Tamil Nadu Monitoring Report

National Health Systems Resource Center

2013

This report is based on health providers, beneficiary interviews and HMIS data analysis and triangulation of Madurai district and Tamil Nadu state. The monitoring visit include all levels of health facilities in Madurai district. One needs to be cautious in interpretation of HMIS data, the state and districts may have good service delivery but there might be problem in reporting data and reflecting in national HMIS portal.

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Executive Summary

State and district profile

- Tamil Nadu is seventh most populated state in the country with 76 revenue divisions, 215 taluks and 32 districts. Tamil Nadu population constitute 5.96% of total India's population.
- Madurai is one of the 32 districts located at South of the state with a population of 3 million, which is 4.21% of the state population.
- The district literacy rate is 83.45%, which is 3.36% higher in comparison with state literacy rate.
- Madurai district density of population is 819/km^2, which is higher by 264 persons/km^2 in comparison with TN State, which is 555 persons/km^2.

Key health and service delivery indicators

- The key health indicators of Tamil Nadu reflects excellent performance in comparison with national average.
- The MMR of Tamil Nadu and Madurai reported 97 and 113 maternal deaths per 100,000 live births from any cause related to or aggravated by pregnancy.
- Tamil Nadu IMR is 21 per 1000 live births, which is 22 points lower than national average. State and district have already achieved the MDG goal of IMR
- TN reported 27 U5MR as per SRS, which is 50% above the expected level of achievement as per MDG goal by 2015.
- Services delivery indicators like ANC, PNC, institutional deliveries, TFR and unmet needs for family planning indicates Tamil Nadu performance above national average.

Health infrastructure

- The state of the health infrastructure shows highest level of coverage, which is one of the essential factor for improving public health outcomes in the state.
- In terms of required facilities, there is a deficit of 16%, 6% and 19% of health sub-centers, PHC's, FRU/CHC hospitals in the state.
- In Madurai district, on an average every block has 24 health sub-centers, 116 Aanganwadi Centers, 36 Village Health, Water and Sanitation Committees, 885 women self-help groups and 2 NGOs.
- Excluding HSC, state has 48% of health facilities operationalized as delivery point.
- As per the HMIS data, state catered 87% of total expected deliveries and remaining 13% are unreported deliveries from April to July 2013.

Human Resource for Health

- It is appreciable that except specialists, there is no shortfall of HR (ANMs, SNs, LTs and MOs) at the delivery points.
- Madurai district has adequate HR in all levels of health facilities, out of 1982 sanctioned human resources, 88.2% of them are available in the district.

Ante-natal Care

- Identifying and line listing of high risk pregnant women is one of the concerns in the state.
- NCD project of Tamil Nadu best positioned to provide comprehensive Gestational Diabetes Miletus (GDM) package to reduce fetal complications during pregnancy.

- ANC against reported in first trimester recorded 88% in the state and district level and both, state and district indicators shows good performance of ANC and PNC services.
- Severe anemia treated cases at state and district stood at 2.8% and 3.4% during the period, which might be the result of iron sucrose injection provided to Iron Deficiency Anemia (IDA) cases in the state.

Institutional Deliveries

- Out of expected deliveries, 87% and 86% of institutional deliveries reported from state and district. Of which, PHC's contributes 61% and UHP's alone contribute 39% in the district.
- 6.5% C section deliveries reported against institutional deliveries in Madurai, which is 16.3% lower than the state average (22.8%). The district needs to review the performance of C Section deliveries.
- State and district reported 57% and 53% PNC visit against total deliveries during the period.
- There is scope to improve PNC visit within 14 days after deliveries, which are essential to prevent complications for both mother and new born baby.
- PHC alone holds 50% of complications in comparison with CHC in the state, which indicates PHCs are best positioned to handle pregnancy complications as well C sections.

Maternal Deaths

- Madurai contributes around 11% of total 184 maternal deaths in the state from April to July 2013. Total 20 maternal deaths reported and reviewed at facility level during the period.
- Of total 184 reported MDs in the state, 72% of cases fall under other causes that includes causes not known. Second major cause of death is severe hypertension followed by bleeding and abortion.
- Facility based MDR committees are constituted in the district but yet to constitute community level MDR committees.

Janani-Shishu Suraksha Karyakram

- It is observed that drug, diagnostics and diet are freely available in all health facilities and no beneficiaries reported spending money on these services.
- PHCs are tie-up with local hotel or usually the health worker of the facility provide three time diet for ANC/PNC mothers and the cost per head is Rs.80 per day.
- Only 15% (n=20) of the beneficiaries availed the ambulance service to reach the health facility and remaining 17 beneficiaries either used their own vehicle (Auto) or used local bus.
- The cost for transportation range from Rs. 20 (bus) to Rs. 250 (auto/car) depends on distance and timing in Madurai district. Transportation is single most contributor for out of pocket expenditure in the district and state.
- For drop-back many of the beneficiaries intend to return by government vehicle but due to unavailability of vehicle almost all would be utilizing their own vehicle or public transportation.
- Entitlement of referral transport under JSSK is available across PHCs but yet to functional in secondary hospitals like CHCs, SDH/DH even though funds are available with these institutions.

Janani-Suraksha Yojana (JSY)

- Number of women registered under JSY from April to July has increased by 36% in comparison with last year same period at the state level.
- Percentage of JSY registration to total ANC registration has increased by 6.2% from 10.4% to 16.6% in comparison with last year's performance.
- Incentives paid for home deliveries and institutional deliveries also drastically reduced by 59% and 20% at state level. One needs to understand the reasons for low registration of ANC mothers for JSY in the state.
- One reason could be state sponsored maternity benefit scheme, which is priority for state and also provides higher incentive in comparison with central scheme.

