Health Indicators

Active Space

MORTALITY INDICATORS 00:45

INDICATOR	USE
Crude death rate	Risk of death in a population
Age specific death rate	Identify high risk age groups for mortality
Proportional mortality rate	• Identify most common cause of death • Mortality indicator for burden of disease
Case fatality rate	• Severity of disease • Indicate virulence
Age standardised death rate	Compare mortality pattern between two populations with different age structures
Standardised mortality ratio	Compare mortality between occupation & population

INCIDENCE VS PREVALANCE 07:20

INCIDENCE	PREVALENCE
New cases among population at risk	**Existing cases** at one point of time
Study: **Cohort Study**	Study: **Cross sectional study**
Measures **rate of occurrence** of disease	Express **proportion of diseased**
Requires **follow up**	Does not require such follow up
Denominator: Population at risk	**Denominator**: Total population
To study **cause to effect** relationship	Cannot be used
To study **etiological hypothesis**	Cannot be used
Indicates **risk** of developing disease	Indicates **burden** of disease
Does not depend on duration of illness	Depends on duration of illness (P = I x D)

NEW INTERVENTION: IMPACT ON INCIDENCE AND PREVALENCE 13:05

Intervention	Incidence	Prevalence = I x D
A new effective treatment for cancer/NCD	No change	Decrease
A new treatment for cancer prolonging survival but no cure	No change	Increase (prolonged duration)

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A new effective treatment for communicable disease	**Decrease (Transmission reduced)**	**Decrease (since I reduced)**
A new prophylactic intervention	Decrease (Prevent new cases)	Decrease (since I reduced)
Ex: Vaccine, chemoprophylaxis		

INDEX: HDI VS PQLI *17:00*

Human Development Index		**PQLI**
Dimensions	Indicators	
Knowledge	Mean years of schooling Expected years of schooling	IMR
Income	Per capita GNI	Literacy rate
Longevity	LE at birth	LE at age 1
To compare standard of living		To express quality of life

SUMMARY MEASURES OF PUBLIC HEALTH *21:00*

DALYs (Disability Adjusted Life Years	• To express burden of disease • Considers both mortality & morbidity of disease ❖ **DALYs = YLL + YLD** ▪ YLL – Years of life lost ▪ YLD – Years lived with disability
QALYs (Quality Adjusted Life Years)	• To express effectiveness of intervention • Quality of life : Expressed by Utility value
HALE (Health Adjusted Life Expectancy)	• No. of years a newborn can live in full health • Lesser than life expectancy

HEALTH INDICATORS

27:55

Morbidity Indicators	Notification route, OPD attendance, Admission rate, Duration of hospital stay, Spells of sickness/Sickness absenteeism Incidence/Prevalence	
Health Care Delivery	Doctor population ratio, Population bed ratio, Population per PHC	
Health Care Utilization	% of infants immunized, Bed occupancy rate, Average length of stay, Bed turnover ratio	
Health Policy Indicators	% GDP spent on health	
Disability Indicators	**Event type** No. of days of no activity Bed disability days	**Person type** Limitation of mobility

Active Space

Infectious Diseases Epidemiology

Active Space

MODES OF TRANSMISSION 00:15

Direct Transmission	Indirect Transmission
1) Direct contact: Contact, Sexual intercourse	1) Vehicle borne: Food, water
2) **Droplet Infection:** The droplet spread is limited to a distance of 30-60 cm between source and host	2) **Air-borne:** -Droplet nuclei: 1-10 microns dried residues of droplets -Dust
3) Contact with soil	3) Vector borne
4) Inoculation into skin/mucosa: Needle, Dog bite	4) Fomite borne
5) Transplacental (Vertical)	5) Unclean wounds

TIME IN EPIDEMIOLOGY 05:10

Incubation Period:	Time between exposure & first sign/symptoms
Median Incubation Period:	Time required for 50% of cases to occur after exposure
Generation Time:	Time taken from receipt of infection to develop maximum infectivity
Serial Interval:	• Gap in onset between primary case and secondary case • Indirect estimate of incubation period
Period of communicability:	Time during which an infectious agent may spread
Latent period:	• Period from disease initiation to disease detection • Used for NCDs

INCUBATION PERIOD 11:20

IP : Depends upon-	Uses of IP :
1) Portal of entry	1) Tracing the **source** of infection
2) Infectious disease	2) To decide to **vaccinate contacts** or not
3) Generation time or doubling time of agent	3) To **classify epidemics**
4) Susceptibility of host	4) To estimate **prognosis**: Short IP-Worst prognosis

	5) To decide Period of quarantine: Max IP
	6) To decide Period of **surveillance after an outbreak**: 2 x IP

Active Space

MEASURES OF SPREAD *21:10*

Attack Rate (AR)	Reflects extent of epidemic AR = $\frac{No.\ of\ new\ cases\ x\ 100}{Population\ at\ risk}$
Secondary Attack Rate (SAR):	To assess communicability within closed contacts PYQ SAR = $\frac{\text{No. of secondary cases}}{\text{'susceptible' contacts}}\ x\ 100$
Basic reproduction number	Number of cases generated by one case in completely susceptible population PYQ
Effective reproduction number	Number of cases generated by one case Mixed population (Immune + Suscptible)

PERIOD FLUCTUATION : TYPES *27:30*

	Seasonal trend:	Cyclical trend -
	Wrt season	Is occurrence of a disease in cycles (Weeks, months or years)
Reasons:	• Environmental condition PYQ e.g. temperature, rainfall • Vector variations	Build up of susceptibles is required (Herd immunity variations) ex: Measles PYQ Antigenic variations ex: Influen
Ex:	• PYQ Measles, varicella - early spring • URTI - winter • Acute gastroenteritis - summer	• Measles (every 2-3 years) • Rubella (every 6-9 years) • Influenza pande (10 years)

DEFINITIONS *32:40*

Epidemic	• Cases in excess of normal expectancy

Endemic	• Constant presence of a disease in a defined geographical area **Types of Endemic:** • Hyper - endemic[PYQ]: Constant presence of a disease at high level affects all age groups equally • Holo-endemicPYQ: Active transmission among children compare
Pandemic	• Country-to country spread Ex: Swine flu COVID-19
Sporadic	Haphazard and irregular distribution of cases[PYQ] Ex: JE in uttar Pradesh

EPIDEMIC : TYPES

39:14

Single exposure (Point source epidemic)	Continuous / Multiple exposure	Propagated Epidemics
Sharp rise and sharp fall No secondary waves[PYQ] All cases develop within 1 IP Ex: Food poisoning[PYQ] Bhopal gas tragedy Minamata disease	Sharp rise' in no. of cases Secondary waves present[PYQ] Cases develop after IP Ex: • Contaminated well[PYQ] • Contaminated food stocks/Vaccine[PYQ] • Prostitute for gonorrhea	Gradual rise and gradual fall over a long time with some second waves Results from person - to - person transmission[PYQ] Cases can develop after Speed of spread upon immunity Ex: Polio

SURVEILLANCE : TYPES

45:35

Passive Surveillance:	• Data reported to the health systems • Patient visits health centres and cases are notified

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Active Surveillance:	• Search for cases Ex: • Fortnightly visits for malaria (By health worker male)[PYQ] • AFP surveillance[PYQ] • Kala azar fortnight • Leprosy case detection campaign
Sentinel surveillance	Data collection from sentinel units like selected medical college **Uses:** • To estimate trends in larger population[PYQ] • To identify missed cases [PYQ]

