National Health Programme

Infectious Disease

- Goal
- Objectives
- Approach
- Strategy

- Service Provider

  Registers
- Centres
- Programme Indicators

Approach

- Control the disease in community

- Active intervention to control or interrupt disease transmission

Approach

Control the disease in community

- **Case Identification-**

  Suspected &

  Confirmed Case(Lab Diagnosis)

- **Case Detection**

  Active & Passive

- **Treatment**

Approach

Active intervention to control or interrupt disease transmission

Immunization-

Chemoprophylaxis (susceptible/exposed)

Control of Agent-(Vector control)

- HE & Awareness

Services Provider

- Rural Area

Rural Area

Centre

- Sub Centre
- PHC
- CHC
- District Hospital

Service Provider

- ASHA
- Community volunteers
- MPHW
- M.O.
- Lab. Technician (diagnosis)

Rural Area

Centre

- TB

  District TB Unit,
  DOTS Centre
- Malaria-

  -Fever Treatment Depot

-Drug distribution Centre

Service Provider

- TB Supervisor/ Malaria Supervisor at PHC
- Malaria- Link workers appointed by panchayat in high Pf area
- Polio-

  -District Immunization Officer

  -State Immunization Officer

  -Surveillance Medical Officer

Urban Area

Centre

- UHC
- Referral Hospital
- Tertiary Level Hospital
- TB-District TB Unit

  TB units
- Malaria- DDC(Drug Distribution Centre)

Service Provider

- Link Worker
- M.O.
- Lab. Technician (diagnosis)
- TB Supervisor/ Malaria Supervisor
- Specialist In TB & chest (DTU)

Register

- TB- TB register, Lab. Register
- Malaria- Malaria register
- Polio- AFP register, NIL reporting

Monthly Reporting To Higher Centre

Service provider
DOT Provider / Observer

- Non-governmental organizations
- Religious leaders
- Cured Patients in TB

POLIO

- District Health Officer
- District Immunization Officer
- Surveillance Medical Officer
  (National Polio Surveillance Programme)

Programme Indicators

- For Treatment outcome
- For High risk approach
- For Surveillance

Monitoring & Evaluation

Through-

- **Weekly report**
- **Periodic monitoring**
- **Field visits**
- **Web based management system up to district level**

Revised National Tuberculosis Control Programme

- **Goal:**

  To Decrease Morbidity & Mortality Due to TB to such an extent that it cease to be a public health problem.

RNTCP

Objectives:

- To achieve & maintain **70% case detection** from population.
- To achieve & maintain **85% cure rate** among newly diagnosed sputum positive cases.

Approach

- Control the disease in community

- Active intervention to control or interrupt disease transmission

Approach

Control the disease in community

- **Case Identification-**

  Suspected &

  Confirmed Case(Lab Diagnosis)

- **Case Detection**

  Active & Passive

- **Treatment**

Strategy/Principles of RNTCP

- Diagnosis of TB primarily based on sputum microscopy
- DOTS-Directly observed treatment Short course chemotherapy
- Intermittent chemotherapy
- Domiciliary treatment

