



Road Map for Measles & Rubella Elimination in Tamil Nadu by 2023

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Government of Tamil Nadu

Department of Public Health and Preventive Medicine

Immunization Division

Measles and Rubella Elimination by December 2023 in the State

Measles and Rubella Elimination by December 2023

Background:

Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations.

Immunization is one of the most important and cost-effective strategies for the prevention of childhood sicknesses and disabilities and is thus a basic need for all children.

Immunization services in Tamil Nadu:

Tamil Nadu has always been a pioneer State in the country in implementing Health care activities with special attention in Maternal and child care services.

Tamil Nadu has started the Expanded Programme Immunization (EPI) against Six Vaccine Preventable Diseases (VPDs) in 1978 and further strengthened as Universal Immunization Programme (UIP) in 1985.

Under the Universal Immunization Programme in Tamil Nadu, 11 Vaccines are being provided to children and pregnant mothers against the 12 Vaccine Preventable Diseases (VPDs) namely Tuberculosis, Diphtheria, Pertussis, Hepatitis B, Hemophilus Influenza type-b, Tetanus, Poliomyelitis, Measles, Rubella, Rota Virus, Pneumococcal disease and Japanese Encephalitis (in selected 14 endemic districts).

Annually, around 10.00 lakhs Pregnant Women and 9.16 lakhs Children / Infants are being covered under this UIP programme and the State consistently achieving Immunization coverage of over 99%.

Immunization sessions are being conducted both as Institutional on all days in a week and on every Wednesday as Outreach sessions. Institutional Immunization sessions will be conducted in all Primary Health Centres, Paediatric Units of Government Medical College Hospitals, District Head Quarters Hospitals, Government Taluk & Non-Taluk Hospitals. Outreach Immunization services are being conducted in all villages and towns. In addition,

Mobile Medical Unit (MMU) covers children residing in remote, inaccessible and hilly terrile areas targeting high risk areas for immunization.

Performance:

The dedicated public health staff with their efforts have contributed to a consistent Immunization coverage of over 99% in the State. The recent National Family Health Survey (NFHS), Round 5 published in 2021, has shown the improvement of the State Full Immunization Coverage at 90.2%. The below table(1) shows the Immunization Performance for the last five years along with comparison with NFHS 4 &5.

Immunization Performance for 5 years

Vaccine details	2018-19 (In %)	2019-20 (In %)	2020-21 (In %)	2021-22 (In %)	2022-23 (upto October) (In %)	NFHS 4 2015-16 (In %)	NFHS 5 2020-21 (In %)
BCG	99	97	97	99	101	94.9	97.6
Polio	101	100	99	99	99	82.3	91.5
Penta	101	100	99	99	99	84.5	94.8
Rota			99	99	99		66.4
IPV			99	99	99		
MR 1 st dose	101	100	99	99	104	85.1	95.8
Fully Immunized	99	99	97	97	103	69.7	90.4

Success of Immunization Programme

Because of effective immunization coverage for more than two decades, the State has so far vaccinated about 4 crore children with various vaccines like Hepatitis B, BCG, OPV, Penta, IPV, Rota, PCV, MR and DPT vaccine.

Due to successful implementation of immunization programme, the State has attained polio free status since 2004.

The incidence of Pertussis, Tetanus are almost nil. There has also been a significant reduction in Diphtheria and Measles cases.

Reported incidence of VPD cases in Tamil Nadu 2018 to 2022 CY

YEAR	POLIO		MEASLES			DIPHTHERIA			PERTUSIS		NEO NATAL	
	Cases	Deaths	Suspected	Positive	Deaths	Suspected	Positive	Deaths	Cases	Deaths	Cases	Deaths
2018	0	0	242	46	1	0	0	0	0	0	0	0
2019	0	0	270	56	0	617			1	0	0	0
2020	0	0	271	17	0	69			0	0	0	0
2021	0	0	484	15	0	53	20		0	0	0	0
2022*	0	0	1264	36	0	103	16	1	0	0	0	0

* upto November 2022

Genesis of Measles control in Tamil Nadu

Tamil Nadu was the first state in the country to initiate Measles Outbreak Surveillance (MOB) in 2005 under the guidance of GoI. State level ToT sensitization workshops were conducted and subsequently all Medical Officers and paramedical staff were oriented on MOB detection, investigation and Public Health response. The District Epidemic Response Team (DERT) constituted under the chairmanship of DDHS for appropriate field investigation and Public Health response activities.

Measles 2nd dose

In 2011, approximately 30 million children were given Measles vaccination since the inception of Routine Immunisation programme in the State. The State has followed the practice of giving one additional dose of ring immunisation during Measles outbreak. Due to sustaining of high coverage over the years, there has been good reduction in the incidence of Measles cases.

Measles coverage / incidence

Though the State reported high coverage (95% and above), there may be around 10 to 15% of estimated children not developing Measles antibodies. Moreover, due to high coverage of

Measles vaccination, the infection was shifting to higher age group. Hence, Measles 2nd dose was introduced in the Routine Immunization schedule on 1-3-2011.

MR campaign

Rubella disease causes affects 3 million children in India every year. When rubella infection occurs during early pregnancy which leads to Congenital Rubella Syndrome (CRS) i.e. congenital cataract, congenital glaucoma, congenital deafness, congenital cardiac defects and microcephaly. There is no specific treatment for rubella and the disease can be only prevented through immunization. Considering the disease burden, WHO has recommended to include MR vaccine under Routine Immunization.