Active Space

Vaccines and Prevention

Active Space

VACCINES : TYPES 00:20

Live Vaccines	Killed Vaccines	Subunit vaccines[PYQ]			
		Toxoid	Protein	Recombinant DNA	Poysaccharide
BCG	IPV	Diptheria	Influenza	Hep B[PYQ]	Meningococcal ACWY[PYQ]
Measles / MR / MMR	Rabies vaccine	Tetanus			Typhoid Vi
Rotavac	Cholera – Dukoral				Pneumococcal
JE (SA 14-14-2)[PYQ]	Pertussis[PYQ]				Hib
Yellow dever (17D)[PYQ]	Killed plague vaccine				
Typhoral – Ty21a	Killed influenza				
Live plague vaccine	JE – Nakayama Beijing strain[PYQ]				
Live influenza	KFD vaccine				
Varicella vaccine[PYQ]					
OPV					

NATIONAL IMMUNISATION SCHEDULE 06:20

At birth	BCG, OPV-zero dose, Hep B-birth dose
6 weeks	OPV-1, Pentavalent-1, Rota-1*, fIPV-1, PCV-1*
10 weeks	OPV-2, Pentavalent-2, Rota-2*
14 weeks	OPV-3, Pentavalent-3, Rota-3*, fIPV-2, PCV-2*
9 months	Measles-1/MR-1, Vit A, JE-1*, PCV-B* IPV 3rd dose

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16-24 months	DPT first booster dose, OPV-booster dose, measles-2/MR-2, JE-2*
5-6 years	DPT second booster dose
10 & 16 years	Td
For pregnant woman	Td-1: early in pregnancy Td-2: 4 weeks after Td-1 Td-B: If pregnancy occur within 3 years of last pregnancy and 2 Td doses were received

ADVERSE EFFECTS OF VACCINES

14:10

Vaccine	Adverse effect	Onset
BCG	• Suppurative lymphadenitis • BCG osteitis • Disseminated BCG infection	2-6 months 1-12 months 1-12 months[PYQ]
Measles / MR / MMR	• Febrile seizure • Thrombocytopenia[PYQ] • Encephalopathy • Toxic shock syndrome[PYQ]	- - - 24-48 hrs
OPV	• VAPP (Vaccine associated paralytic polio)[PYQ]	4-30 days
Pertussis (Whole cell)	• Persistent (>3 hours) screaming • Seizures • Hypotonic, hypo responsive episode (HHE)[PYQ] • Encephalopathy	- - 0-48 hours
Tetanus toxoid / Td	• Brachial neuritis	
Rotavac	• Intussusception[PYQ]	
Influenza (killed)	• Gullain bairre syndrome[PYQ]	
Yellow fever (17D)	• Vaccine associated viscerotropic disease	

AEFI CLASSIFICATION

22:55

Product related reaction[PYQ]	Limb swelling after DPT
Quality defect related reaction	Failure to inactivate IPV leads to paralysis
Immunization error[PYQ]	Infection after contaminate Toxic shock syndrome

Anxiety reaction	Vaso-vagal syncope
Coincidental	Fever by malaria

UPPER LIMITS FOR 1ST DOSE

26:05

Till 1 year	BCG, Pentavalent[PYQ] Rotavac, IPV, PCV
Till 5 year	OPV, measles / MR
Till 7 year	DPT[PYQ]
Till 15 year	JE

SENSITIVITY OF VACCINES

27:40

Heat sensitive	Reconstituted BCG > OPV
Freeze sensitive	Hep B >
Light sensitive	BCG, Measles, MR/MMR

Vaccines sensitive to heat (Most → Least)

- BCG (after reconstitution)
- OPV
- IPV
- Measles, MR
- Rotavirus
- JE
- DPT
- BCG (before reconstitution)
- TT
- Penta, HepB, PCV

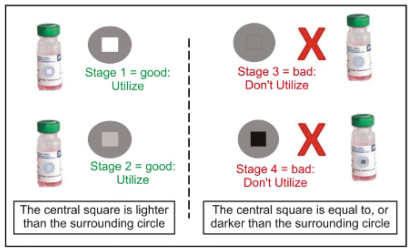
Vaccines sensitive to freezing (Most → Least)

- HepB
- PCV
- Penta
- IPV
- DPT
- TT

VVM : VACCINE VIAL MONITOR

30:00

- VVM indicates cumulative heat exposure[PYQ]
- Cannot indicate freeze exposure
- Cannot directly indicate potency/efficacy[PYQ]

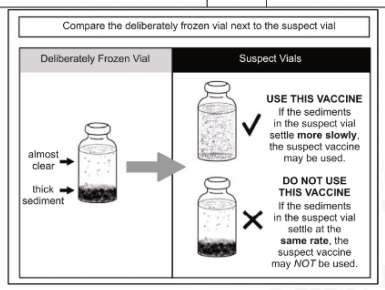


Active Space

SHAKE TEST *32:10*

- It is done on suspect vial to check for freeze damage[PYQ]
- To check rate of sedimentation between control and test vials

Sedimentation in test vial	Slow	Fast / same place
	Use	Discard



OPEN VIAL POLICY *34:00*

Open vial policy:	• Reuse of partially used multi dose vials in subsequent session up to four weeks (28 days)[PYQ] • To reduce vaccine wastage
Conditions that must be fulfilled for the use of open vial policy:	• Date and time mentioned[PYQ] • The expiry date has not passed • Stored under appropriate cold chain condition • Vaccine vial septum has not been submerged contaminated • Aseptic techniques used to with draw vaccine • VVM: has not reached the discard point[PYQ]
Not applicable to:	• BCG, Measles/[PYQ], JE, Rotavac
Applicable to	• DPT, Td, OPV, IPV, PCV, Hep B.

LEVELS OF PREVENTION *38:34*

Levels	Purpose	Modes of intervention
Primordial level	Prevent onset of risk factors	Mass education
Primary level	Risk factor modification	Health promotion Specific protection[PYQ]

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Secondary level	Prevent complications[PYQ]	Screening/early detection[PYQ] Diagnosis Treatment
Tertiary level	Improve quality of life	Disability rehabilitation[PYQ]

Active Space

Study Designs

Active Space

CASE STUDY VS CASE SERIES 00:25

CASE STUDY / CASE REPORT	CASE SERIES
-To study one typical case	-To study set of cases with atypical manifestation
-Ex: A patient working in dye industry presenting with numbness of feet	No comparison group (Contrast used in case control study)
	-Ex: A group of slum dwellers presented with dementia

CROSS SECTIONAL STUDY 03:50

- Study is done at one point of time
- So k/a snapshot study

USES	LIMITATIONS
To estimate 'Point Prevalence'	No incidence
To estimate burden of disease	No temporal association Not used for etiological purpose

CASE CONTROL STUDY : STEPS 06:45

Selection of cases	With disease under study
Selection of control:	Controls must be free from disease under study Sources of controls: General population: Ideal way to select healthy Hospital controls: From OPDs
Matching	It eliminates the effect of known confounding
Retrospective assessment of exposure:	To check pattern of exposure in both cases
Analysis	To estimate exposure rates and Odds