Child Health

- The Madurai district has 52 NBCC's, 3 NBSUs and 2 SNCUs. These NBSUs and SNCUs are located in medical college, district hospital and sub-district hospital with 20, 10 and 16 bed capacity in the district.
- Neonatal care and referral services strengthened in the state by establishing Neonatal Intensive Care Unit (NICU) in 15 high IMR identified blocks of the state.
- Still birth constitute 1% of total live births recorded (16,442) from April 2012 to July 2013 in Madurai district. The male infant deaths are slightly higher (0.88%) than female infant deaths (0.72%) in Madurai from April to September 2012.
- Around 69% of deaths occurred in government hospitals and remaining deaths occurred at home (17.66%), private hospitals (7.79%) and 5% occurred during transit. 53% of deaths reported within one week of birth and remaining 47% deaths occurred within 52 weeks of birth.
- Major cause of infant deaths include birth asphyxia 41%, congenital anomalies 18% and congenital heart diseases 12% in Madurai district during 2012.

Immunization

- The full immunization coverage of district is 83%, which is 4% lower than state average.
- The TN state shows good performance of planned versus held immunization sessions which correlates well with immunization achieved in the district.

Family Planning

- 11% of the total unmet needs were catered in the district, which is 1% higher than the state average in meeting family planning needs.
- State outperformed in providing IUDs against total reported FP users, which is 44% from April to July 2013.
- State performance of postpartum sterilization out of total female sterilization is higher by 4% in comparison with district.
- Overall sterilization against total reported family planning is higher by 9% in the district in comparison with state average.

School Health Programmes

- Madurai district covers 1188 government and 318 aided schools covering 4.05 lakhs students from 1st grade to 12th grade and every block has 2 to 7 dedicated SHP teams to screen the school children
- The district also conduct congenital deformity survey, which is a state initiative and this survey done by village health nurse within her catchment area.
- During the financial year up to May 2013, 187 congenital deformities identified, which include 63% male and 37% female children.
- Around 50% of the disorders are related to ear, eye, head and chest and referred to health center for treatment
- WIFS programme of Madurai district covers around 1.38 lakh girls and line listing of adolescent girls are available will all HSCs.
- Total 4.14 lakhs napkins distributed, which include 1.98 lakh through Village Health Nurse (VHN) and 2.16 lakh through schools from Jan to July 2013.

Quality in health services

- None of the PHC have proper protocols for disposal of bio-medical waste and these institutions are still dependent on deep pits, which are dug in the hospital premises, where they dump bio-medical waste including placenta.
- Secondary care facilities have tied up with third party agency to dispose bio-waste and CHC meet the expenditure from RKS or AMC grant.
- Needles and syringes are properly mutilated and disinfected before putting in waste bin.
- District headquarter hospital has dedicated casualty division to attend the emergency cases. There is increasing trend in number of emergency case in urban areas of the district.

Mobile Medical Units and Referral Transport

- The district has 13 MMU in 13 blocks and on an average each MMU covers 60 OPD load per camp. However, yet to start diagnostic services in mobile medical unit in the district.
- Madurai district has 15 Basic Life Support (BLS) ambulance and 1 Advance Life Support (ALS) ambulance that covers on average 1 lakh population per ambulance.
- The average response time per call was 30 minutes and on average 4.5 trips per day per ambulance recorded in the district.
- 20 Referral Transport (RT) vehicles available in the district and average number of emergencies handled per month per referral transport is 492 including pregnant women.

Integrated Disease Surveillance Project (IDSP)

- Around 78 units reporting P-form out of 83 units, and 49 L-form, which include private and other hospitals (ESI) in the district. Total 314 S-forms are reporting to the district surveillance officer (DSO).
- In comparison with previous three years, number of dengue cases increased by 79% in the district.

- From January to July 2013, Madurai district reported 614 typhoid, 29 malaria, 180 tuberculosis and 88 HIV positive cases.

Disease control programmes

RNTCP

- Madurai district registered 1647 TB cases from January to June 2013, out of which, 45% new smear positive and 18% each new smear negative and extra pulmonary cases.
- RNTCP programme suspected 358 MDR cases and referred 252 for diagnosis and confirmed 15 cases and referred for DOTS+ from Jan to June 2013.
- RNTCP in association with FIND (Foundation for Innovative New Diagnostics) established CBNAAT (Cartridge Based Nucleic Acid Amplification Testing) Project. The GeneXpert MTB/RIF is a cartridge based computerized diagnostic test that identifies both the presence of Mycobacterium TB in the sputum sample and drug resistance to Rifampicin.
- The GeneXpert center received 2306 sputum samples and achieved 98% testing in CBNAAT from January to July 2013.

NVBDCP

- The district has examined 92,042 blood smear and confirmed 29 cases, which is 0.03% positivity from January to July 2013. Out of 29 positive cases, 14% of them are Plasmodium falciparum (Pf) cases and remaining cases are Plasmodium Vivax (Pv).
- Madurai district recorded high number of Dengue cases, last calendar year (2012) the district reported 2364 dengue positive cases and this year 354 dengue positives reported from January to July.
- The district reported 78.5% increase number of dengue cases in comparison with last year for the same period.
- There are total five outbreak report (OBR) raised by district IDSP unit from January to July. The OBR based on dengue, chikungunya and typhoid in five different PHC catchment area of the district.

