

Model Micro Plan

Zika Virus Disease

**Micro Plan for Containing Local Transmission of Zika
Virus Disease**

Epicentre -----
----- Block, ----- District,
-----State

Micro-plan for Containing Local Outbreak of Zika Virus Disease

Geographic Location: ----- Municipality, ----- Block, ----- District

1. Demographic details

District details

District area:
District Population:
No of Blocks:
No of Municipalities:

Block details

Name of Block:
Population:
Number of villages:

Affected area (Containment Zone)

Name of the Epicentre : Municipality ward/ village
Number of affected Municipalities /villages
Number of Villages/ Wards in 0-3 Km area:
Population in 0-3 Km area:
Sex differential of the population in the affected area
Age differential of the population in the affected area:
Pregnant women receiving antenatal care in the affected area:
Eligible couples in the affected area.

2. Map of the Affected area

Clearly demarcate index cluster area and containment zone (0-3 Km)

The containment zone will be divided into sectors with 100 houses. The sectors will facilitate all activities for containment as described in the foregoing paragraphs.

Listing of Sectors

Sector	Name of Sector	Nodal Officer
A		
B		
C		
D		

3. Objective

To contain the outbreak of Zika virus Disease.

4. Human Resource

4.1. Administrative and Technical Personnel

S. No	Name	Designation	Contact Number (O)	Mobile
1		DM		
2		ADM		
3		CMO/ Addl CMO		
4		District VBD Control Officer		
5		BDO/ CDPO		
6		Block MO/ MO I/c		
7		BEE		
8		NRHM Block Manager		

Central RRT

S. No	Name	Designation	Contact Number

State RRT

S. No	Name	Designation	Contact Number

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District RRT

S. No	Name	Designation	Contact Number

4.2. Human Resource for operations / field activities

4.2.1 Norms for conduct of containment operations:

A health care worker (MPW/ANM/ ASHA) will be able to visit 100 households in a day (50 households in difficult area).

An Entomologist will be able to cover 100 households per day for vector surveillance

A staff engaged in vector control operations will be able to cover 50 households in a day (25 households in difficult area).

A supervisory Medical Officer shall be deployed over a Sub Centre area / 5000 population

A supervisory entomologist/vector control/public health expert shall be deployed over a Sub Centre area / 5000 population

4.2.2 Human Resource requirement for field operations

S. No	Designation of staff	Nature of work assigned	No. of personnel deployed for containment operation	Mobilized from with in the District	Mobilized from adjoining District
1	Medical Officers	Supervisory			
2	LHV	Supervisory			
3	Entomologist/ vector control specialists/ Insect collectors	Entomological Surveillance. Collect Aedes mosquito for detection of Zika virus. Supervision of IVM operation.			
4	Operation staff for IVM	Larvicide application. Indoor Space spray			

		(Pyrethrum/cyphenothrin) Outdoor fogging (Malathion technical /Cyphenothrin)			
5	ANM/ ASHA	House to House visit to: Search clinically compatible cases including those among pregnant women. Counsel individuals for personal protection from mosquito bites and avoid mosquitogenic conditions in their property Counsel eligible couples on informed choice of contraception Counsel pregnant women to avoid sex/ use condoms. Offer free condoms			
6	Block Extension Educator and other communication staff	Public information education and communication campaign targeting Schools, colleges, work place, pregnant women.			
7	Municipal/ village Panchayat contracted staff Civil society volunteers	Encouraging and participating in public and personal property clean ups (Sanitation drive) for eliminating mosquito habitats			

4. Components of Micro-plan

4.1 surveillance

4.1.1. Active Surveillance

4.1.1.1. Constituting Teams for Human Health Surveillance:

Each health worker would cover 100 houses in 0-3 km. The listing of urban wards/ villages allocated to surveillance teams, their names, name of supervisors for each team and their contact number is at **Appendix-I**

4.1.1.2. Assigning Tasks to the Teams

The health worker during the house to house visit would collect information on clinically compatible cases including those among pregnant women. The name, age, sex, occupation and the address of such persons to be recorded on proforma at **Appendix-II**.