DIFFERENCE

14:10

CASE CONTROL STUDY	COHORT STUDY
Proceeds from effect to cause	Proceeds from cause to effect
Comparing exposure between cases vs controls	Comparing incidence between exposed vs non exposed
Retrospective	Can be prospective or retrospective
Relatively quick to conduct	Time consuming (Prospective study)
Relatively inexpensive	Costlier
Can study multiple exposures for a disease	Can study multiple outcomes
Suitable for rare disease	Not suitable
Recall bias seen	Attrition bias
Odds ratio is estimated	Can calculate risk ratio or

MEASURES OF RISK

23:55

	Formula	Use
Relative Risk (Risk ratio)	Incidence in exposed / Incidence in non-exposed	Direct measure of the strength of the association between suspected cause & effect RR = 1: No association RR > 1: Position association RR < 1: Negative association
Attributable Risk Aka Risk difference.	I exp- I non-exp x 100 / I exp	To express amount of which can be prevent exposed if exposure is
Population Attributable Risk (PAR)	I total population - I non-exp x 100 / I total population	

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RANDOM SAMPLING VS RANDOMISATION *29:25*

Random sampling	Randomisation
• Aka Random selection	• Aka Random allocation/assignment
• Select study subjects from reference population	• Allocate groups to receive new intervention or placebo
• Eliminate selection bias : During selection of study subjects	• Eliminate selection bias : During treatment allocation
• Equal chance of selection	• Equal chance of receiving either intervention/placebo
• Study sample will represent reference population	• All prognostic factors are equally distributed between 2 groups : Increase comparability among the study subjects
• Results can be generalised to reference population : k/a External validity	• Results are applicable within study subjects : K/a internal validity
• Can increase External validity	• Can increase internal validity

CROSS OVER RCT *37:10*

Advantages	Disadvantages
• It helps removing ethical concerns : because both groups will receive new intervention either in phase 1 or phase 2	• For curative treatments or rapidly changing conditions, cross-over trials may be infeasible or unethical. So not used in these conditions
• The same patient who was recieving new intervention in phase 1 will receive placebo in phase 2. So patient serves as their own control.	• Preferred mainly for chronic conditions

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METHOD USED TO CONTROL COFOUNDING *41:23*

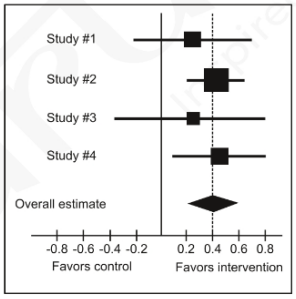
During study	Randomization	• Under RCT • Can eliminate known and unknown confounders
	Restriction	Limiting study to people who have particular characteristics
	Matching	• Useful in case control studies • Eliminate known confounders
During analysis	Stratification	Grouping common characterstics
	Statistical modelling	• If many confounding variables exist • Neutralising effect

META ANALYSIS : STEPS *45:30*

Eight Steps of Meta Analysis

1. Define the Research Question
2. Perform the literature search
3. Determine eligibility of studies
   - Inclusion: which ones to keep
   - Exclusion: which ones to throw out
4. Extract the data from studies
5. Analyze the data in the study statistically
6. Examine heterogeneity
7. Assess publication bias
8. Interpret and Report the results

FOREST PLOT: Report results



Active Space

Health Programmes

Active Space

TB: NTEP 00:27

DIAGNOSIS

- TB suggestive symptoms – Fever>2 weeks, Cough>2 weeks, Hemophysis & weight loss
  - Any one symptom present → Perform Diagnostic tests
- Diagnostic test
  - CBNAAT
  - Called as Universal Drug Susceptibility testing / Universal DST
  - This is done in all patients before treatment

TREATMENT

1) Drug Sensitive TB
   - 6 months course
     - Daily regimen
     - 2 months HRZE + 4 HRE
       (Intensive phase + Continuation phase)
     - Both HRZE and HRE come in one tablet each according to Fixed Dose Combinations (FDC)
     - Total 5 weight bands in adults for management in Drug Sensitive TB

2) HIV – TB
   - In all HIV patients, Tuberculosis must be ruled out and in all Tuberculosis patients, rule out HIV
     - This is called Cross Referral Mechanisms
     - The most common opportunist infection in HIV patient in Tuberculosis
     - Most common reason for death in HIV patient in Tuberculosis infection
   - Diagnosis of TB in HIV patients
     - CBNAAT
   - Treatment
     - If TB and HIV are diagnosed together → Start TB treatment first, ATT that is Then, add ART

3) TB Preventive Therapy / Prophylactic Therapy
   - In Dormant stage / latent infection, TB should not reactivate → PROPHYLACTIC THERAPY
   - Indications for Prophylactic therapy
     - HIV patients
     - Household contacts of Active TB cases
     - Patients on Immuno Suppressive therapy
   - Drug Regimen: 6 months ISONIAZID daily
     Drug Regimen for adults: 3 months ISONIAZID + RIFAPENTIN weekly
     Drug Regimen for infants: ISONIAZID only

NIKSHAY
- Its a website for online notification of TB cases to higher authorities
- Monthly reports
- District TB officers is notified through NIKSHAY

MANDATORY NOTIFICATION OF TB CASES
- TB cases SHOULD be notified
- If cases are not notified, PINISHABLE under IPC 269/270
- For notifying TB cases, incentives provided
  - Total incentive: 1000 per patient i.e 500 for notification and 500 on treatment completion
- Who can notify? Doctors, Laboratories, chemist

NIKSHAY POSHAN ABHIYAN
- It is Direct beneficiary transfer scheme
- A set amount of money is sent to the patient's bank account
- Incentive: 500 per month for treatment
- Purpose: Nutritional support

99 DOTS
- System to monitor TB adherence to treatment
- Anti TB blister packs for managing TB
- Beneath the tablets, there are numbers
- Patient gives a missed call to the number below which is unique in each case
- There's a particular software that identifies the call and it signifies that patient is dispensing the tablet
- This helps in monitoring the treatment or management of the patient
- Counselling can be provided by the doctors in cases where initiative is not taken by patient

NATIONAL STRATEGIC PLAN FOR TB ELIMINATION (2017 – 2025)
- Targets
  - 80% reduction in TB incidence
  - 90% reduction in TB mortality
  - 0% patients should have no catastrophic expenditure due to TB

- 4 pillars for TB elimination plan
  - DETECT
  - TREAT
  - PREVENT
  - Build PARTNERSHIPS: Other sectors & industries must be involved in preventing TB

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END TB STRATEGY (WHO)

- Goal: End Tuberculosis epidemic, GLOBALLY, by 2035
- Targets:
  - 90% reduction in TB incidence
  - 95% reduction in TB deaths
  - Zero TB affected families

RMNCH +A
REPRODUCTIVE, MATERNAL, NEWBORN, CHILD AND ADOLESCENT HEALTH

12:30

➢ **FOR ADOLESCENT HEALTH**

RASHTRIYA KISHOR SWASTHYA KARYAKRAM / RKSK

- This initiative's target audience are the Adolescents i.e., age group 10 – 19 years
- Initiatives under the program
  - Nutrition: Promote nutritional status that is reduce obesity etc.
  - ARSH – Adolescent Reproductive and Sexual Health: Focusses on health issues related to Reproductive and Sexual health like hygienic practices, counselling adolescents
  - Mental Health: Counselling and support to adolescents
  - Injuries: Prevent injuries and also reduce Gender Based Violence
  - Substance Use: Adolescents more than any age group are more prone to abuse substances and hence the program emphasizes substance and its effects
  - Non – Communicable Diseases: Adolescents obesity is a precursor for disorders like Hypertension and other co-morbidities hence emphasized in RKSK to monitor it among adolescents