Being a good performing State, as per the guidelines of National Technical Advisory Group on Immunization GoI has given priority to Tamil Nadu for implementation of MR vaccine.

Main advantage of MR vaccine with a single prick, it provides protection to a child from 2 life threatening deadly diseases – Measles and Rubella. Prevents the birth of newborn with congenital defects and can be prevented only by vaccination.

As per the National Technical Advisory Group on Immunization (NTAGI) recommendation, Measles Rubella vaccination campaign was conducted during the month of February 2017 targeting all children aged 9 completed months to <15 years with a simultaneous switch from Measles to Measles Rubella vaccine in the National Immunization Schedule. Measles Rubella vaccination campaign was conducted from 6th February to 31st May 2017. The coverage is 97% (i.e.) 1,70,53,117 children were vaccinated with Measles Rubella vaccine during the campaign.

Measles Surveillance

In 2019, case based suspected Measles Surveillance was started in the state. All the doctors, members of IAP, IMA, etc., and para medical staff were oriented for blood sample collection to detect (IgM Antibodies) and sample for virus isolation (Throat swab/Nasopharyngeal swab/Urine sample) for laboratory confirmation of cases.

GoI is committed to Measles & Rubella (MR) Elimination by December, 2023 in India. MR Elimination is defined as zero transmission of endemic Measles and Rubella viruses, as

evidenced by zero clinical disease in a defined geographic area for <12 months, in presence of high-quality surveillance system that meets key performance indicators.

In June 2021, syndromic Fever and Rash (FR) Surveillance was started to improve MR Surveillance sensitivity. Fever with Rash (FR) cases in all age group are screened by collecting blood and virological sample (throat swab / Nasopharyngeal swab / Urine) for confirmation of Measles / Rubella etiology in WHO accredited laboratories viz., King Institute and Preventive Medicine, Chennai and VDRL Laboratory, Salem.

VPD workshop

State level VPD Surveillance workshop was conducted on 26th and 27th May 2022 at Hotel Leela Palace, Chennai and again on 07-06-2022 at HMDI, Villupuram with support of WHO vide R.No. 1792918/Imm/S3/2022 dated 24-05-2022. Officials from Government of India, Government of Tamil Nadu, other departments, Deputy Director of Health Services participated the meeting.

MR Elimination:

As per Government of India instructions the revised Suspected Measles case definition to Fever and Rash and MR Elimination from India by December 2023 was communicated to all HUDs.

MR Elimination in Tamil Nadu

Tentative Action Plan

S.No	Subject	Concerned Authority	Date
1	State Task Force Meeting	Secretary, GoTN	3 rd week of December 2022
2	Chief Secretary Zoom meeting to District Collectors	Chief Secretary, GoTN	4 th week of December 2022
3	State level workshop for DMS, DME and DDHS	DPH	4 th week of December 2022
4	District Task Force Meeting completion	DDHS	By end of December 2022
5	ToT for District level Officials	DPH	By end of December 2022

6	Regional Meetings	JD (Imm)	3 rd week of December 2022
7	Block level meeting (to be conducted by 2 nd level Officers)	DDHS	3 rd week of December 2022
8	DPH letter to DME and DMS	DPH	2 nd week of December 2022
9	DME letter to Deans	DME	2 nd week of December 2022
10	DMS letter to JDHS and Private Hospitals	DMS	2 nd week of December 2022
11	Review of Urban Immunization	DDHS	Every month
12	Review of HMIS Data Entry	DDHS	Every month
13	Private Hospital Vaccination	JDHS	Every month
14	MR reporting from SIDDHA Hospital	JDHS and DDHS	Every month
15	Roles of different Departments in MR Elimination	DPH	2 nd week of December 2022

- One person to be deputed to GH / MCH – Action by DDHS
- Temple Festivals to be monitored for MR – Action by DDHS
- Request for UNICEF / NHM funds – Action by DPH
- SMO involvement – Action by WHO

The same was also discussed with all Deputy Director of Health Services in details during the VPD Workshop conducted on 26.05.2022 and 27.05.2022 at Chennai.

Plans towards Strategic Objectives:

I. Achieve and maintain high population immunity with at-least 95% vaccination coverage of two doses of measles and rubella containing vaccine in every district of every state of India

- ✓ Ensure that all children receive MRCV2 by 24 months of age and that missed doses are provided up to 5 years of age, with two doses given 4 weeks apart. Vaccination card retention should be promoted.

II. Sustain a sensitive and timely case-based Fever and Rash and Congenital Rubella Syndrome (CRS) surveillance.

III. Ensure adequate outbreak preparedness and respond rapidly to measles and rubella outbreaks.

MR Coverage:

The MR coverage of the State for the period April 2022 to October 2022 is detailed below:

Name of Vaccine	TNHMIS	IHIP
MR – 1	105%	101%
MR – 2	96%	92%

HUD wise MR-1 and MR-2 coverage for the period April 2022 to October 2022 as follows:

MR 1st Dose and 2nd Dose 2022-2023 (April 2022 to October 2022)									
S.No	HUD	Infant Target	Prop. Target	MR 1st Dose	%	Annual Target	Prop. Target	MR 2nd Dose	%
1	Aranthangi	10098	5891	5960	101	10324	6022	5469	91
2	Ariyalur	10724	6256	6452	103	10724	6256	5754	92
3	Attur	13835	8070	8311	103	13835	8070	7814	97
4	Chengalpattu	30996	18081	19185	106	30783	17957	17883	100
5	Chennai	74210	43289	47548	110	75214	43875	46537	106
6	Cheygar	11223	6547	7119	109	11223	6547	5675	87
7	Coimbatore	44513	25966	26748	103	43869	25590	25458	99
8	Cuddalore	31906	18612	20041	108	31906	18612	18975	102
9	Dharmapuri	24217	14127	14062	100	24127	14074	13546	96
10	Dindigul	16087	9384	9491	101	16083	9382	8678	92
11	Erode	22972	13400	14125	105	23347	13619	13014	96
12	Kallakurichi	21370	12466	13234	106	21139	12331	11262	91
13	Kancheepuram	16176	9436	10385	110	16176	9436	8949	95
14	Karur	13660	7968	7995	100	13061	7619	7254	95
15	Koilpatti	7543	4400	4469	102	7551	4405	3934	89
16	Krishnagiri	28900	16858	16923	100	28900	16858	16044	95
17	Madurai	42550	24821	25283	102	41981	24489	23389	96
18	Myladuthurai	10790	6294	6612	105	10888	6351	5732	90
19	Nagapattinam	7798	4549	4851	107	7775	4535	4040	89
20	Nagarcoil	21875	12760	13553	106	21817	12727	12648	99

21	Namakkal	19385	11308	11554	102	19385	11308	10205	90
22	Palani	10100	5892	5842	99	10100	5892	5205	88
23	Paramakudi	7878	4596	5019	109	7770	4533	4326	95
24	Perambalur	8321	4854	5134	106	7966	4647	4265	92
25	Poonamalle	8524	4972	5293	106	8472	4942	4963	100
26	Pudukkottai	12818	7477	7704	103	12709	7414	6798	92
27	Ramnad	9559	5576	5909	106	9989	5827	5097	87
28	Ranipet	15183	8857	9068	102	14933	8711	8778	101
29	Salem	32498	18957	19402	102	32498	18957	18632	98
30	Sivagangai	16480	9613	10360	108	16296	9506	9388	99
31	Sivakasi	14160	8260	8962	108	14160	8260	8493	103
32	Tenkasi	18000	10500	10995	105	18000	10500	10812	103
33	Thanjavur	29148	17003	17107	101	29838	17406	15199	87
34	The Nilgiris	7371	4300	4448	103	7286	4250	3901	92
35	Theni	15490	9036	9101	101	15150	8838	8553	97
36	Thirupattur	17995	10497	10978	105	17995	10497	10484	100
37	Tiruchirapalli	35226	20549	20933	102	34544	20151	18853	94
38	Tirunelveli	20245	11810	12182	103	20145	11751	10544	90
39	Tirupur	28815	16809	17676	105	28767	16781	16284	97
40	Tiruvallur	24599	14349	15816	110	24224	14131	13479	95
41	Tiruvannamalai	21019	12261	13053	106	21019	12261	11233	92
42	Tiruvarur	16347	9536	9269	97	15130	8826	7725	88
43	Tuticorin	13205	7703	8033	104	13168	7681	7576	99
44	Vellore	20283	11832	12000	101	20545	11985	11097	93
45	Villupuram	24860	14502	16440	113	24891	14520	13969	96
46	Virudhunagar	7965	4646	4948	107	7965	4646	4550	98
	TOTAL	916917	534870	559573	105	913668	532976	512464	96

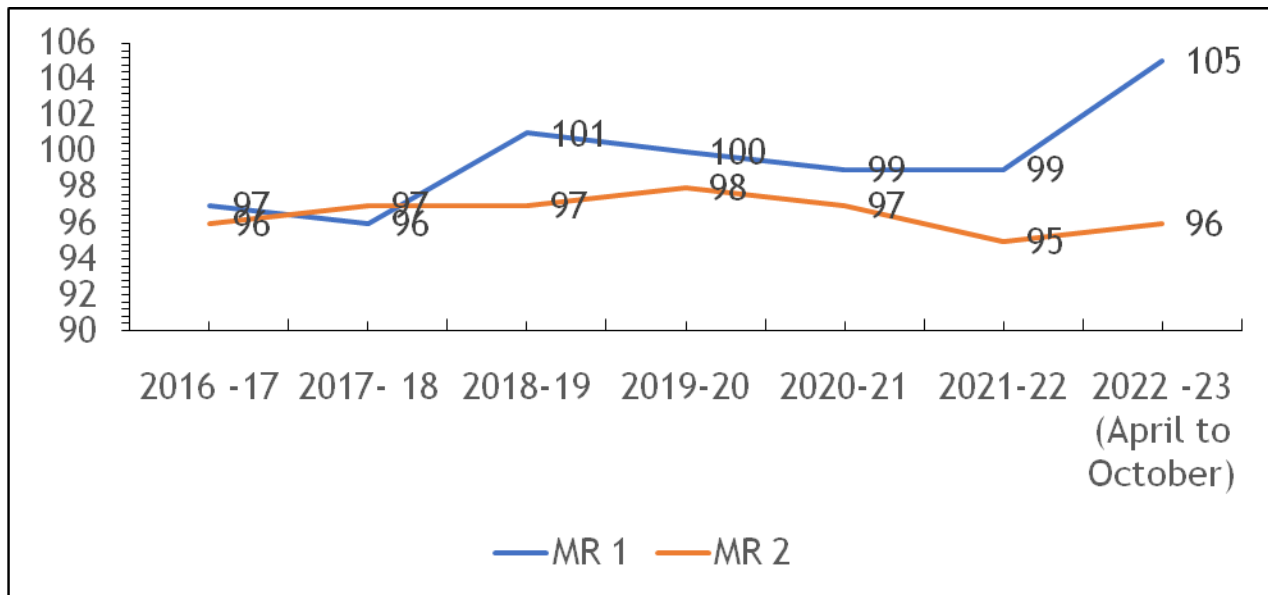
PLAN TOWARDS STRATEGIC OBJECTIVE:

