# National Health programmes

# Polio Eradication Programme

| | |
|---|---|
| Agent | Poliovirus types 1, 2, and 3<br>Only type 1 is currently spreading disease<br>Type 2 is eradicated |
| Seasonality | More in summer and early autumn in temperate climates. |
| Transmission | Person-to-person via the fecal-oral route |

| | |
|---|---|
| Communicable period | The virus is intermittently excreted for up to 2 months or more after infection, with maximum excretion occurring just before paralysis and during the first two weeks (14 days) after onset of paralysis. |
| Incubation period | 7-10 days (4-35 days) |
| Reservoir | Human beings, no animal reservoir<br>Does not survive in the environment outside the human body for more than a few days.<br>There is no long-term carrier state |

| | |
|---|---|
| Immunity | Immunity following natural infection or a completed series of immunizations with OPV results in both humoral and local intestinal cellular responses.<br>Vaccination with IPV confers humoral immunity, but relatively less intestinal immunity<br>There is no cross-immunity between poliovirus types |
| Diagnosis | Isolation of wild poliovirus from stool is the recommended method for laboratory confirmation |

# Polio is chosen for eradication

- Man is the only host
- No animal or environmental reservoir
- Effective diagnostic test available; Causative agent can be isolated in laboratory
- Effective vaccine available
- No long-term carrier state
- Virus doesn’t survive in the environment for long.

# Eradication

- It is defined as no case of paralytic polio by wild poliovirus
- In last 3 years
- Absence of wild polio virus in the community,
- Excellent clinical and virological surveillance exists
- Coverage of routine OPV is more than 80%

# India Polio Status

- Last case of polio was seen in West Bengal on 13th January 2011 by P1
- India is currently a non-endemic country for Polio
- Indian was certified as having eradicated Polio on 27th March, 2014

# Strategies for polio eradication

- Attaining high routine immunization
- National Immunization Days (NIDs)
- Surveillance of acute flaccid paralysis (AFP)
- Mopping-up” immunization

# AFP Surveillance

- A case of AFP is defined as any child aged less than 15 years who has acute onset of flaccid paralysis for which no obvious cause is found.
- The paralysis is of acute onset (< 4 weeks) & the affected limb or limbs are flaccid
- Sensitive surveillance for AFP must be able to detect a minimum of 1 case per 100,000 children less than 15 years of age.

# Reporting units

- Centers where paralytic cases particularly children < 15 years might be brought for diagnosis, treatment or rehabilitation.
- A minimum of 2-3 Reporting Units per 1,00,000 population
- Report weekly, even when no case of AFP has been identified (nil reporting)

# AFP Case investigation

- All cases should be verified and investigated by a specially trained surveillance officer or epidemiologist within 48 hours of notification.

# Stool Examination

- Collect stool specimens within 2 weeks of paralysis onset.
- However when AFP cases are seen late, stool specimens may still be collected up to 60 days
- Two stool specimens are collected 24 hours apart
- The stool sample should be shipped by reverse cold chain within 2 days.

# Residual paralysis

- Re-visit every case of AFP 60 days after the onset of paralysis to confirm the presence or absence of residual weakness.

# Outbreak Response immunization

- Done as soon as possible after a case of AFP is detected.
- ORI should cover a minimum of 500 children less than 5 years old around the reported AFP case. (5 km radius)
- The ORI should be repeated after 30 days.

Acute flaccid paralysis is reported in a child aged- (AIPGME 2002)

a) 0-3 years
b) 0-5 years
c) 0-15 years
d) 0-25 years

A case of acute flaccid paralysis must be observed for how may days for residual weakness: (AIPGME 2010)

a) 30 days
b) 42 days
c) 60 days
d) 90 days

The following are the indicators for assessing the sensitivity of surveillance of polio except: (UPSC CMS 2014)

a) A minimum of one case of AFP per 100,000 children under 15 years of age
b) detected per year
c) A minimum of one case of AFP per 100,000 children under 5 years of age detected per year
d) At least 80% of the reporting sites should report each month even in the absence of cases
e) Percentage of AFP cases with 2 stools taken within 2 weeks after paralysis onset ≥ 80%