Suspected Case Definition

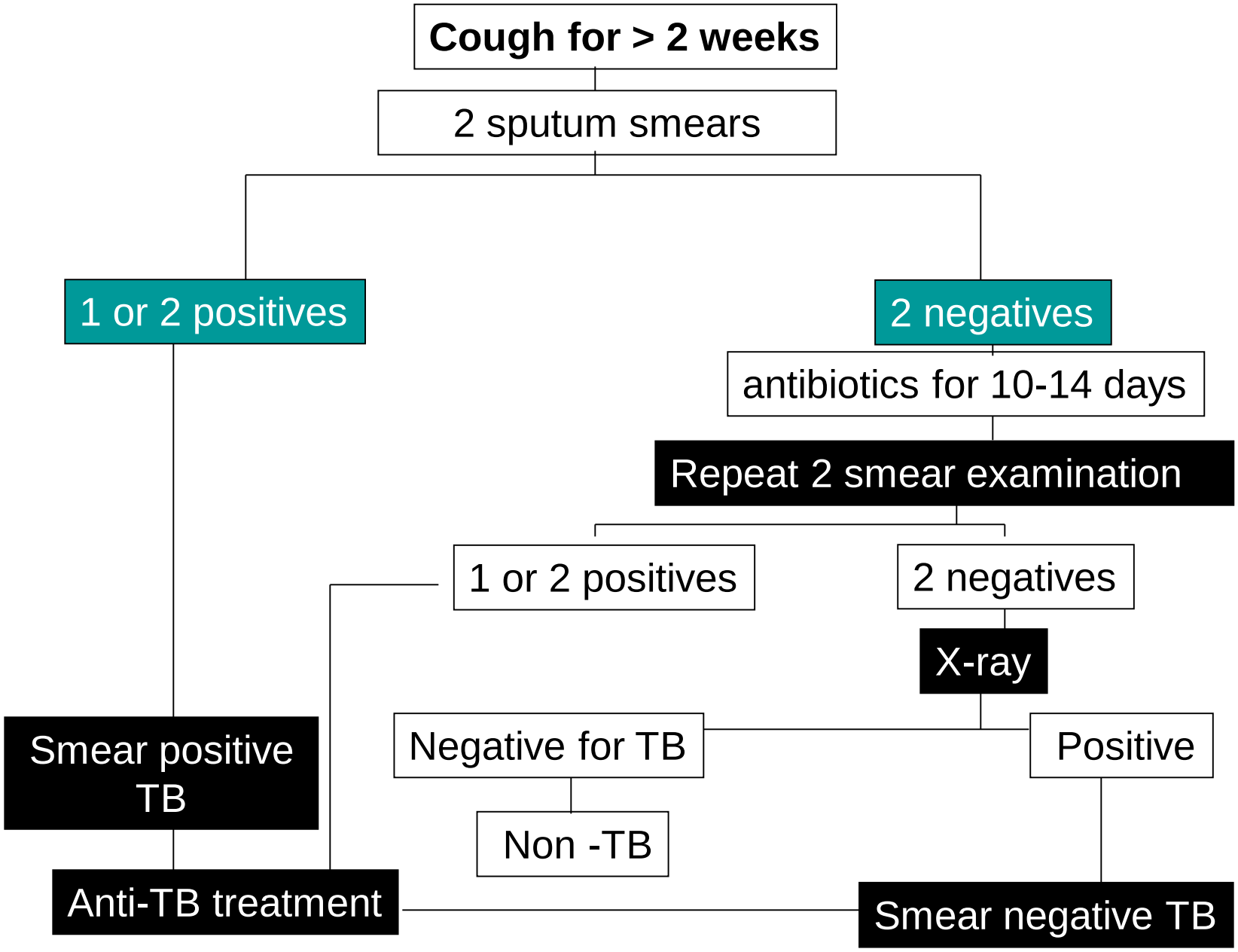
Cough for more than 2 weeks duration

Confirmed Case
Diagnosis of Pulmonary Tuberculosis

Two specimens:

- **Spot specimen on first visit; sputum container given to patient**
- **Early morning collection by patient on next day**

THE ALGORHYTHM



Few Definitions:

Relapse:

A patient who returns smear positive having previously been treated for TB and declared cured after completion of the treatment.

Few Definitions:

Default:

Person diagnosed as having TB and put on Anti-TB treatment, stopped taking drug atleast for a month.

Few Definitions:

Treatment Failure:

Patient who was initially smear positive, who began treatment and who remained or became smear positive again at five months or later during the course of treatment.

CATEGORIES FOR TREATMENT

Category I :

- New sputum smear positive
- New sputum smear negative
- Extra-pulmonary

Category II :

- Sputum smear-positive Relapse
- Sputum smear-positive Failure
- Sputum smear-positive treatment after default

Treatment under RNTCP

DOTS :

Directly Observed Therapy Short-course

CATEGORY I :

Total duration of Treatment : 6 months

Initial Phase	**Continuation phase**
$2\ (HRZE)_3$	**$4\ (HR)_3$**

H = Isoniazid **R = Rifampicin**

Z = Pyrizinamide **E = Ethambutol**

CATEGORY II :

Total duration of Treatment : 8 months

Initial Phase	Continuation phase
$2\,(HRZES)_3\ 1\,(HRZE)_3$	$5\,(HRE)_3$

H = Isoniazid

Z = Pyrizinamide

S = Streptomycin

R = Rifampicin

E = Ethambutol

Patient wise Boxes

Under RNTCP, the treatment is given with patient wise box.