STRENGTHEN IMMUNIZATION COVERAGE

OBJECTIVE : 1

ACHIEVE AND MAINTAIN HIGH POPULATION IMMUNITY WITH AT-LEAST 95% VACCINATION COVERAGE OF TWO DOSES OF MEASLES AND RUBELLA CONTAINING VACCINE IN EVERY DISTRICT

MR - 1 and MR - 2 coverage of Tamil Nadu:



District wise NMNR discard rate for the year 2022 is detailed below:

S.No.	District	Incidence of measles cases per million total population	Incidence of rubella cases per million total population	Discarded (non-measles non-rubella) incidence per 1,00,000 total population
1	Myladuthurai	0	0	0
2	Pudukottai	0.66	0	0.07
3	Tirupathur	0	0	0.09
4	Tiruvannamalai	0	0.43	0.17
5	Ranipet	0	0	0.18
6	Chengalpattu	0	0	0.33

7	Thanjavur	0	0	0.49
8	Thiruvallur	0	0	0.54
9	Chennai	0.46	0.15	0.59
10	Kanyakumari	0	0	.62
11	Cuddalore	0.41	0.41	0.74
12	Madurai	1.05	0.35	0.74
13	Thiruvarur	0	0	0.76
14	Virudhunagar	1.1	0.55	0.77
15	Kancheepuram	1.17	0	.82
16	Tenkasi	1.5	0	0.9
17	Tiruchirappalli	10.18	0.39	0.9
18	Vellore	1.37	0	1.03
19	Kallakurichi	1.54	0.77	1.15
20	Tuticorin	2.44	0.61	1.16
21	Theni	0	0	1.2
22	Villupuram	1.04	0	1.25
23	Tirunelveli	0.64	0	1.87
24	Erode	1.42	0.47	1.89
25	Perambalur	0	0	1.9
26	Nagapattinam	1.53	0	1.99
27	Ramanathapuram	1.58	0	2.21
28	Coimbatore	1.53	0	2.55
29	Sivaganga	1.6	0	2.63
30	Salem	0	0	2.76
31	Tiruppur	0	0	2.8
32	Dindigul	0	0	2.97
33	Namakkal	0	0.62	3.21
34	Karur	1	1	3.51
35	Ariyalur	1.42	2.84	3.55
36	Krishnagiri	1.14	0	3.76
37	Nilgiris	0	0	4.19
38	Dharmapuri	0	0.71	4.91
	State Total	0.99	0.21	1.49

All Deputy Director of Health Services were been instructed to identify and review the blocks with less than 95% coverage for 2 doses of MR and silent blocks in reporting MR Surveillance cases and also blocks having NMNR discard rate less than 2 per 1 lakh population so as to move towards elimination process.

Further, all Deputy Director of Health Services were also been instructed to adhere the below mentioned guidelines towards the elimination process.

A. Immunization:

1. To prioritize 95% coverage with 2 doses of MR at all Health Unit Districts.(HUDs)
2. Blocks with high proportion of zero-dose children (identified through surveillance or concurrent monitoring data) should be prioritized for RI intensification as well as Supplementary Immunization Activities (SIAs) where there is significant build-up of susceptible cohort
3. To utilize IMI and other special immunization drives to close Immunity gaps between MR-1 and MR-2.
 - a) MR may be given up to 5 years of age irrespective of previous vaccination status during such campaigns ***(instructions from this office will follow later)***
 - b) Selection of blocks/ areas for IMI should continue to include blocks/ areas with MR immunity gaps, as identified through district-level immunity profiles, outbreaks, and disease incidence
4. Timeliness of completion of two doses of MRCV should be tracked and monitored by the programme
5. Vaccine card retention should be promoted

B.ROADMAP TO MEASLES AND RUBELLA ELIMINATION:

With only 13 months to the target date of December 2023 for elimination of Measles and rubella, each HUD should set goals of progressing towards MR elimination by following the above recommendations.

- a) To ensure at least 95% MR-2 coverage by age 2 year or at the latest age 5 years
- b) To ensure the Non-Measles Non-Rubella (NMNR) discard rate should be ≥ 2 per 1,00,000 population in their respective Health Unit Districts

- c) To orient the concerned staff about the elimination of MR by 31st December 2023 and conduct BMOs / MOs meeting frequently with block wise analysis of MR-1 and MR-2 coverage and advise them to improve to 95% coverage to avoid the occurrence of MR Cases
- d) To orient them on control measures to be taken immediately after the occurrence of suspected MR cases if any in their area
- e) To instruct epidemiologists to involve in the laboratory procedures of sample collection and sending to appropriate labs timely and regularly

Baseline assessment and Categorization of districts has been done into three (High risk, Medium Risk and Low risk) using the following parameters