NPCB

- The Annual NPCB target for the district is 27,000 and on an average district achieved 80% to 97% cataract surgeries from 2005-06 to 2012-13.
- Around 94 camps approved in the district and 55% of them achieved in conducting the camps from April to July 2013.
- During these camps, 6776 screened for cataracts and 34% of them undergone for surgeries in partnered NGO institutions. During the same period, government Rajaji hospital conducted 786 surgeries.
- Total 497 eyes collected in the district that including government and NGOs and 66% of them utilized in the same period

NLEP

- Out of 13 blocks, one block Alanaganallur reported more than one (1) prevalence rate and 11.22 ANCDR (annual new case detection rate).
- During the year up to July 2013, the district has 121 cases registered under treatment of which 51 newly detected. The newly detected cases include 19 MB, 10 child case and four cases with deformity.
- Around 94 ASHAs are exclusively allotted for leprosy activities for high endemic blocks out of which 92 recruited.
- Four blocks are identified as high endemic blocks in the district and each of these block recruited 20 to 25 ASHA for leprosy activities.

Non Communicable Disease Project

- NCD project of Madurai district screened 79 thousands for hypertensive, 50 thousands for type-2 DM, 37 thousands for Carcinoma Cervix (CaCx) and 50 thousands for Carcinoma Breast (CaBr)
- The positive rate among the screened population was 19.8%, 12.2%, 4.6% and 1.5% for hypertension, diabetes mellitus, and carcinoma cervix and carcinoma breast from May to July 2013.
- However, when compare positivity of known with new diabetes, known diabetes are higher by 43% in comparison with new diabetes. On the contrary, new hypertensive cases are higher by 6% in comparison with known hypertensive cases.
- Madurai district started camp based screening called "Pengal Nala Thittam" a camp based screening for Clinical Breast Examination (CBE) and carcinoma cervix.
- Around 10,98,949 population enumerated and found 2,15,059 eligible population who are above 30 years. Out of 2.15 lakh eligible population, 20% of them attended the camps. Around 1988 via/vili test found abnormal and similarly 439 left CBE and 511 right CBE found abnormal during these camps.

Others

- On an average 742 OPD per 1000 population at state level and 630 OPD per 1000 population at district level reported from April to July 2013. 16 and 10 IPD per 1000 population recorded at state and district level.
- Of the 1.17 million IPD in the state, 7.1% underwent major operations with anesthesia and 1% underwent minor surgeries out of 53.54 million OPDs.
- The weakest aspect in the health programme of Tamil Nadu is data capturing and its utilization.

1. Introduction

The report is based on monitoring visit carried out in Madurai district of Tamil Nadu from 20th to 23rd August 2013. The monitoring visit include all levels of health facilities – Health Sub Centre (HSC), Additional Primary Health Centre (APHC), Primary Health Centre (PHC), Community Health Centre (CHC), SDH and District Hospital (DH). PHCs and CHC/SDH are catering to the health needs of the people. Details of visit provided in the below table.

Table 1 Description of the area and facilities visited in Madurai, Tamil Nadu

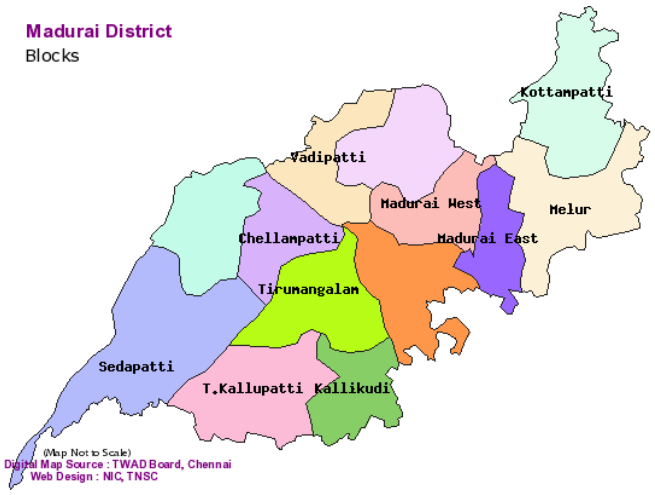
Block	Description	Facilities/Dept. visited
Madurai Corporation	Comprise of 100 wards, 19 UHP and 13 maternity centers which caters to 15.57 lakh population	DPH, Medical college hospital, SNCU, NICU, DTCO
Thiruppurankundram	Comprise of 7 PHCs, 38 HSC, 182 AWC which caters to 3.24 Lakh population	Thannakkan HSC, Thirunagar PHC
Madurai East	Comprise of 6 PHCs, 32 HSC, 141 AWC which caters to 1.96 lakh population	Sakkimanglam APHC, Kallandhari UPHC/CHC
Usilampatti	Comprise of 3 PHCs, 20 HSC, 129 AWC which caters to 97 thousand population	Usilampatti DH, Pudukottai-MMU camp village, DLO, DMO, DBCP

2. State and District Profile

Table 2 State and district profile

Tamil Nadu State and Mad**urai District Profile**		
State/District	**Tamil Nadu**	**Madurai**
State/Dist. HQ	Chennai	Madurai
No. of Blocks	401	13
No. of Panchayat's	12,620	431
Population (2011)	72,147,030	3,038,252
Literacy	80.09%	83.45%
Sex Ratio	996	990
Density of POP	555/km²	819/km²
State/District Boarder		
North	Andhra Pradesh	Dindigul
East	Bay of Bengal	Sivaganga
West	Karnataka	Theni
South	Kerala	Virudhunagar

Tamil Nadu is eleventh largest state by area and seventh most populated state in the country. State has 76 revenue divisions, 215 taluks and 32 districts. Tamil Nadu population constitute 5.96% of total India's population. The state has 401 blocks, and 12620 gram Panchayats. Madurai is one of the 32 districts located at South of the state with a population of 3 million, which is 4.21% of the state population. The district literacy rate is 83.45%, which is 3.36% higher in comparison with state literacy rate, 80.09%. Madurai density of population is 819/km², which is higher by 264 persons/km² in comparison with TN State, 555 persons/km².