One of the pre-requisites for certification of Polio eradication is that the coverage of routine OPV should be more than-

a) 100%
b) 95%
c) 90%
d) 80%

Which of the following statement is false regarding AFP surveillance and investigation

a) Stool sample may be collected up to 60 days in late cases
b) Outbreak response immunization should cover minimum 500 under-five children
c) The stool sample should be shipped by reverse cold chain within 7 days
d) An AFP case should be investigated for confirmation within 2 days

# LEPROSY AND NATIONAL LEPROSY ERADICATION PROGRAM

# Leprosy

| | |
|---|---|
| Agent | Mycobacterium leprae |
| Generation time | 12 to 14 days |
| Reservoir | Man, Armadillo? Soil? |
| Incubation period | 6 months to 30 years, average – 2 to 5 years |

| | |
|---|---|
| Modes of transmission | Inhalation<br>Close, intimate and prolonged contact<br>Transmission though insect bites?<br>Through breast-milk?<br>Through insect vectors?<br>Through inoculation- tattooing? |
| Subclinical infection | Recent evidence suggests the occurrence of subclinical infection in Leprosy |

| | |
|---|---|
| Age | 20–30 years<br>Increased proportion of affected children in the population indicates the presence of active transmission of the disease in the community. |
| Gender | Males are affected more as compared to females |

**Leprosy has the longest generation time of 12-14 days.**

**Implications of extremely slow generation time**

- Long incubation period,
- A very slow development of pathology,
- A slow and insidious clinical evolution,
- An unclear epidemiological pattern,
- Low infectivity.

# Cardinal Signs of Leprosy

- Hypo-pigmented or reddish skin lesion(s) with definite sensory deficit
- A thickened or enlarged peripheral nerve with loss of sensation and/or weakness of the muscles supplied by that nerve
- The presence of Acid-fast bacilli in slit skin smears or histopathology

# Situation in India

- India has eliminated Leprosy at National level in December 2005.
- Prevalence rate (PR) of **0.68 leprosy cases per 10,000 population**
- At the end of March 2014, there were 86134 leprosy cases on record (under treatment)
- Annual New Case Detection Rate was 9.98 in the year 2012-13.

# Objectives of NLEP

- Early detection of leprosy cases
- All detected leprosy patient should be brought under regular treatment
- Health education regarding Leprosy should be given to the leprosy patients, his family and society.

# Criteria of PB and MB

| S. No. | Characteristic | PB (Pauci bacillary) | MB (Multi bacillary) |
|---|---|---|---|
| 1 | Skin lesions | 1–5 lesions | 6 and above |
| 2 | Peripheral nerve involvement | No nerve/only one nerve with or with out 1 to 5 lesions | More than one nerve irrespective of number of skin lesions |
| 3 | Skin smear | Negative at all sites | Positive at any site |

# Multi - Drug Treatment for PB Leprosy

| Supervised monthly dosage | | |
|---|---|---|
| Drug | Adult (15 years or more) | Children 10 to 14 |
| Rifampicin | 600 mg | 450 mg |
| Dapsone | 100 mg | 50 mg |
| Unsupervised daily dosage | | |
| Dapsone | 100 mg daily | 50 mg daily |

# Multi- Drug Treatment for MB Leprosy

| Supervised monthly dosage | | |
|---|---|---|
| Drug | Adult (15 years or more) | Children 10 to 14 |
| Rifampicin | 600 mg | 450 mg |
| Clofazimine | 300 mg | 150 mg |
| Dapsone | 100 mg | 50 mg |
| Unsupervised daily dosage | | |
| Clofazimine | 50 mg | 50 mg alternate day |
| Dapsone | 100 mg | 50 mg daily |

Leprosy is **not** yet eradicated because (AIIMS 2012)

a) No effective vaccine
b) Highly Infectious but low pathogenicity
c) Only humans are reservoir
d) Long incubation period

Which of the following about Lepromin test is **not true**? (AIIMS 2010)

a) It is negative in most children in first six months
b) It is a diagnostic test
c) It is an important aid to classify type of leprosy disease
d) BCG vaccination may convert Lepromin reaction from negative to positive

Effective Leprosy control program are judged by all **except-** (AIIMS 2009)

a) High new case detection rate
b) Increasing number of children affected
c) Decreased type 2 disability
d) Less number of multibacillary cases