The Health worker will counsel household members to take precautions to avoid mosquito bites and avoid mosquitogenic conditions in and around their property. They will also counsel eligible couples on informed choice of contraception. She will also counsel pregnant women to avoid sex/ use condoms and offer free condoms.

The Health worker will also distribute fliers/ pamphlets to individual households.

4.1.1.3. Monitoring

The door to door surveillance will be supervised by Medical Officers/ LHV/MSW assigned sectors within the defined surveillance zone. He/she will also collect data from the health workers under him/ her, collate and provide the cumulative data to the Control Room by 4.00 P.M.

The supervisory officers will visit clinically compatible cases and after medical examination take samples for testing.

4.1.2. Passive Surveillance

All health facilities in the containment zone of 0-3 km will be listed. All such facilities both in Government and Private sector (including clinic) shall report clinically compatible cases of zika virus disease. List of health facilities identified for reporting suspect Zika virus disease is at paragraph-6. Proforma for reporting suspect Zika virus disease is at **Appendix-III**.

4.1.3. Entomological surveillance

The Entomologists will be assigned sectors. In their jurisdictional area, they will carry out larval and adult surveys. Breteau Index will be the indicator used for assessment of larval surveys. Ovitrap will be used for adult *Aedes* mosquito survey in places where the Breteau Index is less than five. In outbreak containment, the survey should be done continuously on daily basis to cover the entire area under the containment zone. Daily reports will be generated for the vector surveillance.

5. Sample Collection and Transportation

The Medical Officer will collect clinical samples from the febrile cases. The samples collected will be dispatched to the nearest identified laboratory. The sample collection form is at **Appendix-IV**. The line listing of tested samples will be as **Appendix V**. The name of the laboratory and the contact address of the nodal person for the laboratory is ---
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6. Health Facilities

All laboratory confirmed zika positive cases will be admitted for 2 weeks to an identified health facility. The Medical Officer, in whose Jurisdiction the case is reported shall ensure his/ her hospitalization. The hospital shall have isolation wards that will be mosquito proofed. Alternatively, LLIN bed nets will be used for individual patients. There may not be an indoor treatment facility in the defined surveillance zone. In such instance the nearest indoor treatment facility will be identified. Also one or two alternate health facilities will also be identified. Details of the identified health facilities are as under:

Name of identified Health Facility/ Alternate Health Facility:

Name of the identified health facility	Name and designation of the nodal person	Contact Number	No of isolation beds
Medical Superintendent			
Team leader for clinical management			
Hospital Emergency			

6. Contact Tracing

The contacts of the laboratory confirmed case of Zika, having residential address beyond the containment zone, will be line-listed and tracked and kept under surveillance. The Supervisory officer in whose jurisdiction, the laboratory confirmed case falls shall inform the Control Room about all the contacts and their residential addresses. The Control Room will in turn inform the supervisory officers of concerned sectors for surveillance of the contacts. If the residential address of the contact is in adjoining district / State, the district IDSP will inform the concerned District IDSP.

All such contacts of laboratory confirmed case of Zika virus disease will be kept under surveillance for 2 weeks. They will be monitored for clinically compatible signs and symptoms of Zika virus disease. They will be provided with mosquito repellent creams, asked to wear dress that will cover their body, and sleep under LLIN to avoid exposure to mosquito. These actions will be continued for 2 weeks. There will be intense vector control measures within 400 meters of their residential house.

Proforma for line listing of contacts is at **Appendix-VI**.

7. Transportation

A large number of vehicles will be required for mobilizing the surveillance and supervisory teams (active and contact tracing). Ambulances/vehicles will also be required for transportation of suspect cases. Vehicles allocated to the teams will be listed and will form **Appendix-VII** to the micro plan document.