3. Key health and service delivery indicators

The key health indicators of Tamil Nadu reflects excellent performance in comparison with national level. Tamil Nadu recorded 97 Maternal Mortality Ratio (MMR) per 100,000 live births, which is 115 points lower in comparison with national average, which is 212/100,000 live births. However, when compare Madurai district, 88 points lower than national average and 27 points higher than state average. The MMR of Tamil Nadu and Madurai reported 97 and 113 maternal deaths per 100,000 live births from any cause related to or aggravated by pregnancy.

Maternal health is one of the eight goals of Millennium Development Goals (MDG's) that targets to reduce MMR by three quarters (of 1990) by 2015. India has substantially reduced the MMR from 523 in 1990 to 212 in 2007-09. Despite the progress, India tends to fall short to achieve MDG maternal goal by 135 per 100,000 live births in 2015. However, Southern states like Tamil Nadu has already achieved success in arresting incidence, whereas northern states like Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan might fall behind the targets. The April 2013 edition of Lancet records appreciation for Tamil Nadu in its article "*Good health at low cost 25 years on: Lessons for the future of health systems strengthening*". Paper elucidates broadly four factors that led to change in health care system in the state. Firstly, the highest level of coverage by a network of 1614 PHCs and 8706 HSCs across the state. Secondly, well trained village health nurse based at HSC for preventive and promotive health care. Thirdly, reliable supply of essential drugs through Tamil Nadu Medical Service Corporation (TNMSC) and lastly, wide coverage of the immunization in the state.

IMR for the country declined by nine points between 2008 and 2011 with IMR at national level being 44 in 2010. However, the set IMR target of MDG is to reduce by 27 per 1000 by 2015. Tamil Nadu IMR is 21.2 per 1000 live births[1], which is 22 points lower than national average and 4.4 points lower than Madurai district. Tamil Nadu and Madurai have already achieved

[1] Monthly bulletin on family welfare performance in Tamilnadu, Directorate of family welfare, Chennai, June 2013

the MDG goal of IMR.

Table 3 Key health and service delivery indicators

Sl. No.	Health indicators	India	Tamil Nadu	Madurai*
1	MMR (per 100,000 live births) 2011	212 (SRS '07-09)	97	124
2	CBR (per 1000 population) 2011	21.8 (SRS 2011)	15.9	18.7
3	CDR (per 1000 population) 2011	7.1 (SRS 2011)	7.4	8.4
4	IMR (2011)	42 (SRS 2012)	21	25.6
5	Neo- natal Mortality Rate	33 (SRS 2010)	16	
6	Under Five Mortality Rate	59 (SRS 2010)	27	
7	**Antenatal Care** (HMIS ′12-13)			
a	ANC Check-up in first trimester		76.8%	87%
b	3 or more ANC Check-up	69% (HMIS '12-13)	95.6%	97%
8	**Postnatal Care** (HMIS ′12-13)			
a	Breastfed within 1 hour of birth		76.1%	67.7%
9	Instit. Deli. Against Esti. Deliveries	62%	94.0%	98%
	Total Fertility Rate	2.5 (SRS 2010)	1.7 (SRS 2010)	
10	Full Immunisation	82 (HMIS '11-12)	80	86
11	**Unmet Need for FP**	12.8 (DHS '05-06)	**18.1**	**11.8**
a	Spacing	6.2	5.4	4.1
b	Limiting	6.6	12.7	7.7

Source: SRS, *Provisional based on 2008 vital event survey, Madurai, TN

Under 5 Mortality Rate (U5MR) in India for the year 2010, stands at 59 and it varies from 66 in rural areas to 38 in urban areas. Given to reduce U5MR to 42 per thousand live births by 2015, India tends to short of 28.8% at the current rate of U5MR. However, Tamil Nadu reported 27 U5MR as per SRS, which is 50% above the expected level of achievement as per MDG goal by 2015.

Services delivery indicators like ANC, PNC, institutional deliveries, TFR and unmet needs for family planning indicates Tamil Nadu performance above national average. % of three ANC check-ups and institutional deliveries against estimated deliveries in Tamil Nadu is 26.6% and 32% higher than national average. Tamil Nadu state unmet need for FP is 18.1%, which is 5.3% higher than national unmet needs.

4. Health Infrastructure

Tamil Nadu has adequate health infrastructure as per population norms. In terms of required facilities, there is a deficit of 16%, 6% and 19% of health sub-centers, PHC's, FRU/CHC hospitals in the state. The state of the health infrastructure shows highest level of coverage, which is one of the essential factor for improving public health outcomes in the state. Similar picture reflects in Madurai district, in terms of required facilities, around 86% of all levels of health facilities available in the district. Only 14%, 16% and 8% of health sub-centers, PHC's and FRU/CHC short fall as against required facilities in the district.