MENSTRUAL HYGIENE SCHEME

Component of RKSK:

- This scheme caters to Rural adolescent girls
- Under this scheme, free sanitary pads are given to girls under Brand name, FREE DAYS
- Helps promote menstrual hygiene

PEER EDUCATION PROGRAMME

- It is to counsel adolescents
- A number of adolescents from the same locality are trained to become SAATHIYAS
- The Saathiyas then address their peers from the same age group making it easier to communicate and counsel
- This initiative was also taken by RKSK

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WEEKLY IRON FOLIC ACID SUPPLEMENTATION PROGRAMME (WIFS)

- This program is to address the growing concern of Anemic suffering adolescents. Weekly once: Blue Tab – 60 mg elemental iron and 500 microgram Folic Acid

➢ **FOR MATERNAL HEALTH**

NISCHAY

- It is Pregnancy Testing Kits for free of cost
- Initiative is taken at grass root level, sub center level and ASHA workers

JANANI SURAKSHA YOJANA / JSY

- This program highlights cash incentives for deliveries
- It basically promotes the notion for women to visit the hospital and undergo delivery
- Helps reduce maternal mortality

JANANI SHISHU SURAKSHA KARYAKRAM / JSSK

- A pregnant woman is eligible for free services like Diet, Drugs, Diagnostics, Transport facilities for home to hospitals
- Free services for infants under 9 years as well
- Aim is to reduce out of packet expenses

PRADHAN MANTRI SURAKSHIT MATRITVA ABHIYAN / PMSMA

- These are Ante-natal clinics on 9th of every month
- Aim is to identify danger signs which aren't identified in periphery
- They run from Primary Health Centers and above
- A sticker is posted on the pregnant woman's wrist
  - Green colour sticker: No risk factors
  - Red colour sticker: High risk pregnancy
  - Blue colour sticker: Pregnancy induced Hypertension
  - Yellow colour sticker: Associated with co-morbid conditions like Diabetes, STDs, hypothyroidism

LAQSHYA

- LAQSHYA scheme promotes labour room quality
- Develop and improve labour rooms
- Applicable from Community Health Centers and above, not Primary Health Centers

DAKSHATA

- Under this scheme, Doctors and nurses are trained for delivery practices
  - Intrapartum care, and
  - Immediate Post-partum care

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Active Space

SURAKSHIT MATRITVA AASHWASAN / SUMAN

- Purpose of this scheme is to Reduce maternal mortality
- Aashwasan here means Guarantee so it is to guarantee or achieve 0% mother and infant mortality
- Service Guarantee charts are displayed in the hospitals so as to bring to notice of the pregnant woman
- Under the scheme, any denial of service is not tolerated
- Beneficiaries have the option to register complaints and have their grievances addressed

JANANI SURAKSHA YOJANA

- States – They are classified based on % of hospital deliveries
  - Low Performing States: Uttar Pradesh, Uttarakhand, Madhya Pradesh, Chattisgarh, Bihar, Jharkhand, Rajasthan, Odisha, Jammu – Kashmir, Assam
  - High Performing States: Other states

- Eligibility for cash assistance
  - In low performing states: All pregnant women receive incentives without the need to produce certificates
  - In high performing states: Cash provided for BPL and SC-ST identifying pregnant women
  - Provided irrespective of age and parity

- CASH incentives

	RURAL AREA		URBAN AREAS	
	Mother	ASHA	Mother	ASHA
LPS	1400	600	1000	400
HPS	700	600	600	400

- Role of ASHA workers
  - Acts as co-ordinator and promotes hospital deliveries
  - Counsels pregnant women
  - Advising on how to handle the pregnancy

➢ **FOR CHILD HEALTH**

HOME BASED NEWBORN CARE / HBNC

- ASHA workers play a big role
- ASHA workers pay home visits to families

Active Space

- The workers are trained under ASHA module which trains them for identifying dangerous or illness related signs and to refer the child to higher centers – subcenters

- They work at village level
- Number of visits
  - 7 visits for home delivery
  - 6 visits for hospital delivery – vaginal delivery
  - 5 visits for hospital delivery – CS
- Incentive provided to ASHA worker for visits per child – 250 rupees

HOME BASED CARE OF YOUNG CHILD / HBYC
- Home visits are done by ASHA workers
- Number of visits are 5 (3, 6, 9, 12, 15th months)
- ASHA worker counsels mother on exclusive breast feeding, weaning, feeding
- Focusses on Nutrition and Growth monitoring
- Incentive provided to ASHA worker → 250 Rupees

FACILITY BASED NEWBORN CARE
- This is based on hospital level
- Special newborn care unit / SNCUs: This is at District Hospital / Sub-District Hospitals
- Newborn Stabilisation Units / NBSUs: This is at Community Health Centers / First Referral Units
- Newborn Care Corners / NCCS: Present in all labour rooms

INDIAN NEWBORN ACTION PLAN / INAP
- Under this plan, India needs to achieve single digit neonatal mortality rate and Still Birth Rate by 2030

RASHTRIYA BAL SWASTHYA KARYAKRAM / RBSK
- Under this scheme, emphasis is placed on screening and Early intervention
- Age groups targeted is 0 – 18 years
- Screening for 4Ds:
  - Defects
  - Deficiencies (Vitamin A, Anemia, Vitamin B, Goitre, Severe Acute Malnutrition)
  - Diseases
  - Developmental delays and Disabilities
- Any abnormality if detected then they are referred to → District Early Intervention Center

MOTHERS ABSOLUTE AFFECTION / MAA
- Promotes Exclusive Breast Feeding

Active Space

SOCIAL AWARENESS AND ACTION TO NEUTRALIZE PNEUMONIA SUCCESSFULLY / SAANS

- Aim is to reduce deaths from pneumonia
- Intervention is through creating awareness at community level, health education, acting at sub-center level and referrals in future

MUSKAN

- Provides Child-friendly services in Government hospitals
- It focusses on in-patient services where the setup provided is child friendly

NVBDCP

NATIONAL VECTOR BORNE DISEASE CONTROL PROGRAMME (FOR ELIMINATION OF: MALARIA, KALA AZAR, FILARIARIS, CHIKUNGUNYA, DENGUE, JAPANESE ENCEPHALITIS) *34:30*

➢ **MALARIA**

TREATMENT

- Falciparum
  - Most common plasmodium in India is Falciparum
  - Drug Regimen: ACT (Artesunate and Sulfadoxine - Pyrimethamine) for 3 days + Primaquine 1 dose
  - Primaquine prevents Recrudescence
  - North east states: Artemether + Lumefantrine
  - Other states: Artesunate + Sulfadoxine - pyrimethamine
- Vivax
  - All states: Chloroquine + Primaquine for 14 days
  - Primaquine prevents Relapse by removing Hypnozoites
- Mixed infection
  - ACT for 3 days + Primaquine for 14 days
  - ACT takes care eliminating both falciparum and vivax while primaquine prevents relapse
- Ovale
  - Same management as Vivax
  - Chloroquine + Primaquine for 14 days
- P. Malariae
  - Same treatment as falciparum
  - ACT for 3 days + Primaquine for 1 day