- **MCV1 Coverage (NFHS5)**
- **Building up of susceptible cohort**
- **Measles Incidence**
- Using MCV 1 coverage data from NFHS-5 survey, the number of children who had missed the MCV 1 were calculated
- Since the NFHS-5 data is from 2019-2021 and the last MR campaign was conducted 5 years ago, susceptible cohort of children who would have missed the MR vaccine in the age group of 9 months to 5 years was calculated.
- The districts were then categorized as per the following:
- **Low Risk (LR) District:** MCV 1 coverage in NFHS-5 $\geq 95\%$
- **Medium Risk (MR) District:** MCV 1 coverage in NFHS-5 between 80 to 95% and with <40,000 susceptible cohort
- **High Risk (HR) District:** MCV1 coverage in NFHS-5 $\leq 80\%$ or MCV1 Coverage in NFHS-5 between 80 to 95% and with >40,000 susceptible cohort
- **Very High-Risk District:** Large and continuous outbreak affected Districts (will be Identified at National Level based on size and repeated occurrence of confirmed outbreaks in particular area within specified time). These districts will be prioritized for program implementation.

The following set of activities will remain common in all three categories of districts:

1. Orientation of all District and Block level officials on Measles-Rubella Elimination target along with various activities planned to achieve it with clear timelines.
2. Inclusion of MRCV1 and MRCV2 block level coverages in the District Task Force Meeting on Immunization.
3. Re-activate District / Sub- district Task Force Meetings, on the lines of Pulse Polio Activity to review the implementation of MR elimination activities.
4. Special Immunization Activity in areas where outbreak of Measles/Rubella is reported.
5. Revalidate and reprioritize the existing high-risk areas (HRAs) by collecting information on potential risks. Include areas with low coverage due to geographic, demographic, and other operational challenges
6. Promote vaccination history checks at entry to day cares/preschools/kindergartens and encourage requirement for vaccination for those who missed the routine dose of MRCV1& 2
7. District Task Force to design how to get private sector vaccination data with beneficiary list and to use the same for tallying actual coverage. (Note private sector may be giving MMR, but that qualifies for MRCV)
8. Supportive supervision mechanism in the form of a quarterly cross district supervision of the MR elimination activities in the state/UT

The remaining differential set of activities in each category of districts is summarized as follows:

A. Category 1: Low Risk (LR)

Districts in this category need to focus on sustaining the high coverage through:

1. Use of Concurrent monitoring/Supportive supervision data on a monthly/bimonthly basis to identify pockets of low coverage of MRCV1 and MRCV2 and undertake corrective action.

2. Data Quality Assessment at the point of generation for HMIS, RCH portal etc., and implementation of action plan to address any gaps identified through this assessment.
3. Quarterly Reviews (DTFI/BTF/Urban Task Force) at highest level, with monthly reviews by program officials.
4. Identifying pockets of immunity gaps including areas with sub-optimal MCV1 coverage at sub-district level

There may be further stratification of activities in low-risk areas to expedite “measles and/or rubella free” status. Eg.,

- In LR districts that have not reported measles/rubella for more than 12 months with high NMNR and with coverage are more than 95% for MCV1 and MCV 2 based on HMIS, need to appreciate these districts for the work, document good practices, ensure a sustainability plan is in place.
- In LR districts that have not reported measles/rubella for more than 12 months with high NMNR and which coverage are less than 95% for MCV1 and MCV 2 based on HMIS, need to intensify RI activities and conduct selective vaccination activities with target till 5yrs of age.
- In LR districts that have not reported measles/rubella for more than 12 months with low NMNR need to intensify surveillance activities that include review of reporting sites, orienting private and nonformal sectors, increasing number of community informants etc.

B. Category 2: Medium Risk

1. The head-count survey activity to be ensured and utilized to assess MRCV1 and MRCV2 coverage of children up to 5 years of age.
2. Over the next two months, such children who have missed either one or both the MRCV doses should be identified and mobilized to receive the missed doses (In RI session / additional session)

3. Upon completion of Catch-up activity for above-mentioned missed children, rapid survey (following WHO cluster methodology/LLQAS/MICS) to be conducted to get the status of vaccination coverage in the district.
4. Use of concurrent monitoring data to identify areas of immunity gaps, pockets of vaccine hesitancy: Use of qualitative feedback from district & block level officials with use of tailored approaches to address these on sub-district/village level of implementation.
5. DTFI, BLTF, Urban task force to focus on coverage in known high risk areas likes polio HRAs (revisited), border areas, consistent low coverage areas, migratory pockets, hard to reach areas, peri urban areas etc.
6. Monthly Reviews (DTFI/BTF/Urban Task Force) at highest level

C. Category 3: High Risk

1. MR Catch-up campaign activities will be prioritized based on outbreak (Very High-Risk Districts), measles incidence and vaccine availability
2. In areas with < 80% MCV1 coverage based on NFHS 5, MR Catch-up campaign covering all children till 5 years of age will be conducted. One additional dose of MR vaccine will be given (Phase 1- Decision at National Level)
3. In areas with 80-95 % MCV1 coverage based on NFHS 5 with >40,000 missed children, MR Catch-up campaign covering all children till 5 yrs of age will be conducted. One additional dose of MR vaccine will be given (Phase 2- Decision at National Level)
4. In remaining HR Districts, head-count survey activity to be utilized to assess MRCV1 and MRCV2 coverage of children up to 5 years of age. Over the next two months, such children who have missed either one or both the MRCV doses should be mobilized to receive the missed doses (In RI session / additional session)

5. Based on situation analysis, DIO along with developmental partners under the guidance of task forces, will develop District RI improvement plan to overcome the identified operational gaps. This Plan will be implemented covering all aspects like Human Resource & their capacity, Micro planning, AVD route planning, Communication Plan & IPC activities, reported data and its decentralized analysis, Monitoring and supportive supervision, efficient Fund utilization and disbursement, Vaccine Stock Availability.
6. Strengthen concurrent monitoring data to identify areas of immunity gaps, pockets of vaccine hesitancy: Use of qualitative feedback from district & block level officials with use of tailored approaches to address these on sub-district/village level of implementation
7. Fortnightly reviews (DTFI, BLTF, Urban Task force) in these districts by highest level.
8. Upon completion of 6 months of implementation of District RI Improvement Plan, rapid survey (following WHO cluster methodology/LLQAS/MICS) to be conducted to get the status of vaccination coverage in the district.