All of the following statements are true about leprosy **except-** (AIPGME 2004)

a) Multibacillary leprosy is diagnosed when there are more than 5 skin patches

b) New case detection rate is an indicator for incidence of leprosy

c) A defaulter is defined as a patient who has not taken treatment for 6 months or more

d) The target for elimination of leprosy is to reduce the prevalence to less than 1 per 10,000 population

A patient with leprosy had slightly erythematous anesthetic plaques on the trunk and upper limbs. He was treated with paucibacillary multidrug therapy for 6 months. At the end of 6 months he had persistent erythema and induration in the plaque. The next step of action recommended by the WHO in such a patient is (AIIMS 2001)

a) Stop anti-Leprosy treatment
b) Continue PB MDT till erythema subsides
c) Biopsy the lesion to document activity
d) Continue Dapsone alone for 6 months

In a case of paucibacillary leprosy, treatment is considered adequate if the patient has received the six monthly doses of combined therapy within: (UPSC CMS 2015)

a) 6 months
b) 9 months
c) 12 months
d) 15 months

The minimum period of treatment for multibacillary leprosy is (JIPMER-2000)

a) 1yr
b) 2yrs
c) 6months
d) 9months

Which of the following regimens is recommended for multibacillary leprosy in children 10-14 years of age? (UPSC CMS 2012)

a) Rifampicin 450 mg once a month (under supervision) + Dapsone 50 mg daily (self administered) + Clofazimine 150 mg once a month (under supervision) and 50 mg every alternate day
b) Rifampicin 600 mg once a month (under supervision) + Dapsone 100 mg daily (self administered) + Clofazimine 50 mg once a month (under supervision) and 25 mg every alternate day
c) Rifampicin 450 mg once a month (under supervision) + Dapsone 50 mg daily (self administered)
d) Rifampicin 600 mg once a month (under supervision) + Dapsone 50 mg daily (self administered)

Leprosy can be transmitted through all **except** – (AIPGME 2004)

a) Mother to child
b) Breast milk
c) Insect vectors
d) Tattooing needles

Leprosy is considered a public health problem if the prevalence of Leprosy is more than – (AIPGME 2003)

a) 1 per 10,000
b) 2 per 10,000
c) 5 per 10,000
d) 10 per 10,000

In leprosy control programme, indicator of efficiency for early diagnosis of cases is:

a) Disability rate among newly diagnosed
b) Lepromin +ve% among newly diagnose
c) Ratio of pauci/multi bacillary cases
d) All of the above

Classification into pauci and multi bacillary leprosy is based on _____ features

a) Clinical
b) Histological
c) Bacteriological
d) Immunological

# ICDS

# ICDS

- Integrated Child Development Services (ICDS) Scheme
- Ministry of Women and Child Development (MWCD)

# ICDS Norms

| | Tribal | Rural | Urban |
|---|---|---|---|
| Population per Anganwadi center | 700 | 1000 | 1000 |
| Population per Mini Anganwadi centre | 150-300 | 150-500 | 500-1500 |
| AWC supervised per Mukhya-sevika | 17 | 25 | 20 |
| Mukhya-sevikas per CDPO | 5 | 5 | 5 |

# Services

- Supplementary nutrition,
- Immunization,
- Health check-up,
- Referral services,
- Pre-school non-formal education and
- Nutrition & health education

| Services | Target Group | Service Provided by |
|---|---|---|
| Supplementary Nutrition | Children below 6 years<br>Pregnant & Lactating Mother | AWW |
| Immunization* | Children below 6 years<br>Pregnant & Lactating Mother | ANM/ MO |
| Health Check-up* | Children below 6 years<br>Pregnant & Lactating Mother | ANM/MO/ AWW |
| Referral Services* | Children below 6 years:<br>Pregnant & Lactating Mother | AWW/ANM/ MO |
| Pre-School Education | Children 3-6 years | AWW |
| Nutrition & Health Education | Women (15-45 years) | AWW/ANM/ MO |

**Supplementary Nutrition:**

- This includes supplementary feeding and growth monitoring; and prophylaxis against vitamin A deficiency and control of nutritional anemia.
- Supplementary feeding support for 300 days in a year

**Growth Monitoring and nutrition surveillance**

- Children below the age of three years of age are weighed once a month
- Children 3-6 years of age are weighed quarterly.
- Weight-for-age growth cards are maintained for all children below six years.