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MALARIA IN PREGNANCY
- Primaquine is contraindicated in pregnancy
- Falciparum
  - First Trimester - Quinine
  - ACT is contraindicated in First trimester
  - Second and Third Trimester - ACT
- Vivax → Chloroquine

CHEMOPROPHYLAXIS
- Indicated for Travellers:
  - In Falciparum endemic areas, chances of mortality due to malaria is high
  - Chemoprophylaxis is provided depending on Duration of stay which could be short term or Long Term Stay
  - Short Term Stay / Upto 6 weeks: Doxycycline
  - Long Term Stay / 6 weeks and more: Methoquine
  - If both the above drugs are contraindicated then chloroquine can be used

➢ **KALA - AZAR / VISCERAL LEISHMANIASIS**

ELIMINATION TARGET
- Incidence < 1 case per 10K at block level that is District level

KALA – AZAR SUSPECT
- Fever
- Anemia
- Hepatosplenomegaly
- Not responding to Anti - malarials

DIAGNOSIS
- Kala Azar rapid diagnostic kit is available
- A drop of blood of suspected patient needed to detect the antibodies
- Antigen RK89 is targeted by antibodies present and those are detected using the kit
- Results are given in 5 minutes
- Two lines along with control line is POSITIVE RESULT
- On positive result, next course of action is to provide treatment

TREATMENT
- If Diagnosis positive through the Diagnostic kits, then there's no need for additional confirmation by Biopsies etc.
- DOC: Single dose infusion of Liposomal Amphotericin B
- Oral Drug: Miltefosine
  - Miltefosine is DOC for Post Kala Azar Dermal Leishmaniasis

Active Space

ACTIVE CASE FINDING
- When health workers go to community, they are asked to do Kala Azar FORTNIGHT
- The health worker has to reside in the community for 15 days and identify all active cases of Kala Azar
- Done once in 3 months

INDOOR RESIDUAL SPRAY
- Vector for Kala Azar in India – Phlebotimus Sandfly
- The vector is commonly found in rural areas in cattle sheds
- The vector does not fly, it only hops to a height of 6 feet
- Insecticide used to eliminate these vectors → SYNTHETIC PYRETHEROIDS

➢ **FILARIASIS**

ELIMINATION STRATEGY
- Target year 2027 to eliminate the disease
- Strategy adopted (mnemonic – Make My Trip)
  - Mapping: Locate endemic areas by detecting antigenicity using immunochromatographic test / ICT and if prevalence > 1% then its an endemic area – Then, start Mass Drug Administration
  - Mass Administration:
    - Triple drug therapy → Ivermectin, DEC, Albendazoles
    - Ivermectin prevents River blindness and filariasis
    - Annually / Once a year
    - Done continuously for 5 years
  - Transmission Assessment Survey:
    - This is for checking if infection level is above or below Threshold level
    - If level of infection is below threshold level – Stop MDA

MCQ:
PYQ – Transmission Assessment Survey is done for which disease?
PYQ – What is role of Ivermectin?

NACP

NATIONAL AIDS CONTROL PROGRAMME *52:35*

ANTI RETROVIRAL THERAPY / ART
- As soon as HIV is diagnosed, treatment started without further delay and testing for $CD4^+$ counts / staging
- Adults:
  - Age > 10 years and weight > 80 kg
  - Use Tenofovir, Lamivudine, Dolutegravir combination

Active Space

- Given in one tablet in fixed dose combination
- CD4 counts are done once every 6 months and helps monitor treatment

- Age 6 – 10 years: Abacavir, Lamivudine, Dolutegravir
- Age < 6 years: Abacavir, Lamivudine, Lopinavir / Ritonavir

PPTCT: PREVENTION OF PARENT TO CHILD TRANSMISSION

- If mother HIV positive
  - Start treatment with TLD drugs combination
  - Start treatment irrespective of gestation / CD4 counts / staging
  - After delivery, do not shift to any other combination

- Newborn
  - In newborn, prophylaxis is done
  - Mother on ART: Nevirapine
  - Mother not on ART: High risk infant: Nevirapine + Zidovudine
  - Minimum duration of prophylaxis is 6 weeks and Maximum duration is 18 months

- Early infant diagnosis: at 6 weeks
- Confirmation testing: at 18th month
- Breast feeding is not contraindicated
- Ideal – Artificial feeding
- Mixed feeding must be avoided

POST EXPOSURE PROPHYLAXIS

- Age > 10 years and weight > 30 kg – Tenofovir, Lamivudine, Dolutegravir
- Age 6 – 10 years and weight > 20 kg – Zidovudine, Lamivudine, dolutegravir
- Age < 6 year or weight < 20 kg – Zidovudine, Lamivudine, Lopinavir / Ritonavir
- Best according to WHO: TED – Tenofovir, Emtricitabine, Dolutegravir
- PEP must be started within 12 hours and continue for 4 weeks

NATIONAL STRATEGIC PLAN

- Targets:
  - By 2020, 90% AIDS cases detected
  - Within those 90% detected, 90% must receive treatment
  - Within those 90% being treated, 90% must show Viral load suppression
- Revised Target:
  - By 2024, 95% AIDS cases must be detected
  - Among the 95% detected, 95% must receive treatment
  - And, among the 95% receiving treatment 95% cases must show Viral load suppression

POLIO ELIMIATION

01:03:30

POLIO FREE – INDIA / SEAR

- India was confirmed polio free in March 2014
- Last case was detected in 2011

POLIO FREE WHO REGIONS

- Out of the 6 regions under 5 have been eliminated of Polio

POLIO ENDEMIC REGION

- East Mediterranean Region

POLIO ENDEMIC COUNTRIES

- There are 2 polio endemic countries
- Countries are: Pakistan, Afghanistan
- These 2 countries are under East Mediterranean region of WHO

WILD POLIO STRAINS ERADICATED

- Serotypes WPV2 and WPV3 have been eradicated
- WPV1 is still reported in Pakistan and Afghanistan

VDPVS

- These are side effects of polio vaccine
- Most common VDPV is MC – C VDPV
- There's a mutation in type 2 component
- To prevent it: Switch from Trivalent OPV to Bivalent OPV

VAPP: VACCINE ASSOCIATED PARALYTIC POLIO

- Mutation in Sabin 3 component
- Prevention: Shift from live vaccine to killed vaccine

LEPROSY

01:07:20

DIAGNOSIS

- It is done based on counts: Paucibacillary and Multibacillary
- Paucibacillary: 2 – 5 patches or lesions on skin and < 1 nerve involvement
- Multibacillary: > 5 patches or lesions on skin and > 1 nerve involvement

TREATMENT

- Red packs are used
- Day 1: Rifampicin (600 mg), Clofazimine (300 mg) and Dapsone (100 mg)
- Day 2 – 28: Dapsone (50 mg), Clofazimine (100 mg)
- 1 red pack is sufficient for 1 month
- 6 months – Paucibacillary leprosy
- 12 months – Multibacillary leprosy

Active Space

Active Space

CHEMOPROPHYLAXIS
- Household contacts will receive Rifampicin

SPARSH CAMPAIGN
- Creates awareness at community level
- Mascot for SPARSH awareness is a schoolgirl, called SAPNA