When a person is identified as having TB, based on the category of the patient a box containing medicines for the entire course of treatment is labeled for the patient.

Directly Observed Treatment

- Treatment observer must be ***accessible*** and ***acceptable*** to the patient and ***accountable*** to the health system
- Many patients do not take medicines regularly, even if excellent health education is provided

Service provider
DOT Provider / Observer

- Health care workers
- Non-governmental organizations
- Community volunteers
- Religious leaders
- Child survival workers, lay midwives etc.
- Cured Patients

Multi-Drug Resistant TB:

Resistance to Isoniazid and Rifampicin

Treatment is second line of drugs

Xtremely Drug Resistant TB:

Resistance to Isoniazid, Rifampicin and Quinolones

Total Drug Resistant TB:

Resistance to all first and second line drugs

Indicators (RNTCP)

- Case Detection Rate
- Sputum Conversion Rate
- Patients with Completed Treatment

POLIO

Approach

- Control the disease in community

  AFP Surveillance

- Active intervention to control or interrupt disease transmission

  Immunization Strategy

Strategies For Polio Eradication

Strategies For Polio Eradication

1. Routine Immunization Programme
2. Mass Immunization campaign
3. Supplemental Vaccination
4. AFP surveillance

- Kept during winter---(Nov. to Feb.)
- Minimum 2 rounds with not less than 4 weeks & more than 3 months gap.
- Additional rounds are kept depending on incidence of polio cases in a state.

Why during Winter

- Low transmission
- Better cold chain maintenance
- Better Immunization rate-Less prevalence of other intestinal organism
- Better compliance of field staff for H-H activities

IPPI

- Sunday-Booths round

- Successive Monday, Tuesday & Wednesday house to house search to vaccinate children who have not received vaccine on Sunday.

IPPI

- Kept during winter---(Nov. to Feb.)
- Minimum 2 rounds with at least 4 weeks gap
- Additional rounds are kept depending on incidence of polio cases in a state.

Strategies For Polio Eradication

1. Routine Immunization Programme
2. Mass Immunization campaign
3. Supplimental Vaccination
4. AFP surveillance

Supplimental Vaccination

a) Ring Immunization

b) Mopping-up round

AFP Surveillance

AFP- Case Definition

Any child < 15 years who has acute onset of flaccid paralysis for which no obvious cause (such as severe trauma or electrolyte imbalance) is found, or paralytic illness in a person of any age in which polio is suspected.

Confirmed Polio case

-Each AFP case is examined & stool sample is taken for confirmation/ to rule out Polio