Table 4 Health facility mapping – Tamil Nadu and Madurai

	Tamil Nadu			Madurai		
	Required	Existing	Short fall	Required	Existing	Short fall
District Hospital	31	31	0	1	1	0
FRU/CHC	385	310	75	13	12	1
PHC	1725	1614	111	61	51	10
HSC	10342	8706	1636	366	314	52

Source: TN state PIP 2013-14

Madurai district has 13 blocks with a population of 3.03 million. Block population range from minimum 71 thousands in kalligudi block to maximum 2 lakhs in Madurai West block. On average every block has 24 health sub-centers and each sub-center covers on an average five to six thousand population. The catchment area of PHCs covers minimum 30 thousands to maximum of 40 thousand in Madurai district.

Table 5 Block wise health facilities in Madurai, Tamil Nadu

S.No	Block	Population	PHCs	HSC	AWC	VHWSC	NGOs	SHGs
1	Madurai East	196066	6	32	120	36	4	1065
2	Madurai West	211344	4	24	143	41	3	1096
3	Alanganallur	104662	4	23	105	44	2	840
4	T.Vadipatti	120393	2	24	107	37	4	1042
5	Kottampatti	112104	4	28	116	27	2	764
6	Melur	131138	5	25	120	38	2	842
7	Thiruppran kundram	324090	7	38	182	46	5	1534
8	Kalligudi	71864	3	15	83	36	1	635
9	T.Kallupatti	85154	2	21	90	48	2	760
10	Thirumangalam	100747	3	20	125	38	3	665
11	Chellampatti	89212	4	21	104	29	2	783
12	Usilampatti	97452	3	20	109	18	2	485
13	Sedapatti	108924	4	23	113	36	2	996
	Total	**1753150**	**51**	**314**	**1517**	**474**	**34**	**11507**

Source: DPH Madurai; Excluding urban population and Urban Health Centers; VHWSC=Village Health, Water and Sanitation Committees; SHG=Self-Help Group; AWC=Aanganwadi Centre; NGO=Non-Governmental Organisation

On an average every block has 116 Aanganwadi Centers, 36 Village Health, Water and Sanitation Committees, 885 women self-help groups and 2 NGOs. These institutions are playing vital role in social mobilization and empowering local communities, which ensures in providing quality health care as per the local demand. There are total 10,347 (As per state maternal health indicators) health facilities available at different level in the state, of which 84% of them are HSC. 48% of the remaining 1641 health facilities are delivery points as per state maternal health indicator. These 48% health facilities supposed to cater to 4.20 lakhs expected pregnancies and 3.86 lakhs expected deliveries from April to July 2013 in the state. By this calculation, on an average every delivery point in the state need to cater 488 deliveries per month. However, as per the HMIS data, state catered 87% of total expected deliveries and remaining 13% are unreported deliveries from April to July 2013. The situation is different across different delivery points and mostly PHCs and above level facilities accommodate the needs of pregnant women.

The situation remains the same at district level, for example in Madurai district, out of 379 health facilities, 83% of them are HSC. 86% of remaining 65 health facilities in the district are delivery points. These delivery points supposed to cater 20,832 expected pregnancy and 19,181 expected deliveries during same period. The below table provides facility level institutions and delivery points.

Table 6 Delivery points – Tamil Nadu and Madurai

Health Facilities	Tamil Nadu		Madurai	
	State	Delivery Points	District	Delivery Points
HSC	8706	0	314	0
PHC	1227	559	51	42
CHC Non FRU	154	100	6	6
CHC/FRU	231	103	7	7
DH/DWH	29	29	1	1
Total	**10347**	**791**	**379**	**56**

Source: State and District PIP MH Annexure 2013-14,

5. Human Resources for Health

State has some gap in filling medical, nursing and paramedic staff in terms of sanctioned versus positioned at different levels of health facilities. The number of sanctioned posts is much less than the HR requirement of the State. For example, the requirement of ANM post is 10480 but the state has only 8706 sanctioned posts. Similarly 4316 sanctioned posts for staff nurse against 10112 required, 471 OBG posts against 599 required, 221 Paediatrician posts against 947 required and 230 Anaesthetist against 599 required posts in the state. It is appreciable that except specialists, there is no shortfall of HR (ANMs, SNs, LTs and MOs) at the delivery points.

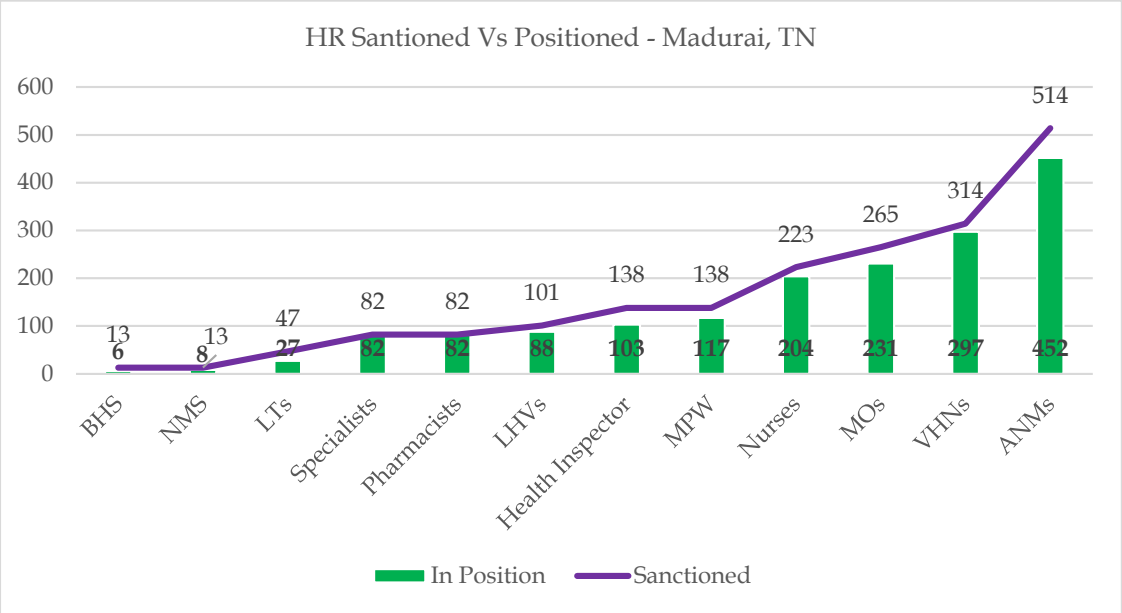
Table 7 Human resources status in Tamil Nadu