LEPROSY CASE DETECTION CAMPAIGN
- Active case finding in High Prevalence Districts

STI KITS

01:12:26

- Suraksha clinics help in managing STIS
- Syndromic management is when the symptoms are detected and recognized by health workers, kits are then provided

- Kit 1
  - Grey colour
  - Symptoms
    - Urethral discharge
    - Anorectal discharge
    - Cervical discharge
  - Treatment: Tablet AZITHROMYCIN + Tablet CEFIXIME

- Kit 2
  - Green colour
  - Symptoms: Vaginal discharge
  - Treatment: Tablet SECNIDAZOLE + capsules FLUCONAZOLE

- Kit 3
  - White colour
  - Symptoms: Genital ulcer - non herpetic
  - Treatment: Injection BENZATHINE PENICILLIN + Tablet AZITHROMYCIN

- Kit 4
  - Blue colour
  - Symptoms: Genital ulcer - non herpetic but allergic to penicillin
  - Treatment: DOXYCLINE + Tablet AZITHROMYCIN

- Kit 5
  - Red colour

Active Space

- Symptoms: Genital ulcer - herpetic
- Treatment: Tablet ACYCLOVIR

- Kit 6
  - Yellow colour
  - Symptoms: Lower abdominal pain
  - Treatment: Tablet CEFIXINE + Tablet MECTRONIDAZOLE + Tablet DOXYCYCLINE

- Kit 7
  - Black colour
  - Symptoms: Inguinal Bubo
  - Treatment: Tablet AZITHROMYCIN + Tablet DOXYCYCLINE

ICDS
INTEGRATED CHILD DEVELOPMENT SCHEME *01:16:12*

MINISTRY
- Ministry of Women and Child Development

HEART OF ICDS
- Services are given through Anganwadi Center (AWC)

NORMS
- Urban and Rural area: 1 Anganwadi center for 400 - 800 population
- Tribal area: 1 Anganwadi Center for 300 - 800 population
- 1 mini AWC for 150 - 300 population

ADMINISTRATIVE UNIT
- Community Development Block

SERVICES
- Services provided by Anganwadi Center
  - Supplementary nutrition
  - Health check up
  - Immunization
  - Non formal pre school education for 3 - 6 years
  - Health education
  - Referral services

SUPPLEMENTARY NUTRITION

	Calories (Kcal)	Protein (gms)
Child (6m – 6 yrs)	500	12 – 15
Pregnant and lactating mothers	600	18 – 20
Severely malnourished child	800	20 – 25

Active Space

NCD – GLOBAL ACTION PLAN

01:21:00

TARGETS TO BE ACHIEVED BY 2025

- Halt rise in diabetes and obesity
- 10% relative reduction in harmful use of alcohol
- 10% relative reduction in prevalence of insufficient physical activity
- 25% relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases
- 25% relative reduction in prevalence of Raised Blood Pressure
- 30% relative reduction in mean population intake of sodium / salt
- 30% relative reduction in prevalence of current tobacco use in aged 15+ years
- 50% of eligible people receive drug therapy and counselling to prevent heart attacks and strokes
- 80% should have accessibility to technologies and basic healthcare essentials

PYG – What is 25 by 25 initiative?

Infections

Active Space

VDVPS &VAPP 00:15

	VDPVs	V APP
	3 types - c-Circulating: most common i-Immunodeficiency a-ambigous	
REASON	Strains of poliovirus in OPV may change & revert to a form that can cause paralysis & circulation (cVDPV)	Strain of polio virus that has genetically changed in int from original attenuated strains in OPV (Abdomen
Problem	Irregular vaccine coverage	Live vaccine for congeni Immunodeficiency
Mutation	Type 2 component	SABIN 3 compoents
Outbreaks	Yes	No
Prevention	Switch (+OPV replaced by b-OPV	shift

YELLOW FEVER VACCINE	• Live attenuated, lyophilized vaccine - Strain: 17D strain • Immunity lasts: From 7 days of Vaccination till 35 years • Validity of vaccination certificate: Starts from 10 days and lasts for lifelong
QUARANTINE	For 6 days: For travellers without vaccination certificate
AEDES AEGYPTI INDEX:	• House index • Percentage of houses showing breeding of aedes larvae • Should be less than 1% around 400m of ports
BRETEAU INDEX	Breteau Index = $\frac{\text{No of container positive for larvae x 100}}{\text{No of houses inspected}}$

JAPANESE ENCAPHELITIS LIFE CYLE 10:55

01 Birds Pond herons, catte egrets: Reservoir of infection	**02 Pigs** Amplifier Hosts: do not manifest overt symptoms but circulate the virus
03 Vector Culex tritaeniorhynchus (most important vector), Culex vishnuii	**04 Cattle** Mosquito attractans

05 Man	06 Horses
Incidental Dead end Host: Man to Man transmission is not seen.	Are only domestic animals which show signs of encephalitis

Active Space

MALARIOMETRIC INDICES 15:10

Annual parasitic incidence (API):	API = $\frac{\text{New cases during one year x 1000}}{\text{Population under surveillance}}$
Annual blood examination rate (ABER):	$\frac{\text{ABER} = \text{slides examined}}{\text{Population under surveillance}} x\ 100$ Index of operational efficiency[PYQ]
Slide positivity rate (SPR)	SPR = $\frac{No.\ of\ blood\ smears + ve\ for\ parasite}{No.\ of\ blood\ smears\ examined}$
Spleen rate:	% of 2-10 years age showing enlargement of spleen To assess endemicity of malaria in a
Infant parasite rate:	Is 'most sensitive index of recent

RICKETTSIAL DISEASES 19:35

Disease	Agent	Vector	Reservoir
TYPHUS GROUP			
Epidemic Typhus	R. Prowazekii	Louse	Humans
Murine typhus	R.typhi	Flea	Rodents
Scrub typhus	R.tsutsugamushi	Trombiculid mite	Rodents
SPOTTED FEVER GP			
Indian Tick typhus	R.conori	Tick	Rodents, dogs
RMSF	R.rickettsii	Tick	Rodents, dogs
Rickettsial pox	R.akari	Mite	Mic
OTHERS			
Q Fever	Coxiella burnetii	NIL	Cattle, she goat
Trench Fever	Bartonetta Quintana	Louse	Fluman

Screening and Stats

Active Space

SCREENING TEST VS DAIGNOSTIC TEST *00:16*

Screening test	Diagnostic test
HIGH SENSITIVITY	HIGH SPECIFICITY
For apparently healthy	For persons with sings and symptoms
Based on one criteria (cutoffs) (Test results are arbitrary and final)	Based on signs, symptoms, and lab findings
Not sufficient basis for treatment	Sufficient basis for treatment
Initiative from investigator	Initiative from a person complaint
Applied to groups	Applied to individuals
Less accurate	More accurate
Less expensive	More expensive

	Disease: Sick	Disease: Healthy	
Test Result: Positive	True Positive (TP)	False positive (FP)	→ PPV
Test Result: Negative	False negative (FN)	True negative (TN)	→ NPV
	↓ Sensitivity	↓ Specificity	