- Adequacy & timing of Stool sample is very important

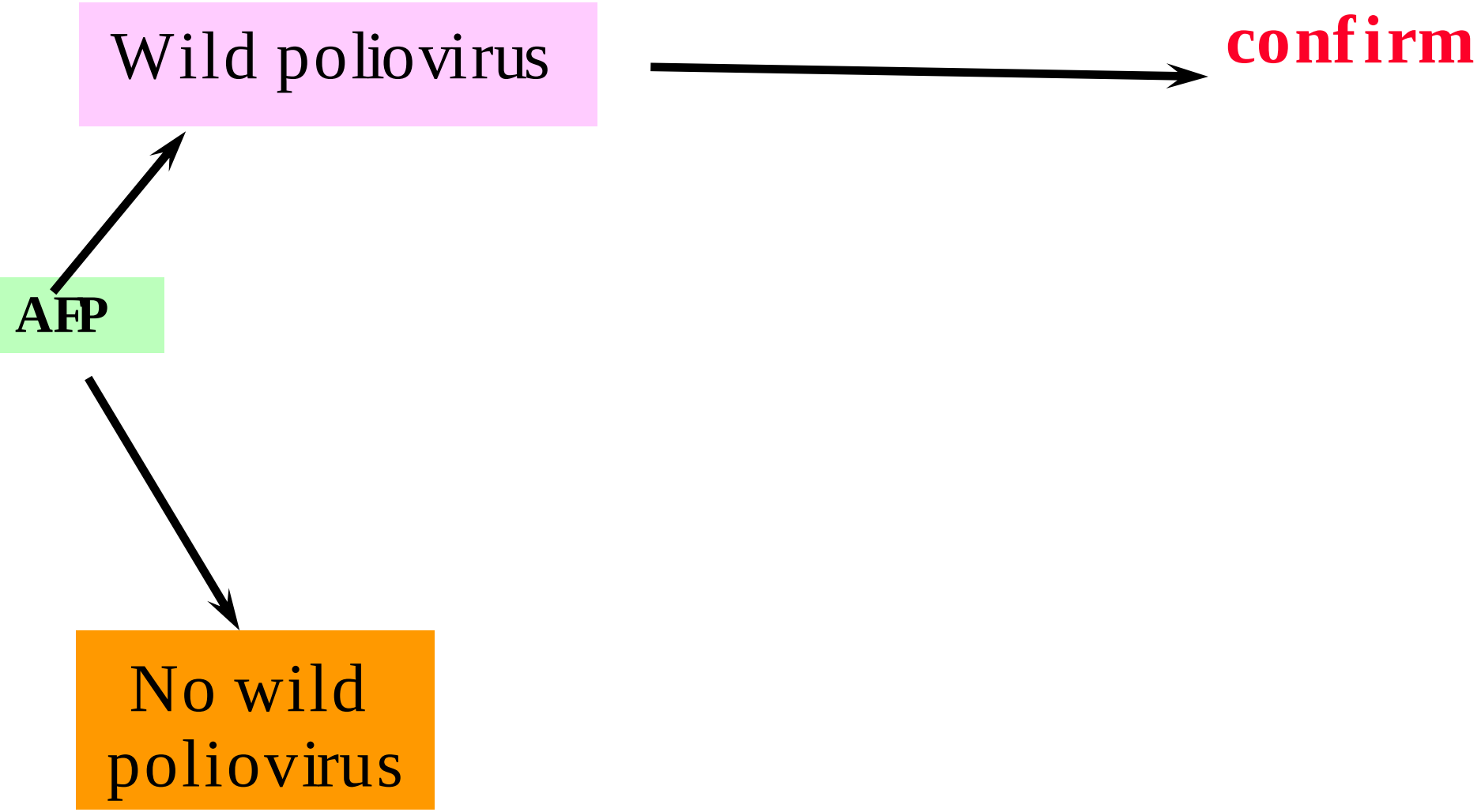
Stool sample

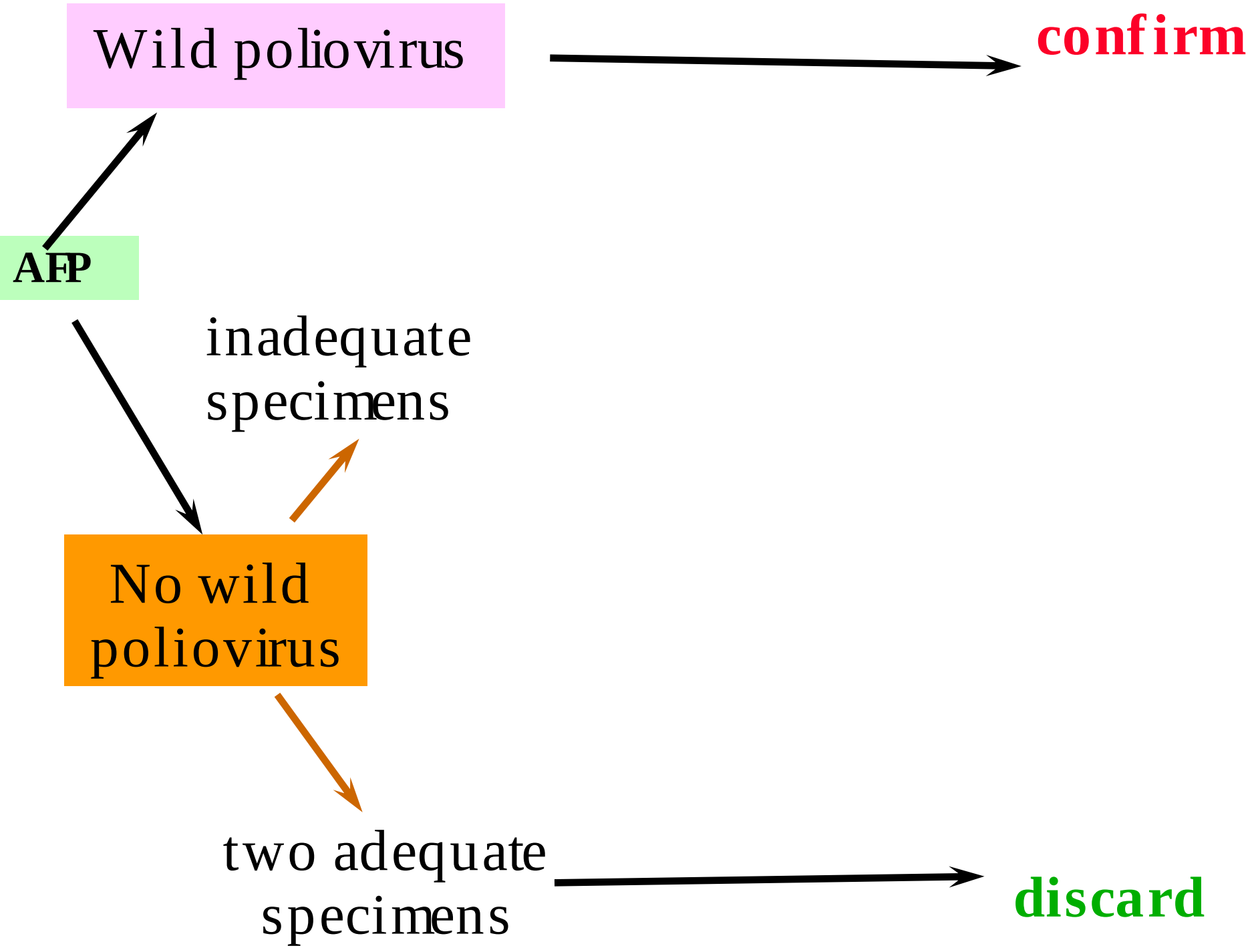
- **Number** -Two stool samples, with a gap of at least 24 hours between two samples
- **Time**- First within 14 days of onset of paralysis
- **Quantity** - Thumb sized/three fourth of bottle to be filled