8. Vector control measures.

The sectors with in the map of the affected area will have a layer indicating the breeding sites with captions of its kind (permanent, temporary, tyres/ sumps/ tanks/ disposable wastes etc). The operational staff for the IVM will be allocated sectors within the defined surveillance zone. Separate vehicles will be required for entomological surveillance and vector control team. If required staff will be mobilized from neighbouring districts. Their roster to cover weekly application of larvicide, indoor space spray and fogging will form **Appendix-VIII** to this document.

Streets, roads, building structures, boundaries of sectors with in surveillance areas, and areas where favorable condition exists for vector resting/breeding like water collections, vegetation etc will be mapped.

Presently as per guidance of NVBDCP, Pyrethrum/Cyphenothrin and Malathion Technical/cyphenothrin formulations are in use for indoor space spray/ outdoor fogging applications respectively. Temephos is used as larvicide. The details on preparation of formulation and its application are as under:

Sl. No.	Name of the Insecticide	Commercial formulation	Preparation of Formulation	Equipment used	Remarks
1	Pyrethrum Extract	2.0% extract	1: 19 i.e. 1 part of 2% pyrethrum extract in 19 parts of kerosene (v/v)	Flit pump or hand operated fogging machine	Used for Indoor space spray
2	Cyphenothrin	5% EC	0.5 mg a.i per sq.mt.(20 ml in 1 litres K.Oil)		
3	Malathion	Technical Malathion	5 parts of Tech. Malathion in 95 parts of Diesel (v/v)	Shoulder mounted Fogging machine or Vehicle mounted thermal Fogging	Outdoor thermal fogging.
4	Cyphenothrin	5% EC	3.5 g a.i per hactare (7 ml in 1 litres diesel)		
5	Temephos	50% EC			In Potable water

	(Larvicide)	Graduals 1%			Clean standing water, shallow ponds, lakes etc.
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Mostly the effective application is about 330 ml per hectare; however, it varies with type of machine used. Power operated mist-blowers and aerosol generators are recommended for outdoor aerosol application for control of *Aedes*. For indoor application, hand-operated aerosol applicators/portable aerosol generators and mist-blowers are recommended.

Daily application report shall be filed duly vetted by the supervisory entomologist. The daily application report is at **Appendix IX**.

9. Logistics

The following logistics for the containment operations will be ensured:

S. No	Name of the item	Stock at Hand	Stock required for operations	Remarks
1	PPE			For the operational staff of IVM
2	Surgical Mask			
3	Sample collecting kits			
4	Malathion			
5	Pyrethrum			
6	Cyphenothrin			
7	Temephos			
8	Fogging Machines			
9	Hand held sprayers			

10. Communication

Block Extension Educator / or any other designated communication staff will be allocated the work of public education outreach on zika virus disease. Public information education and communication campaign shall target schools, colleges, work place, pregnant women. The key messages (including that used for Inter-personal Communication) are at **Appendix X** to this document.

The sector wise allocation of BEE their name and contact no. will be listed. Municipal/ Village Panchayat Officers will be allocated sectors with in the surveillance zone for encouraging and participating in public and personal property clean ups (Sanitation drive) for eliminating mosquito habitats. They will use their own staff, civil society

volunteers and NGO's in the area. The rostering of staff for public education outreach is at **Appendix-XI**.

11. Data Management

The Control Room will have data managers (deployed from IDSP/ NHM) responsible for collecting, collating and analyzing data from field and health facilities. They will work in 3 shifts. Data Collection tools will form **Appendix-XII** of this document. Output variables to be generated at micro level on daily basis;

- No. of Suspect case of Zika virus disease
- No. of laboratory confirmed case „
- No. of contacts traced and kept under surveillance
- No. of cases of GBS/ Neurological disorder
- No. of pregnant mothers
- No. of Eligible couples counseled
- No. of pregnant mothers counseled
- No. of condoms distributed.
- Density of *Aedes* mosquito in sectors undergoing entomological surveillance
- Area covered for Malathion fogging
- % of houses covered under pyrethrum spray.