TEST PARAMETERS *03:50*

Sensitivity	TP / TP + FN
Specificity	TN / TN + FP
ACCURACY	TP + TN / TP + TN + FN + FP (Total correct results)
PPV	TP / TP + FP (Hint)
NPV	TN

Active Space

SCREENING : IMPORTANT POINTS 11:35

If 2 tests are done in sequence (Serial testing): Net sensitivity decreases and net specificity increases

- If 2 tests are done together (Parallel testing): Net sensitivity increases and net specificity decreases
- Post-test probability depends upon: depends on sensitivity, specificity, pretest probability (Prevalence)
- PPV is most affected by: Prevalence
- Formula of positive likelihood ratio : Sensitivity /1- specificity
- Used to decide the Diagnostic cutoff point: ROC curve
- Time between first point of detection and final critical point: Screening time
- Time between point of detection and usual time of diagnosis : Lead time
- Screening is useful in diseases with: Long lead time

SCREENING : WILSON JUNGNER CRITERIA 17:00

Disease	Should be an important health problem
Natural history of disease	Should be well understood
Latent or early symptomatic stage	Present
Suitable test	Available
The test	Should be acceptable
Agreed policy	On whom to treat
Accepted treatment	Available
Facilities for diagnosis and treatment	Available
Case finding should be	Cost effective
Case finding should be	Continuous process

DATA REPRESENTATION 20:35

Histogram Frequency polygon Frequency curve	Frequency distribution of quantitative continuous data
Ogive curve	To represent cumulative frequency
Bar chart	Frequency distribution of qualitative data
Line diagram	To show trend of an event
Scatter diagram	To depict correlation – Relationship between two quantitative variables

	Ex: Height and weight, Income and IMR
Box whisker plots	To represent 5 point statistics: Min value – first quartile – second quartile
Venn diagram	To represent overlapping probabilities
Spot maps	To show place distribution

Active Space

BIOSTATS : IMPORTANT POINTS *26:40*

- Right or positive skewed data : Mean > Median > Mode
- Left or negative skewed data : Mean < Median < Mode
- Preferred measure of central tendency for skewed data : Median
- As sample size increases : Standard error decreases
- As sample size increases : Width of confidence interval decreases
- Sampling used for heterogenous population to ensure proper representation: Stratified randoc
- Tracing contacts and sampling done in hidden population : Snow ball sampling
- Used to compare variation of 2 variables measured in two different units : coefficient
- To express strength of relationship between 2 quantitative variables : Corelation

TESTS OF SIGNIFICANCE *33:35*

To compare Mean values	Between 2 groups	Student t test or Unpaired t test
	For more than 2 groups	ANOVA test
	Within 1 group (Before – after intervention)	Paired t test
To compare proportions	Between 2 or more than 2 groups	Chi square test
	Within 1 group (Before – after intervention)	Mcneman test
To check significance of association	Chi square test of association	

TYPES OF ERROR

37:32

Type I Error	Type 1 Error	Type II Error	Type 2 error
			
• False positive error • No difference in reality but analysis showing significant results • Rejecting a true null hypothesis • Threshold limit of type 1 error: Alpha • Probability of type 1 error committed : P value • If p value is less than alpha : Reject null hypothesis • Most commonly used p value : <0.05		• False negative error (Beta error) • Not able to identify significant difference • Not rejecting a false null • Can happen due to : less • Power: Ability to identify • Power is increased	

Active Space

Miscellaneous

Active Space

FERTILITY INDICATORS 00:15

• Crude birth rate	• No. of live births per 1000 mild year population
• General fertility rate	• No. of live births per 1000 women in reproductive ag
• Total fertility rate	• Average number of children a woman through her reproductive years • It is computed by summing the age-specific fertility rates for all ages • Indicates magnitude of "completed family size" • Crude birth rate = (8 x TFR) +1
• Gross reproductive rate	• Average number of girls that would be born to a woman throughout her reproductive span assuming no mortality • GRR = TFR/2
• Net reproductive rate	• Number of daughters a newborn girl will bear during her lifetime specific fertility and mortality rates • NRR =1: Replacement level of fertility • Best indicator of fertility
• Couple protection rate	• Indicates prevalence of contraceptive practice

MCH INDICATORS 04:30

	Numerator	Denominator	Multiplier
Perinatal mortality rate	Still births + early neonatal deaths	Live births + still births	1000
Perinatal mortality rate (for international comparison)	Still births + early neonatal deaths (weight ≥ 1000 gm)	Live births (weight ≥ 1000 g)	
Neonatal mortality rate	Deaths < 28 days	Live births	
Post neonatal mortality rate	Deaths between 28 days to 1 yr		
Infant mortality rate	Deaths < 1 year		
Under 5 morality rate	Deaths < 5 yr		
Child survival index	$= \frac{1000-U5MR}{10}$		

Active Space

Maternal mortality ratio	"Death while pregnant or within 42 days of pregnancy, irrespective of the duration and site, from cause aggravated by the pregnancy or its	Livebirths	

HIGH RISK APPROACH *07:15*

High risk pregnant	At risk infant
Elderly > 30 years	Birth wt: <2.5kg
Short statured Primi (140 cm and below)	Twins
Infertility treatment	Birth order 5 or more
3 or more spontaneous abortions	Artificial feeding
Post term pregnancy	Weight: ≤70% of expected weight
APH	Failure to gain wt, during 3 successive months
Eclampsia	Children with PEM/diarrhoea
Anaemia	Working mother/one parent
Twin/Breech	
Previous LSCS	
Systemic disease	
Prolonged pregnancy	

VITAMIN DEFICIENCIES *08:20*

B1 (Thiamine)	Beri Beri Wernickes encephalopathy
B2 (Riboflavin)	Angular stomatitis
B3 (Niacin)	• Pellagra: Diarrhea, dermatitis, dementia • Glossitis + : loss of papillae • Casals necklace + : Excoriations • Cereals responsible: Maize, jowar (Sorghum vulgare) ○ Maize – lack of tryptophan ○ Jowar – rich in leucine
B5 (Pantothernic acid)	Burning feet syndrome
B6 (Pyridoxine)	Peripheral neuritis

Active Space

B9 (Follic acid)	• Megaloblastic anemia, Glossitis • Severe deficiency: Infertility / sterility
B12 (Cyano cobalamine)	• Pernicious anemia, neuropathy
Vit E	• Hemolytic anemia of newborn
Vit K	• Hemorrhagic disease of newborn
	Prevention: Vitamin K1 at birth

FOOD ADULTERANTS *11:50*

Disease	Toxin	Adulterant	Prevention
Lathyrism: Spastic paralysis	BOAA*	Khesari dal (Lathyrus sativus)	• Vitamin C prophylaxis • Remove toxin: Steeping, parboiling.
Epidemic dropsy: Pedal edema, cardiac failure, Glaucoma	Sanguinarine	Argemone oil added to mustard oil	Tests for detection: Nitric acid test: MC done paper chromatography test: Most sensitive
Endemic ascites: Jaundice, ascites	Pyrrolizidine alkaloids (Hepatotoxic)	Crotalaria seeds (Jhunjhunia)	Deweeding
Aflatoxicosis	Aflatoxin (Hepatotoxic)	Aspergillus flavus/parasiticus	
Ergotism:	Clavine	Claviceps Bajra seeds	