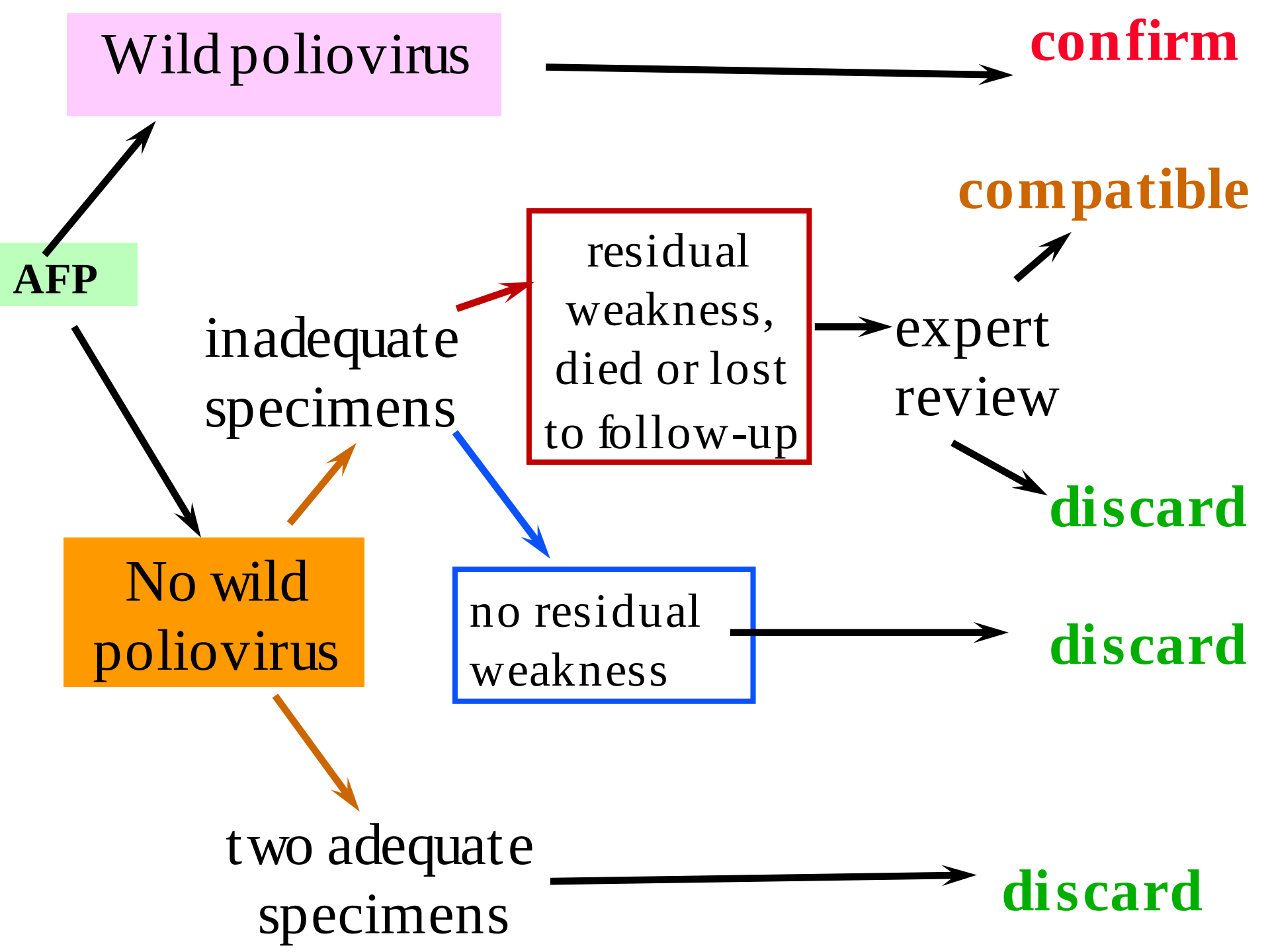
- National Lab– BJMC- Identify presence of polio virus in sample