STRENGTHEN DISEASE SURVEILLANCE

OBJECTIVE 2:

SUSTAIN A SENSITIVE AND TIMELY CASE-BASED FEVER AND RASH AND CONGENITAL RUBELLA SYNDROME (CRS) SURVEILLANCE

Cardinal indicators for Monitoring Surveillance

I. Non Measles Non Rubella Rate (NMNR) Discard rate:

As a proxy for the sensitivity of surveillance

$$\frac{\text{Total number of lab discarded cases + epidemiologically linked negative cases}}{\text{Total Population of the geographical area}} \times 100000$$

II. Measles and Rubella Incidence

- Incidence of measles: The number of measles cases per million population

$$\frac{\text{Number of measles cases (confirmed + epi-linked + clinically compatible) for 12-month period}}{\text{Population in which cases found}} \times 1000000$$

- Incidence of rubella: The number of rubella cases per million population

$$\frac{\text{Number of rubella cases (confirmed + epi-linked) for 12-month period}}{\text{Population in which cases found}} \times 1000000$$

Target-

- Non Measles Non Rubella (NMNR) Discard rate ≥ 2 /100000 population
- Incidence of Measles and Rubella : Zero/ 1 million population

I. Action Plan to track and strengthen surveillance at the State level:

- Accountability/ sustainability mechanism o Ensure accountability mechanism of State Task Force (STF), District Task Force for (DTF), Block Task Force (BTF) and Urban/City Task Force meetings review surveillance as per the timeline mentioned

in 1st objective, and provide strategic directions to focus on areas needing attention, thus creating accountability mechanism.

- Communication to districts about the importance of MR elimination and accelerate activities
- Prioritization o Continuously revalidate and reprioritize the existing high-risk areas (HRAs) by collecting information on potential risks. Include districts and blocks with >5% children in the age group of 9 months to 5 years who have missed any MRCV dose due to geographic, demographic, and other operational challenges in the list of High-risk areas.
 - Similar to risk prioritization done at national level conduct risk prioritization of districts based on data triangulation (MR immunity profiles, surveillance indicators, and measles and rubella epidemiology, including outbreaks).
 - Using risk prioritization, identify and map areas at high risk for MR outbreaks and intensity RI in these areas
 - Focus on district and blocks where >5% children in the age group of 9 months to 5 yrs of age have not received any dose of MR vaccine or have missed second dose
 - Focus on low hanging fruits to build momentum viz. districts and blocks with no measles and rubella transmission for more than 12 months in the presence of well performing surveillance system (NMNR discard rate ≥ 2 per 100,000)
- Enhancing case detection and investigation to Ensure the private health sector and professional societies (IM /I P) on India's MR elimination goal and strategy and sensitize them to report suspect cases.
 - Expansion of Reporting Network
- The DDHS and SMO should regularly review the existing list of health facilities in the reporting network

- Identify additional health facilities which have reported cases, or have a potential to report cases but are not part of the existing network, and those that have missed reporting cases and are not part of the network.
- Information can be gathered from
 - Analysis of the MR-Case Investigation Forms of the investigated cases • The health facility contact analysis (HFCA)
 - Local sources such as health workers, professional networks, and from local licensing authorities.
 - All government facilities should be included in the reporting network for MR surveillance.
- Ensure geographical representation of reporting site. Each block, urban ward should have at least one functional Reporting Unit /Informer Unit, and there must be adequate representation in sparsely populated areas too.
- Ensure cardinal surveillance indicators (NMNR Discard rate, case investigation within 48 hrs, Adequate sample collection, Sample shipment to laboratory within 5 days of collection, timeliness of laboratory results) are available and health workers/managers are oriented
- Data for action
 - o Conduct monthly analysis of the epidemiology of measles and rubella cases and outbreaks to monitor progress towards MR elimination at district levels.
 - o Establish an electronic Fever-Rash reporting system to District Immunization Officer (DDHS), using the e portal / mobile app developed

II. Action Plan to track and strengthen surveillance at District level:

- Accountability/sustainability mechanism
 - o Ensure accountability mechanism of District Task Force for (DTF), Block Task Force (BTF) and Urban/City Task Force meetings are conducted for reviewing surveillance as mentioned in the 1st Objective with respect to the priority level of the district and provide strategic directions to focus on areas needing attention.