HR categories	Sanctioned Posts (R+C)	In position			Shortfall
		Regular	Contractual	Total	
ANM	8768	8706	0	8706	-62
SN	12130	4160	7341	11501	-629
LHV/PHN	2036	1808	0	1808	-228
LT	3355	1890	402	2292	-1063
Pharmacist	1645	1323	89	1412	-445
MO	6195	3441	1124	4565	-1630
AYUSH MO	1429	815	475	1290	-139
Specialist	958	761	0	761	-197

Source: State PIP 2013-14; R=Regular; C=Contractual

Madurai district has adequate HR in all levels of health facilities. There are around 1219 various medical, para-medical and public health personnel available across different health facilities. Out of 1982 sanctioned human resources, 88.2% of them are available in the district. Regarding medical officers, out of 265 sanctioned posts, 87% of them are in position.

Graph 1 Human resource status in Madurai, Tamil Nadu



Source: DPH, Madurai

6. Maternal Health

6.1 ANC and PNC

ANC registration against expected pregnancies in Madurai recorded below (2%) than state average and ANC against reported in first trimester recorded equally at state and district level (88%). Both, state and district indicators shows good performance of ANC and PNC services. Severe anemia treated cases at state and district stood at 2.8% and 3.4% during the period, which

might be the result of iron sucrose injection provided to Iron Deficiency Anemia (IDA) cases in the state. Hypertension cases against reported ANC in Madurai was lower by 3.1% in comparison with state average. Non-Communicable Disease (NCD) programme of the state may well intervene in identifying the cases and providing treatment for ANC hypertensive cases. Research indicates rising trend of Gestational Diabetes Miletus (GDM), high blood glucose levels during pregnancy, particularly in south India. NCD project of Tamil Nadu best positioned to provide comprehensive GDM package to reduce fetal complications during pregnancy.

Table 8 Selected maternal indicators of Tamil Nadu and Madurai from April to July 2013

Sl. No.	Key Indicators	April to July 2013	
		Tamil Nadu	Madurai
1	ANC Registration against Expected Pregnancies	90%	88%
2	ANC Registration in first trimester against Reported ANC registration	88%	88%
3	Severe anemia (Hb<7) treated against reported ANC registration	2.8%	3.4%
4	Hypertension in pregnancy- detected against ANC reported	7.1%	4.0%
5	Institutional Deliveries against Estimated Deliveries	87.4%	86.1%
6	Home deliveries(SBA& Non SBA) against estimated deliveries	0.1%	0.0%
7	PNC visits within 48 hours and 14 days against total deliveries	57%	53%
8	C Section deliveries against institutional deliveries	22.8%	6.5%

Source: HMIS

6.2 Institutional Deliveries

As shown in the table 8 above, institutional deliveries of the district is lower by 1.3% in comparison with state. 6.5% C section deliveries reported against institutional deliveries in Madurai, which is 16.3% lower than the state average (22.8%). The district needs to review the low performance of C Section deliveries. However, to improve the situation, the state has trained 58 medical officers in EmOC and 244 MOs in LSAS. 84% of total health facilities in the state and district are HSC, which are not delivery points. Remain 48% of 1641 and 87% of 109 health facilities are delivery points in the state and district. State and district needs to prioritize and strengthen additional PHCs to improve the number of institutional deliveries. There are total 270 blood banks and 211 blood storage units are licensed and functional in the state.

Table 9 Functional delivery points in public health facilities – Tamil Nadu and Madurai

Sl. No.	Health Facilities	Tamil Nadu	Madurai
1	Total No. of SCs/conducting >3 deliveries per month	8706/0	314/0
2	Total No. of 24X7 PHCs/conducting >10 deliveries per month	1227/559	51/42

3	Total No. of CHCs (Non FRU) conducting > 10 deliveries /month /C-section	154/100	6/6
4	Total No. of CHCs (FRU) conducting > 20 deliveries /month /C-section	231/103/24	13/07/0
5	Total No. of any other FRUs (excluding CHC-FRUs) SDH/conducting > 20 deliveries per month with C-section	127/70/99	0
6	Total No. of DH conducting > 50 deliveries /month with C-section	29/28/28	01/01/01
7	Total No. of Medical colleges conducting > 50 deliveries/month with C-section	18/18/18	01/01/01
8	No. of Blood bank licensed / functional	270/270	4/4
9	No. of Blood Storage Units licensed / functional	211/211	4/4

Source: State and District PIP MH Annexure 2013-14,

Out of total deliveries, PHC's (include APHCs and UPHCs) alone contributes 61% and UHP contribute 39% in the district. Strategically 3 to 4 PHCs are located in every block serving 30 to 50 thousand population, which are best positioned to meet the demand of maternal services in the district. The state has made mandatory to rationally deploy HR in all facilities. A policy decision has been taken to deploy 2-3 MOs in PHCs and 5 MOs in CHC. Specialist available only at level II MCH center in each health unit district in the state.