- Reference Lab.- Confirms the vaccine or wild virus
- Global Specialized lab. For polio—

  Identify not only polio strain but its genetic derive


Wild poliovirus
confirm
AFP
No wild poliovirus


Wild poliovirus
confirm
AFP
inadequate specimens
No wild poliovirus
two adequate specimens
discard


Wild poliovirus
confirm
AFP
compatible
residual weakness, died or lost to follow-up
inadequate specimens
expert review
discard
No wild poliovirus
no residual weakness
discard
two adequate specimens
discard

Virological Classification of AFP Cases

- **Confirmed case-** Wild Polio virus is identified in stool sample
- **Discard-** No wild polio virus is identified inadequate & good quality stool sample taken within 14 days of onset of paralysis
- **Compatible case-** No wild polio virus is identified but stool sample is either inadequate or not collected within 14 days of onset

Rural & Rural Area- POLIO

Service Provider

- TB Supervisor/ Malaria Supervisor at PHC
- Malaria- Link workers appointed by panchayat in high Pf area
- Polio-

  -District Immunization Officer

  -District health Officer

  -State Immunization Officer

  -Surveillance Medical Officer

- No role of lab. Tech of PHC/ UHC
- Sent in regional virology lab.

Overall indicators and targets

the "bottom line" on AFP surveillance

Indicator	Target
number AFP cases reported yearly	≥1/1,00,000 children under 15 years of age
% cases with 2 adequate stools	≥80%

National Vector Borne Diseases Control Programme

(NVBDCP)

Introduction

- Most comprehensive and multifaceted public health programme.Since 2004
- Now under umbrella of NRHM
- Concerned with Prevention & Control of VBDs namely

Malaria

Dengue

Filaria — Mosquito

Japanese encephalitis

Kala-azar — Sand fly

GOAL

- Control & prevent VBDS

Targets

- Annual Blood Examination rate (ABER)- > 10%
- Annual Parasite Incidence (API)- 1.3 or less
- 25% reduction in morbidity & mortality due to malaria by 2010 & 50% by 2012.

Approaches To Control Malaria

- Management of malaria cases in the community

- Active intervention to control or interrupt malaria transmission with community participation.