- Ensure District Weekly Review (DWR) meeting involving District immunization Officer, District Surveillance Officer and Surveillance Medical Officer is conducted to review the surveillance reporting from IDSP and WHO-NPSP along with tracking and updating on cases/outbreaks every Tuesday. The meeting should also be used as opportunity to track NMNR discard rates at block level.
- Prioritization o Revalidate and reprioritize the existing high-risk areas (HRAs) by collecting information on potential risks including areas of vaccine hesitancy. Include districts and blocks with >5% children in the age group of 9months to 5 years who have missed any MRCV dose due to geographic, demographic, and other operational challenges.
 - Using risk prioritization, identify and map areas at high risk for MR outbreaks and intensity surveillance in these areas
 - Focus on low hanging fruit to build momentum viz. blocks with no measles transmission for more than 12 months in the presence of well performing surveillance system (NMNR discard rate ≥ 2 per 100,000 population)
- Ensure cardinal surveillance indicators (NMNR Discard rate, case investigation within 48 hrs, Adequate sample collection, Sample shipment to laboratory within 5 days of collection, timeliness of laboratory results) are available and health workers/managers are oriented
- Enhancing case detection and investigation o Ensure case investigation within 48 hrs of notification of suspected fever and rash case
 - Enhance proportion of lab confirmed measles and rubella cases by collecting samples from suspected cases of fever and rash, improving the quality of specimen collection and shipping the samples to WHO accredited lab under maintenance of appropriate cold chain. (Sample collection videos shared as attachment)

- Regularly analyze and expand surveillance reporting networks and re-prioritize existing sites. ○ Orient/re-orient all reporting sites for reporting suspect fever and rash cases for all age groups.
- Ensure the private health sector and professional societies (IM /I P) on India's MR elimination goal and strategy and sensitize them to report fever and rash suspect cases.
- Sensitize frontline workers (ANMs/ASHAs/AWWs) by providing standardized information on the early detection and reporting of fever and rash suspect cases.
- Ensure feedback mechanism on reported fever and rash cases to source of notification, parents etc.
- Appreciation letters/certificate given to all concerned who have strived towards strengthening fever and rash surveillance.
- Strengthen passive surveillance through engagement of faith healers, temple sites and any other private health facilities with potential to report suspected cases of fever and rash.
- Data for action ○ Conduct weekly analysis to monitor progress at block levels of the epidemiology of measles and rubella cases and outbreaks and cluster of MR cases in close community

STRENGTHEN OUTBREAK RESPONSE PROTOCOL

OBJECTIVE 3:

ENSURE ADEQUATE OUTBREAK PREPAREDNESS AND RESPOND RAPIDLY TO MEASLES AND RUBELLA OUTBREAKS.

Action Plan to track and strengthen outbreak preparedness and response at State and District levels

- Identifying high-risk populations
- Assessing the performance of the surveillance system (e.g. reaction time for notification, specimen collection) in the detection of virus circulation or potential importation.
- Using performance indicators as given in the Government of India's field Guide for Measles - Rubella Surveillance and Outbreak Investigation, to identify areas where it is necessary to strengthen surveillance.
- Ensure public health response is initiated following lab confirmation of measles or rubella outbreaks.
 - ✓ Increase active case searches in health facilities – all the health facilities in the outbreak/adjoining area should be sensitized and encouraged to report suspected fever and rash cases immediately. Try to determine if any suspected fever and rash case has been missed for reporting.
 - ✓ It is important to increase awareness of local measles/rubella transmission among the local stakeholders. This is to alert them to the outbreak and the possibility of having further cases, encourage them to immediately notify suspected fever and rash cases, remind them of adequate case management activities, including isolation and infection prevention and control (IPC) precautions maintaining the COVID-19 appropriate behavior.

- ✓ The Frontline workers to be motivated and re-sensitized on fever and rash case detection, its reporting and educate family members on importance of isolation of measles cases for at least four days/isolation of rubella cases for at least seven days following rash onset.
- ✓ While conducting active fever and rash case search in the community, local practitioners/temple sites/faith healers and any newly identified local influencers should be sensitized for reporting suspected fever and rash cases.
- ✓ Provide Vit A supplementation to those who have missed receiving it so far and use this opportunity to search for additional unreported fever and rash cases in the community.
- ✓ Early identification of complications and case management including treatment of measles complications and secondary infections.
- ✓ Analyze age wise vaccination history. Use the opportunity to further strengthen routine immunization and utilize Intensified Mission Indra dhanush activities to further focus on these areas.
- ✓ Frontline workers should be encouraged to prepare a list of children in 9 months to 5 years age group, due for MRCV1 and MRCV2 dose. All these due children should be vaccinated within one month.
- ✓ Explore the possibility of adding new reporting sites in the outbreak/adjoining area, based on the health seeking behavior of suspected fever and rash cases.
- ✓ Enhance passive surveillance by tracking the weekly reporting by RU/IDSP 'P' form within the affected block including zero reporting
- ✓ Any additional suspected fever and rash cases found during the above-mentioned activities and belonging to the existing outbreak area should be added to the MOB ID outbreak investigation form (OB003) till the end of outbreak (i.e. no further epidemiologically linked cases for one month from the date of onset of rash of the last case)

- Ensure that investigations of measles and rubella cases during large outbreak investigations are followed by a root-cause analysis of the outbreak.
- During outbreak response, ensure that RI and health system strengthening activities are implemented based on root-cause analysis to prevent future outbreaks. Intensify RI in the outbreak area.
- Ensure all states have the capacity to provide appropriate clinical management eg. Vit A supplementation

STRENGTHEN LABORATORY NETWORK

OBJECTIVE 4:

DEVELOPING AND MAINTAINING A PROFICIENT LABORATORY NETWORK

Strong surveillance along with a laboratory network is pivotal towards the success of disease elimination program. MR surveillance in Tamil Nadu has undergone significant program improvement efforts, switching from outbreak-based to case-based surveillance by 2019 and subsequently from case-based surveillance to fever and rash surveillance by 2021 across the State. Under fever and rash surveillance for each sporadic case samples are collected for both serology and virology and tested in WHO accredited MR laboratory network.