12. Control Room

- The following details will be provided under this head :
- Nodal Officer with contact number:
- Control Room Number:
- Duty rosters of personnel manning 24x7 Control Room (**Appendix XIII**)

13. Office orders (indicative)

- Orders on notification.
- order for taking services of personnel
- Draft order on taking private institutions such as schools for temporary hospitals.

14. Budgeting (indicative)

S.no	Item	Unit cost	Total cost	
1.	Setting isolation facility			
	Mosquito proofing			

	LLIN bednets			
2.	Transportation			
	No. of vehicles hired			
	POL expenditure for Office vehicles/ ambulances			
3.	Communication			
	Cost of printing posters			
	Hiring personnel for display of posters			
	Cost of hiring vehicles for miking			
	Advertisement cost : local dailies cable network local TV channels SMS			
4	Logistics			
	Three layered surgical mask			
	PPE			
	Pyrethrum Extract			
	Malathion			
	Cyphenothrin			
	Temephos			
5	Contingency Expenditure			

18. Appendix

I	Containment zone: Identified Sectors for surveillance
II	Data collection tool at field level
III	Daily Line listing of Patients being investigated at the hospital
IV	Sample Collection Form
V	Line listing of Patients being investigated
VI	Line listing of Contacts
VII	Transportation arrangement for Containment Operation
VIII	Containment zone: Identified Sectors and rostering of staff for Entomological surveillance/ vector control
IX	Daily Application Report
X	Key messages for Zika virus disease
XI	Containment zone: Identified Sectors for Public Education Outreach and rostering of identified communication staff
XII	Format for daily report of Zika virus disease Outbreak
XIII	Duty rosters of personnel manning 24x7 Control Room

Appendix-I

Containment zone: Identified Sectors for Surveillance

Sector	Name of Municipal ward/ village	Name of ANM	Contact Number	Name of Supervisory Officer	Contact Number

Appendix II

Data collection tool at field level (Field Level Data Collection Sheet)

Sector :
Village allocated: :
Name of the field worker
Name of the Supervisor
Name of the PHC doctor

S.No	Name	Age	Sex	Address	c/o Fever rash conjunctivitis Body Ache	Remarks

Data collection tool at field level (Field Level Data Compilation Sheet)

S.No	Name of village	Total population surveyed	M	F	No. of Suspect cases
Total					

Appendix-III

Daily Line listing of Patients being investigated at the hospital

S.No	Name	Age	Sex	Address	Symptom complaint with Zika	Remarks

Sample Collection Form

Patient Information

Name	Address: <ul style="list-style-type: none"> • House number: • Street: • Locality: • City: • District: • State/UT: • Pin Code:
Age	
Sex	
Contact No.	

Exposure History

Travel History: History of travel to Zika affected area	Yes/No
If Yes, <ul style="list-style-type: none"> • Country/ies travelled • Travel start date: • Arrival date: 	
Known mosquito bites during travel or in two weeks prior to symptom onset	
History of unprotected sexual contact with traveler from affected area	
History of blood transfusion in two weeks prior to symptom onset	
Household contact with similar illness	

Clinical History

Symptoms <ul style="list-style-type: none"> • Rash • Fever • Arthralgia/Myalgia • Conjunctivitis • Headache 	
Date of onset of first symptoms/Days since onset of symptoms	

Pregnancy status (in case of females)

LMP	
Pregnancy status	Pregnant/Not Pregnant/Status not known
If pregnant, <ul style="list-style-type: none"> • is the pregnancy registered • Period of gestation (in weeks) • Has the ultrasound been done, after onset of symptoms? • If Yes, USG findings suggestive of Intra-natal Zika virus infection 	

Complications

History suggestive of Acute flaccid paralysis:	Yes/No
If Yes, <ul style="list-style-type: none"> • Details • Date of onset of weakness/paralysis • History of acute respiratory illness 30 days prior to symptom onset • History of OPV administration to any close contact within 90 days prior to onset of symptoms • Any immunization received in last 30 days prior to onset of symptoms: 	