Approach-Control the disease in community

- **Case Identification-**

  Suspected & Confirmed Case(Lab Diagnosis)

Case Detection (surveillance)

Active-

& Passive-

Passive Case Finding-Centers

Active Case Finding

Rapid fever survey

Mass survey

Grass route workers (HTH)

Treatment

Approaches To Control Malaria

- Management of malaria cases in the community
- Suspected Case- each & every fever case
- Confirmed Case-

  Thick & Thin smear microscopy-

  Malaria Parasite positive

  Rapid Diagnostic Test-

  During epidemic/ high Pf area

Strategies

1. Disease management
   - Early case detection & complete treatment
   - Strengthening of referral services
2. Environmental management
3. Insecticide resistance in vector: More research
4. Long lasting Insecticide treated nets (LLIN)
   - Treated with insecticide twice in a year
5. Improve efficiency & quality of services at primary, secondary & tertiary levels

6. Involvement of NGOs/ private sectors/ community/ local self governance
7. Legislative measures
8. Quality Assurance on lab diagnosis
9. Monitoring & Evaluation
10. Collaboration with National Institute of Malaria Research & medical colleges
11. Inter-sectoral convergence
12. Behavior Change Communication for social mobilization

NVBDCP
Strategies For Rural Areas

1. Early diagnosis & prompt treatment
   - Main strategy of malaria control
   - Redical treatment for all malaria cases to prevent transmission
   - Chloroquine – for uncomplicated malaria

TREATMENT OF UNCOMPLICATED P. VIVAX CASES

AGE (IN YEARS)	TAB. CQ (150 mg Base)			TAB. PQ (2.5 mg Base)
	Day 1	Day 2	Day 3	Day 1 to Day 14
< 1	½	½	¼	0
1 -4	1	1	½	1
5 – 8	2	2	1	2
9 – 14	3	3	$1^{1/2}$	4
15 & above	4	4	2	6

TREATMENT OF UNCOMPLICATED P. FALCIPARUM CASES

AGE (IN YEARS)	DAY 1		DAY 2		DAY 3
	Artesunate (50 mg)	SP	Artesunate (50 mg)	PQ (7.5 mg base)	Artesunate (50 mg)
< 1	½	¼	½	0	½
1 -4	1	1	1	1	1
5 – 8	2	$1^{1/2}$	2	2	2
9 – 14	3	2	3	4	3
15 & above	4	3	4	6	4

High risk Area

- API >2 for last 3years
- Pf >30% of the malaria case
- 25% of population of PHC is tribal

High risk area

- Dipstick Test
- Link worker by Panchayat
- Residual spray- synthetic pyrithroids
- Medicated mosquito nets

Areas with API >2

- Spraying
- Entomological assessment
- Surveillance
- Treatment of the cases

Areas with API >2
Spraying

- Regular insecticidal spry with 2 rounds of DDT 6 weeks interval
- DDT resistant area- Malathion- 3 rounds 6 weeks interval
- DDT & Malathion resistant- Pyrethroids
- Space spraying of pyrthrum extract (2%) in 50 houses in & around every malaria positive case to kill the infective mosquito.

Rural Area

Centre

- Sub Centre
- PHC
- CHC
- District Hospital

Service Provider

- ASHA
- Community volunteers
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TB units

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- Lab. Technician (diagnosis)
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Monitoring & Evaluation

Through-

- **Weekly report**
- **Periodic monitoring**
- **Field visits**
- **Web based management system up to district level**

Indicators

- % of blood smear examined from population under surveillance during the year. (ABER)
- No. of lab. Confirmed malaria cases per 1000 population (API).
- No. of malaria deaths per 1,00,000 population.

Malario-metric Indices

a) ANNUAL BLOOD EXAMINATION RATE(ABER)

b) ANNUAL PARASITE INCIDINCE

c) *ANNUAL FALCIPARUM INCIDINCE*

d) SLIDE POSITIVITY RATE (SPR)

e) *SLIDE FALCIPARUM RATE (SFR)*

f) P.FALCIPARUM PERCENTAGE

ANNUAL BLOOD EXAMINATION RATE (ABER)

Indicates Operational efficiency

$$\frac{\textit{BLOOD SMEARS EXAMINED}}{\textit{TOTAL POPULATION}} \times 100$$

ABER should be equal to fever rate in the community.

MBER- 0.8 non transmission session

1.2-1.8 =high transmission session

Vector Indices

Vector control surveillance

1) **House Index-** Percentage of houses positive for larvae of aedes.

2) **Breteau Index-** No of containers positive for aedes egypti per 100 houses

3) **Container Index**- Percentage of containers positive for aedes breeding