ANAEMIA MUKHT BHARAT *16:45*

Age	Frequency	Dose
Children (6m-59 months)	Biweekly	1 ml IFA syrup (1 ml contains 20mg elemental iron and 100 µg FA)

Active Space

Children (5-9 yrs)	Weekly	Pink tablet: 45 mg iron and 400 µg FA
Adolescents (10-19yrs)	Weekly	Blue tablet: 60 mg iron + 500 µg FA
Pregnant and lactating women	Daily	Red tablet, 60 mg iron + 500 µg FA (6 months from second trimester months postpartum)
Reproductive women (20-49 yrs)	Weekly	Red tablet: 60 mg iron + 500 µg FA

Aka National nutrition mission Implimented in 2017	
Targets:	To reduce- Stunting by 2% annually Under-nutrition by 2% annually. LBW by 2% annually Anaemia by 3% annually
Mission 25 by 2022:	Reduction in stunting 25% by 2022

MID DAY MEAL SCHEME *20:35*

- PM POSHAN SHAKTI NIRMAN
- Under ministry of Education (Previously k/a Min of HRD)

Principle for formulating mid day meal:	Provide 1/3rd calories & ½ protiens	
	Primary	Upper Primary
Energy	450	700
Protein	12	20

Nutrition

RDA:

	Man	Woman	Pregnant	Lactation
Calcium (mg)	1000	1000	1000	1200
Iron (mg)	19	29	40	23

Active Space

Iodine (microgram)	150	150	250	280
Folic acid (microgram)	300	220	570	330

Energy

Activity	Males	Females	Extra requirement
	Kcal	Kcal	Pregnancy: +350*
Sedentary	2110	1660	
Moderate	2710	2130	

ENTOMOLOGY *22:30*

Mosquito	Anopheles	Malaria
	Culex	JE, West nile fever, Bancroftian filariasis, Viral arthritis
	Aedes	Yellow fever, Dengue, Chikungunya, Rift valley fever
	Mansonoides	Brugian filariasis, Chikungunya
Sandfly	Kalazar, Oriental sore, Oraya Fever, Sandfly fever	
Tse - tse fly	African sleeping sickness	
Louse	Epidemic typhus, relapsing fever, Trench fever, pediculosis, vagabond disease.	
Ratflea	Bubonic plague, Endemic typhus, hymenolepis diminuta	
Black fly	Oncocerciasis	
Reduvid bug	Chaga's disease	
Hard tick	Tick typhus, viral hemorrhagic fever, KFD (Within India), Tularen paralysis human babesiosis, Lyme's disease.	
Soft tick	Q fever (transmission between cattle), Relapsing fever	
Trombiculid mite	Scrub typhus	
Cyclops	Worm disease	

PNEUMOCONIOSES *24:40*

• Silicosis -	• Most common • Seen initially in Mica miners • Risk factors for tuberculosis • Prevention: Dust control

• Asbestosis-	Most dangerous Asbestos is used in - Cement, glass, fireproof textiles
• Anthracosis -	Coal miners
• Byssinosis:	Seen in: Textile mills -Cotton spinners are affected more
• Bagassosis:	• Sugar cane waste • Seen in: Cardboard / paper industry • Agent: Thermoactinomycetes • Not notifiable under factory act.

Active Space

ESI BENEFITS *27:20*

Type of benefits	
Sickness	70% of daily wage is payable for 91 days (In order to qualify for sickness benefit the worker is required to contribute for 78 days in a contribution period of 6 months).
Extended sickness	80% of daily wage payable for 2 years (730 days) for 34 diseases
Enhanced sickness	Full wage upto 7 days for vasectomy and 14 days for tubectomy
Maternity	Full daily wages • Up to 26 weeks for confinement • Up to 6 weeks for miscarriage or MTP • Up to 4 weeks for sickness arising out of pregnancy confinement, premature birth
Temporary disablement	90% of daily wage till recovery
Permanent disablement	90% of daily wage

HEALTH EDUCATION AND COMMUNICATION *28:55*

PANEL DISCUSSION	Experts discuss a topic with no specific order of speeches Audience can take part
SYMPOSIUM	Series of speeches with no discussion among experts Audience can take part

Active Space

FOCUSSED GROUP DISCUSSION (FGD)	Discussion among community members in a group of 6-12 Sociogram: Graphical representation of interaction
DEMONSTRATION	To show how to do activities for community Ex: Use ORS, Wash dog wound
GATHER APPROACH: To counsel a client Ex- In family planning	G: Greet A: Ask/ascertain - needs/problems T: Telling different methods/options to solve problems H: Help to make voluntary decision E: Explain fully the chosen decision/action R: Return for follow up visit
SPIKES PROTOCOL: To disclose bad news	Set up the interview Access the patient's perception Obtain the patient's invitation

MANAGEMENT METHODS 31:40

	Input	Output
Cost benefit analysis	Cost	Monetary terms
Cost effectiveness analysis	Cost	Results Ex: Lives saved
Cost utility analysis	Cost	QALYs gained (widely used)
Network Analysis	A graphic plan of all activities to reach ana objective Ex: PERT (Programme Evaluation & Review technique) CPM (Critical path method)	
Work Sampling	Observation of activities at predetermined Ex: Medical officer observing immunization session intervals	
System Analysis	Finding cost effectiveness of availability	
	For decision making by experts	

HEALTH COMMITTEES *34:40*

Bhore committee	• Social physicians (3 months of training in PSM) • 3 million plan: Development of PHCs
Mudaliar committee	• All India Health Services (like IAS)
Chadah Committee	• 1 health worker (for malaria & Family Planning)
Mukherji Committee	• Delink malaria workers from family planning

Jungalwalla Committee	• Equal pay for equal work and Special pay for specialized work • No private practice
Kartar Singh Committee	• For Multipurpose workers
Shrivastava: Medical Education & Support Manpower	• ROME (Reorientation of Medical Education) • Village Health guide • 3 tier rural health infrastructure • Development of referral service comple
Krishnan Committee	Urban revamping scheme
Bajaj Committee	• National Health manpower Policy

Active Space

HEALTH CARE DELIVERY *36:35*

		SUBCENTRE		PHC		CHC
Level of care		Primary		Primary		Secondary
First contact point between community and:		Health		Doctor		Specialist
Population norm	Plains	5000		30000		1,20,000
	Hilly/Tribal areas	3000		20000		80,000
Impatient beds		Nil		4-6		30
Staff		Health workers: Male/Female (ANM)		Medical officer+ Health assistants+		Specialists+
Referral unit for		Nil		For 6 subcentres		
Classification (A and B- Based on number of deliveries per month)		SC-A	No deliveries	PHC-A	<20	
		SC-B	<10	PHC-B	<20	

BMW : BIOWASTE MANAGEMENT *38:50*

Red Bag	I.v Tubes, catheters, Urine bags, Syringes without needles, Hazmet suit, Vaccutainers, Goggles, face-shield, splash proof apron, nitrile gloves

Yellow bag	• Anatomical waste: Human and animal • Soiled: contaminated with blood and body fluids (Linen, swabs) • Cytotoxic drugs, Expired/ discarded medicines • Chemical liquid: Silver X ray film • Blood bags, culture • Used mask, head cover, shoe-cover, disposable linen
White: puncture proof container	Needles, syringes with fixed needles, blades, scalpels
Blue: carboard box	Glass: Broken glass - medicine vials and ampoules

Active Space