<ul style="list-style-type: none"> ○ If yes: Details ○ Vaccine ○ Date of vaccination 	
<p>Microcephaly (in case of newborns/infants)</p> <ul style="list-style-type: none"> • Date and time of birth • Head circumference at birth (or wit in 48 hours) • Nme and designation of Paediatrician who assessed the case 	

Medical History:

Any chronic cardiovascular Disease	
Chronic Kidney/Liver Disease	
Immune deficiency disease:	
Any other co-morbidity	

Laboratory

Sampling done	Yes/No
<p>If yes,</p> <ul style="list-style-type: none"> • Type of sample • Date of sampling • Sample Number • Laboratory • Test outcome 	

Reporting authority

Name	<p>Contact Information</p> <ul style="list-style-type: none"> • Landline • Mobile • E-mail
Designation	
Institution	
<ul style="list-style-type: none"> • Address 	

Appendix-V

Line listing of Patients being investigated

S.No	Name	Age	Sex	Address	Date on which sample taken	Details of samples	Date of sample dispatch	Report received on	Results of lab test	Remarks on Follow up
Signature of Designated Nodal Officer for Surveillance										

Appendix VI

Line listing of Contacts

S. No	Name	Father/ Husbands name	Age	Sex	Address	Contact of	Date on which exposed	To be under surveillance till	Remarks

Appendix-VII

Transportation arrangement for Containment Operation

Sector	Name of the Sector	Purpose for Vehicle Deployed	Vehicle Regn. number	Driver name	Contact Number
A		House to house surveillance			
		IVM			
		Supervisory Staff			
B		House to house surveillance			
		IVM			
		Supervisory Staff			
C					
D					

Appendix-VIII

Containment zone: Identified Sectors and roster of staff for Entomological surveillance/ vector control

Sector	Name of Municipal ward/ village	Name of IVM operation staff	Contact Number	Name of Supervisory Entomologist/vector control expert	Contact Number

Appendix IX

Daily Application Report

Name and model of equipment..... Locality.....
Serial No. Insecticide used..... Application (cycle) No.

Date.....

Time of application	Insecticide used (ml or ltr)	Area identification (locality/village)	Area covered (hectares)	No. of houses/ rooms	Population covered

Remarks:

Submitted by:.....
(Field operator)

Zika virus disease

Key messages:

It is caused by Zika virus and mainly transmitted through mosquitoes. As of now no Zika virus is seen in India but the transmission vector, Aedes mosquito is seen in abundance.

Symptoms can include low-grade fever (between 37.8°C and 38.5°C); joint pain, notably of small joints of hands and feet, with possible swollen joints; muscle pain; headache; red eyes and rash

- Only one in five of Zika infected persons will have symptoms and the sickness is usually mild.
- The symptoms appear 3-12 days after getting the infection & last for 4-7 days

Treatment: Symptoms clear up within 4-7 days without any treatment with plenty of fluids, and rest. Use Paracetamol for pain and fever if needed. Do not take aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs) like ibuprofen, due to a risk of bleeding.

Zika can be treated at home but seek medical help when there is:

- Very high fever (40°C/104°F).
- Fever followed by unexplained bleeding from the skin or gums (caused by Dengue). This is an emergency.
- Illness in a baby, elderly or with serious health problems including high blood pressure or heart problems.
- Illness in pregnant women
- Severe weakness, tingling in the legs, arms or face.

Transmission: Zika virus spread through the bite of an infected Aedes species mosquito which bites during the day time. Zika virus can also spread through unprotected sexual contact.