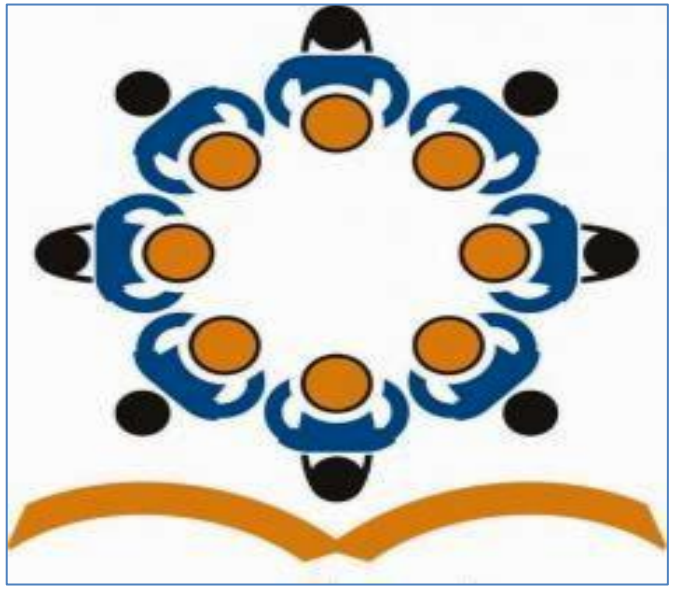
# Supplementary nutrition

| Category | Calories (Kcal) | Proteins (gm.) |
|---|---|---|
| Children<br>6 months to 6 years | 500 | 12-15 |
| Children<br>Grade III and IV malnutrition | 800 | 20-25 |
| Pregnant and lactating women | 600 | 18-20 |

# Expanded Mid-day Meal scheme

- National Program of Mid day Meal in school
- Ministry of Human Resource Development

| Level | Calories (kcal) | Proteins (gm.) |
|---|---|---|
| Primary | 450 | 12-15 |
| Secondary | 700 | 20 |



- To all children upto secondary level
- Supplementary nutrition for 300 days in a year
- Provides one-third of daily calories and half of daily protein requiremnt

# National Iron Plus Initiative

| Age group | Intervention/ Dose | Regime | Service delivery |
|---|---|---|---|
| 6–60 months | 1ml of IFA syrup containing<br>20 mg of elemental iron and<br>100 mcg of folic acid | Biweekly<br>and<br>de-worming for children 12 months and above. | Inclusion in MCP card<br>Through ASHA/ ANM |
| 5–10 years | Tablets of<br>45 mg elemental iron and<br>400 mcg of folic acid | Weekly<br>and<br>biannual deworming | In school through teachers and for out- of school children through Anganwadi centre (AWC) |

| Age group | Intervention/ Dose | Regime | Service delivery |
|---|---|---|---|
| 10–19 years | 100 mg elemental iron and 500 mcg of folic acid | Weekly and biannual deworming | In school through teachers and for those out-of- school through AWC |
| Pregnant and lactating women | | 1 tablet daily for 100 days<br>To be repeated for 100 days post-partum. | ANC/ ANM /ASHA<br>Inclusion in MCP card |

| Age group | Intervention/ Dose | Regime | Service delivery |
|---|---|---|---|
| Women in reproductive age group | 100 mg elemental iron and 500 mcg of folic acid | Weekly and biannual deworming | In school through teachers and for those out-of- school through AWC |
| | | 1 tablet daily for 100 days<br>To be repeated for 100 days post-partum. | ANC/ ANM /ASHA<br>Inclusion in MCP card |

# Weekly Iron Folic Acid Supplementation Program

# Target groups

Following two target groups in both rural and urban areas:

- Adolescent girls and boys enrolled in government/government aided/municipal schools from $6^{th}$ to $12^{th}$ classes.
- Adolescent Girls who are not in school.

The WIFS program will also cover married adolescent girls.

# Strategy

- Each IFA tablet containing 100mg elemental iron and 500µg folic acid for 52 weeks in a year
- Screening of target groups for moderate/severe anaemia.
- Biannual de-worming (Albendazole 400mg)
- Information and counseling for improving dietary intake and for taking actions for prevention of intestinal worm infestation.

THANK YOU