORLD.

[6.5 billion]

- ① H_1N_1 → Mexico, S. Asia
 - ② MERS → only in middle east countries.
 - ③ EBOLA
 - ④ ZIKA
- } ⇒ Africa
- ⑤ H_7N_9 → in 2013 [China]

② MERS

- variant of SARS [caused by Corona Virus] ²⁰⁰² 11
- caused by MERS-COV



AGE DISTRIBUTION

- ① Rh. fever
- ② Measles
- ③ Mumps
- ④ C. Pox
- ⑤ H₁N₁ ⇒ Not show age distribtn.
- ⑥ Typhoid, Cholera, food pois. ⇒ donot show age distribtn.
- ⑦ Malaria, Dengue ⇒ donot show age distribtn } Except in T.E.
- ⑧ DM HTN CHD Cancers
- ⑨ HIV, Polio, NNT
- ⑩ Rota virus.

① Rh. fever

- 5-15 yr
- non-communicable ds.

② Measles

- any age group.
- 99% occurs in 6 months - 3yrs. of age.

③ Mumps

- any age group.
- more common in 5-9 yrs of age [school going]

④ C. Pox

- more common in 5-9 yrs. of age
- affect any age.

Mid-day-meal food poisoning
↳ shows age distribution

DM

- shows age distribution
- ~ 30% Indian adults

HTN

- shows age distribution ; >40 yrs.
- ~ 50% of Indian adults will have HTN.
- m/c non-communicable disease of India

m/c disease in India ⇒

Dental disorder > worm infestation
70-90% (Round worm)
60-70%

CHD.

- shows age distribution ; >40 yrs.

Cancer

- any age group.
- shows age distribution.

J.E

- age group \rightarrow 1-15 yrs.
- never in infants

HIV

- show age distribution
- Reported max^m in age 30-44 yrs. ; But max^m transmissⁿ \Rightarrow 15-29 yrs.
- * legal age of marriage in India \Rightarrow 18/21 yrs.

POLIO

- Still int in \Rightarrow Pakistan, Afghanistan, Nigeria
- Not shows place distribution in India.
- affect any age. ; max^m in 0-5 yrs.

NNT

- max^m in 0-28 days.

Rotavirus.

- generally $<$ 1 yrs. ; affects any age.

AGE-GROUPS

Child \Rightarrow 0-18 yrs.

Adolescent \Rightarrow 10-19 yrs.

Early- 10-13 yrs
 mid- 14-16 yrs.
 Late 17-19 yrs

Reprod. age \Rightarrow 15-49 yrs.

HIV

- M:F = 1:7-10 [developed country].
- M:F = 3:2 [d/t lack of reporting of females]
but definitely more ^{cases} in female.

ICTC [Integrated counselling & testing centre]
↳ HIV testing occurs here

RTA

- Male

m/c subtypes of common diseases in India

TB ⇒ I-subtype ; Pulmonary > Extrapulmonary
(i) (Lungs) ↓
LN > GIT [ileo caecal
TB] > Bones [spine &
long bones]

LEPROSY ⇒ BT-type - Ridley - Jopling classification

MALARIA ⇒ falciparum [in India as well as world]

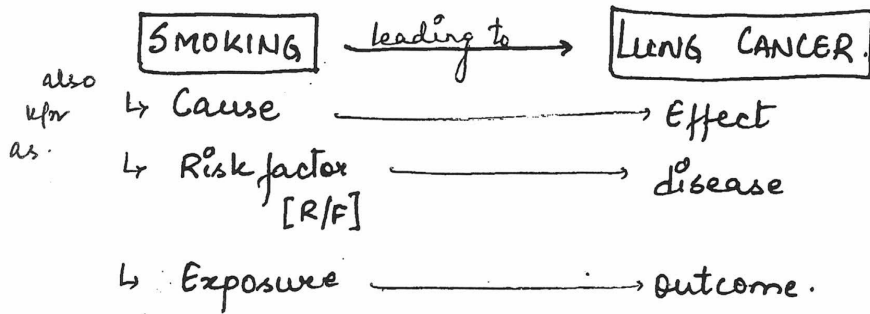
HIV ⇒ Ic

CANCERS ⇒

Males :- ① Lung Ca. [India + World]
② Lip/oral cavity Ca.

Females :- ① Breast Ca. [India + World]
② Cervico-uterine ca.

Total :- ① Breast Ca. [India + World]
② Cervico-uterine Ca.
③ Lung Ca.