To meet the increased testing demand due to these surveillance strengthening activities, MR laboratory network was expanded in the state. This laboratory expansion led to further strengthening of MR surveillance due to wider geographic coverage, improvements in turn-around time for testing and reduced shipment costs.

The King Institute of Preventive Medicine (KIPM), Chennai and ICMR-Virus Research and Diagnostic Laboratories (VRDLs), Government Mohan Kumaramangalam Medical College, Salem are the designated laboratories for MR Surveillance in the state. In the new surveillance approach, health workers collect serum (within 28 days of rash onset) and throat or nasopharyngeal swab or urine samples (within 7 days of rash onset) from individuals with suspected measles for laboratory confirmation and virus genotyping. Measles and rubella case confirmation is based on confirming suspected cases using WHO standardized serology and molecular assays. Serum samples are tested for IgM antibodies using ELISA and simultaneously urine/throat swab/nasopharyngeal swab are tested by WHO standardized conventional RT-PCR.

DISTRICT AND BLOCK/URBAN TASK FORCE FOR MR ELIMINATION:

The task forces to vigorously track progress towards achieving MR elimination using the road map mentioned above.

Desired Benchmarks:

- Planned vs held number of STF /DTF/BTF/ Urban or City Task force meeting with discussion on MR Elimination
- Achieving and sustaining 95% coverage with two doses of MRCV at District levels.
- Ensure that all children receive MRCV2 by 24 months of age and that missed doses are provided up to 5 years of age, with two doses given 4 weeks apart o Left out and drop out for MRCV to be reduced to zero
- Achieving and sustaining Non-Measles and Non- Rubella (NMNR) Discard rate of $\geq 2/1,00,000$ population o Tracking incidence of Measles and Rubella
- Maintaining key surveillance performance indicators like case investigation within 48 hrs of notification, adequate sample collection, sample shipment to WHO accredited laboratory within 5 days of collection
- Silent districts/ blocks (without an investigated fever -rash case in a 12-month period) to be reduced to zero
- Initiating immediate public health response activities following lab confirmed measles/ rubella outbreak including root cause analysis
- Continuous assessment of population immunity gaps including in high-risk areas for measles and rubella transmission, with action taken to mitigate the risk of outbreaks.
- Coordination with Education department / Women & Child Welfare department / professional bodies/ Civil Society Organization on MR Elimination effort.

Conducting Special MR Campaign:

At present Measles outbreak reported in Mumbai and Kerala during 4th week of November 2022 and there is a possibility for MR outbreak in Tamil Nadu also.

Hence, it is proposed to conduct Special MR campaign similar to Intensified Mission Indra Dhanush in all Urban areas of the State for 6 days from 12.12.2022 (Monday) to 17.12.2022 (Saturday) including RI day (14.12.2022 Wednesday).

The following activities should be carried out for conducting Special MR Campaign similar to IMI.

A. Updation of data in PICME

- As per PICME, MR-1 coverage is 85% and MR-2 coverage is 59% whereas MR-1 coverage is 104% and MR-2 coverage is 96% in HMIS.
- Hence, all Deputy Director of Health Services are instructed to update the PICME portal regarding the coverage of MR-1 & MR-2 vaccination.

B. MR Campaign

- All Deputy Director of Health Services are instructed to conduct Head Count Survey in the Urban Areas under their jurisdiction from 05.12.2022 to 09.12.2022.
- Based on the Head Count Campaign should be conducted as per the above mentioned date.
- All Deputy Director of Health Services are instructed to conduct the MR Campaign in Urban areas with the available UHN and to utilize the fund allotted for hiring of alternative vaccinator in vacant places of UHN in Urban areas for carrying out MR Campaign and ensure that MR Campaign being conducted in all Urban HSCs.

The District level and Block level activities to be carried out in the concerned HUD is detailed below:

District Level:

S.No.	Activities	Dates
1	District Orientation Workshop for BMO/DMCHO/MO (1 day)	On or before 10.12.2022
2	District Task Force meeting for Immunisation – I	On or before 10.12.2022
3	Urban Task Force meeting for Immunisation – I	On or before 10.12.2022
4	Microplan Compilation & Finalisation meeting	10.12.2022
5	Microplan submission to State	10.12.2022
6	Furnishing of day wise report to Head Quarters	Camps days

Block Level:

S.No.	Activities	Dates
1	Block Task Force meeting	On or before 10.12.2022
2	Orientation of CHN, SHN and VHNs	03.12.2022
3	Head Count Survey & Due – listing and validation	10.12.2022
4	Sub-Center wise microplan preparation by VHN	10.12.2022
5	Discussion & Finalisation of microplans at block/urban level	10.12.2022
6	Submission of microplan to District	10.12.2022
7	Microplan Distribution to VHN at block/urban level	10.12.2022

Hence, all the Deputy Director of Health Services have been informed to instruct the concerned officials to follow the above Timeline of activities for implementation of Special MR Campaign similar to IMI in a successful manner.

Further, instructed to take necessary steps to give wide publicity through Local Media at free of cost requesting the public to take MR Vaccination for the left out / drop out children.

The above activity of conducting Special MR Campaign similar to IMI will not only benefit the left out / drop out children but also lead a way towards the elimination of Measles and Rubella from the State before December 2023.