- A pregnant woman can pass Zika virus to her fetus during pregnancy or around the time of birth.
- There is a strong possibility that Zika can spread through blood transfusion do not donate blood .
- There is no evidence that Zika is spread through touching, coughing, or sneezing.
- Transmission of Zika virus infection through breastfeeding has not been documented

Prevent mosquito bites:

- **Personal Protective measures:** Use mosquito repellent cream, electronic mosquito repellents, use of bed nets, and dress appropriately to cover most of the body parts especially during day time.
- **Mosquito breeding control:** Prevent/ control mosquito breeding in & around your house with the following steps: prevent open water collection; cover all water tanks and containers with tight lids; dispose & destroy all unused containers, junk materials, tyres, coconut shells etc. (which are potential breeding sites), empty, scrub & dry the desert coolers every week before refilling. Regularly empty and scrub all containers holding water for a week like bird bath, flower vase, ant-trappers etc.

For clarifications & queries, please contact 'Zika Virus Disease Help Line' No. 011-23061469/23063205.

[Key Messages : Courtesy- Central Health Education Bureau]

Appendix-XI

Containment zone: Identified Sectors for Public Education Outreach and rostering of identified communication staff

Sector	Name of Municipal ward/village	Name of Municipal/Panchayat staff	Contact Number	Name of Supervisory BEE	Contact Number

Cluster Containment			
Format for daily report of Zika virus disease Outbreak			
		Date :	
State:	District:	Block :	Epicentre:
Total No. of Village in the block:	No. of affected Municipality /village:		

A) A 1 Population Based Information		No. of villages/municipality/localities	Population Surveyed(Daily)	Population surveyed (Cumulative)
0-3 Km Population				
A-2 Morbidity data				
			Daily	Cumulative
Persons with fever / symptoms consistent (only new Cases) with Zika virus disease	0-3 Km			
Persons with Acute Flacid Paralysis	0-3 Km			
Pregnant women with fever / symptoms consistent (only new Cases) with Zika virus disease	0-3 Km			
B) Hospital based Information.....				
Outpatient			Daily	Cumulative
Persons with fever				
Inpatient				
Persons with fever (admitted)				
Persons with AFP				
Pregnant mother suspect of Zika virus disease				

Laboratory Confirmed case of Zika virus disease		
Laboratory confirmed case of Zika Virus Disease with AFP/ GBS		
Laboratory confirmed case of Zika virus disease with pregnancy		

D) Contact Tracing		
Number of contacts traced		

E) Integrated Vector Management	No of houses in 0-3 km	No. of houses sprayed	Percentage
Villages /urban area covered by indoor space spray			

F) Public Education outreach	No of houses in 0-3 km	No. of houses Visited	Percentage
Villages covered by Public Education Outreach			
	No of Pregnant mothers in 0-3 km	No. of Pregnant mothers visited and counseled	Percentage
Pregnant mothers counseled			
	No of eligible couples in 0-3 km	No. of eligible couples visited and counseled	Percentage
Eligible couples counseled			
Condom distributed			

G) Monitoring Health Staff

Health personnel deployed in field including medical officers, Health supervisors/health workers etc.		Health personnel deployed in field complaining of Fever/ symptoms consistent with Zika virus disease	
Hospital staff including Medical Officers, Nurses, Attendants etc.		Hospital staff complaining of Fever/ symptoms consistent with Zika virus disease	

H) Stock Position

Item	Previous days stock at District HQ	Consumed for the day	Stock at hand(s)	Stock to be requisitioned if any
Pyrethrum Extract 2%				
Malathion Technical				
Cyphenothrin 5% EC				
PPE				
N-95 Masks				

Note: Daily report to be faxed by 11.00 a.m.

- Director NICD (Fax No: 011-23922677; 011-23921401)
- Director EMR (Fax No: 011- 23061457)

Block MO

Signature

(Name & Desg. Of the reporting officer)

Appendix-XIII

Duty Roster for Personnel Manning the Control Room (24x7)

	Morning Shift (8.00 A.M to 2.00 P.M)	Afternoon Shift (2.00 P.M to 8.00 P.M)	Night Shift (8.00 P.M. to 8.00 A.M)
	Name of Officer Designation Mobile Number	Name of Officer Designation Mobile Number	Name of Officer Designation Mobile Number