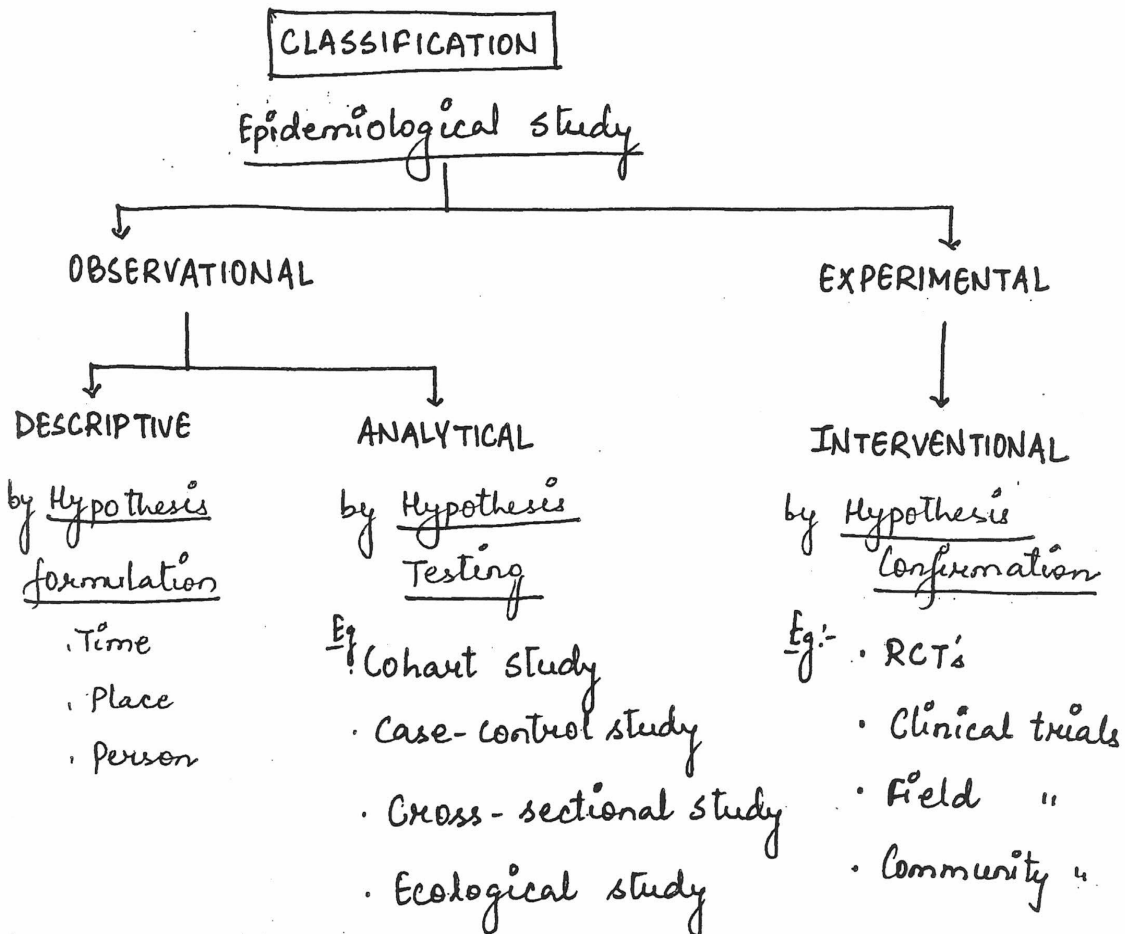
India.

47% \rightarrow \rightarrow

21% \rightarrow ♀

90% \rightarrow Doctors

} Smokers.



Interpretation

$RR > 1 \Rightarrow$ Association present

$RR = 1 \Rightarrow$ No association

$RR < 1 \Rightarrow$ Risk factor is protective
 • -ve / inverse association

② AR

$$AR = \frac{I_e - I_{ne}}{I_e} \times 100$$

Eg

$$\textcircled{a} \quad AR = \frac{\frac{80}{100} - \frac{10}{100}}{\frac{80}{100}} \times 100 = 88\%$$

here, 88% of lung cancer is ^{attributed} d/t smoking.

~~AR~~

③ PAR

$$PAR = \frac{I_T - I_{ne}}{I_T} \times 100$$

$I_T = \frac{\text{incidence}}{\text{Total}}$

Eg

$$\textcircled{a} \quad PAR = \frac{\frac{90}{200} - \frac{10}{100}}{\frac{90}{200}} \times 100 = 77\%$$