However, there is scope to improve PNC visit within 48 hours and 14 days after deliveries in the state and district. State and district reported 57% and 53% PNC visit against total deliveries during the period. PNC visits are essential to prevent complications for both mother and new born baby. Many of the maternal and infant deaths occur during first week after the baby is born.

Table 10 Type of deliveries from April to July 2013 – TN and Madurai

Deliveries	**Tamil Nadu**		**Madurai**	
Expected deliveries	**3,86,585**		**19,181**	
Institutional deliveries	3,37,715	87.36%	16,521	86.13%
Skill Birth Attendant (Home)	217	0.06%	1	0.01%
Non-Skill Birth Attendant (Home)	243	0.06%	2	0.01%
Unreported deliveries	48,410	12.52%	2,657	13.85%

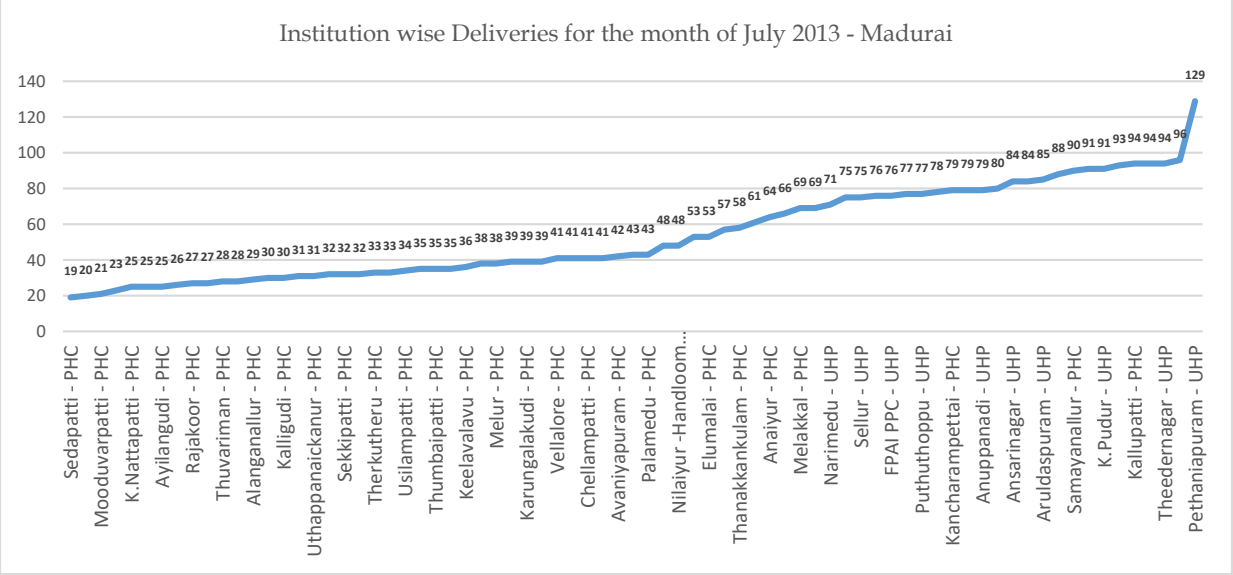
Source: HMIS, 2013

Expected deliveries derived based on population and crude birth rate for the period of April to July 2013 for the state and Madurai district. Out of expected deliveries, 87% and 86% of institutional deliveries reported from state and district, which is a good sign of indication. Negligible number of home deliveries, skilled and non-skilled birth attendant, reported from both state and district.

Nevertheless, 13% to 14% of deliveries are not reported at the state and district level. Out of total institutional deliveries, 61% of them take place in PHC level and remaining 39% at Urban Health Post (UHP) in the district. The below graph provides institution wise deliveries for the month of July for Madurai district.

Birth Companionship programme introduced in Tamil Nadu that improves birthing experience for the mother. Cochrane review including many other studies shown that birth companionship will result in shorter labour, less pain medication, decreased rate of C section, early initiation of breast feeding and less postpartum depression. In Tamil Nadu, only female companion will allow during the pregnancy. However, one needs to understand the outcome of birth companion scheme in the state which might helpful for other states to introduce.

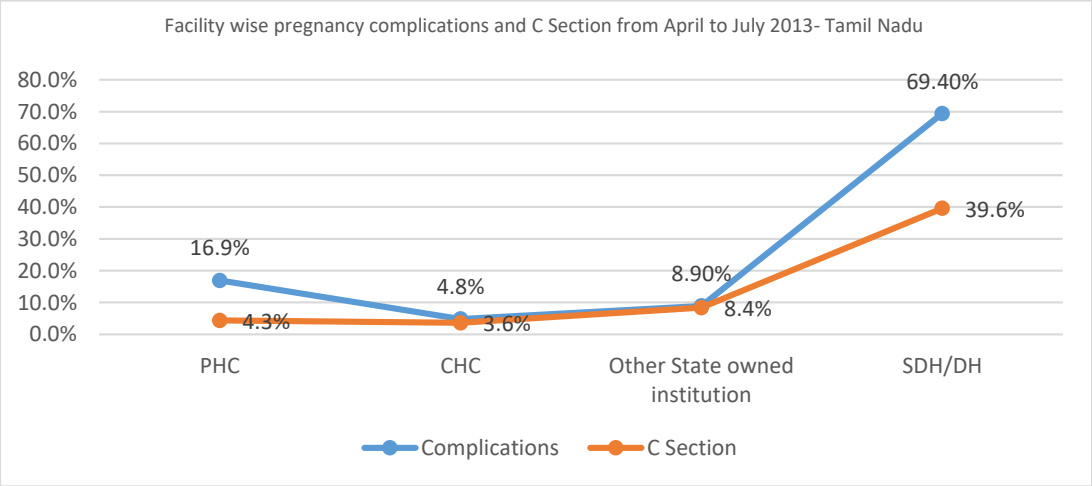
Graph 2 Institutional deliveries for the month of July 2013, Madurai TN



Source: TNHMIS

Out of 77 thousands C Sections in the state, around 45% of them are handled by private facilities and remaining 55% by public health institutions including PHCs, CHC, SDH/DH and other state owned institutions. Similarly, 72 thousands pregnancy complicated reported in the state out of which PHC handles 17% and 69% managed by SDH/DH. PHC alone handles around 50% of complications in comparison with CHC in the state, which indicates PHCs are best positioned to handle pregnancy complications as well C sections. The below graph provides information on pregnancy complications and C section in the state from April to July 2013.

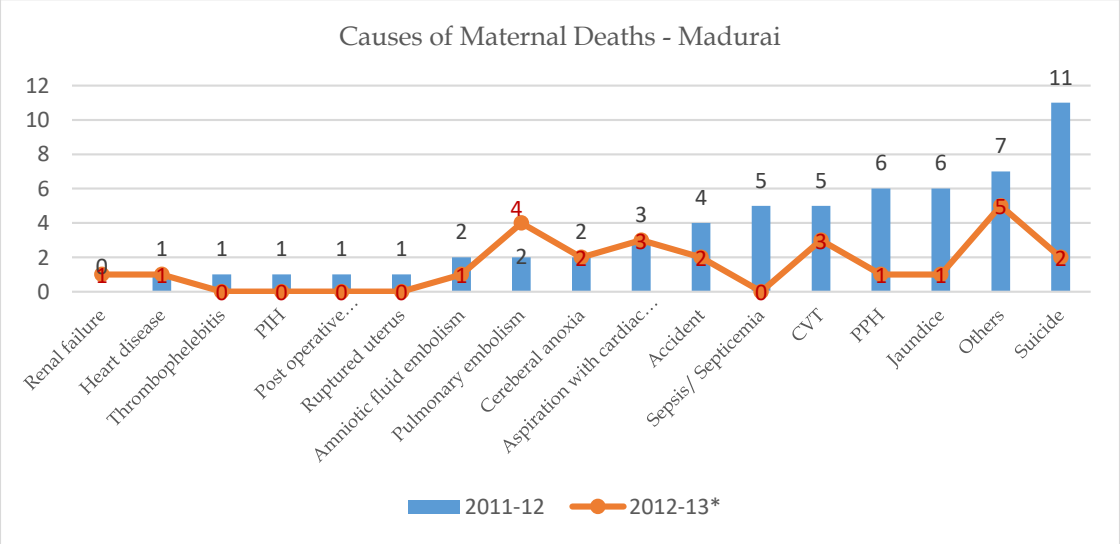
Graph 3 Facility wise Pregnancy Complications and C Sections – Tamil Nadu



6.3 Maternal Death Review

Tamil Nadu established robust mechanism to review maternal deaths in the district and state level. Facility based MDR committees are constituted in the district but yet to constitute community level MDR committees. Madurai contributes around 11% of total 184 maternal deaths in the state from April to July 2013. Total 20 maternal deaths reported and reviewed at facility level during the period. During 2011-12 financial year, Madurai reported 58 maternal deaths and last financial year (up to September '12) 26 MD reported. However, the district magistrate is not regularly reviewing MDs in the district. Regular review of MDs at facility level and facility based MDR committees have provided useful insights and follow-up action to reduce MMR in the state and district. Of total 184 reported MDs in the state during April to July 2013, 72% of cases fall under other causes that includes causes not known. Second major cause of death is severe hypertension followed by bleeding and abortion.

Graph 4 Causes of Maternal Deaths – Madurai



However, the above graph for two financial year reflects that suicide is the single most cause of maternal deaths in the district. One needs to further understand the reasons for suicides whether it is linked to maternity or societal. Priority of the state is to train district, block MOs, and private hospitals on maternal death review in regular interval to strengthen MD reviews, to understand major cause of death and to reduce MMR burden.

Table 11 Causes of maternal deaths – Tamil Nadu and Madurai, April to July 2013

Maternal Deaths	Tamil Nadu	Madurai
Abortion	4	1
Obstructed/prolonged labour	0	0
Severe hypertension/fits	27	6
Bleeding	19	0
High fever	2	1
Other Causes (including causes not known)	132	12
Total	184	20

Source: HMIS

6.4 Janani-Shishu Suraksha Karyakram (JSSK)

6.4.1 User fee in OPD and IPD

OPD and IPD services are free in all health facilities.

6.4.2 Drugs and Consumables

It is observed that there is no shortage of drugs in all health facilities in the district. No beneficiaries has reported buying any medicine from private medical store.

6.4.3 Diagnostics

Diagnostic services are free at all levels of facilities, which include routine blood and urine examination, and ultrasonography. Pregnant women are exempted from paying money for laboratory tests. At primary level all facilities are organizing ANC weekly meeting with all listed pregnant women in that catchment area. The meeting is a platform to educate ANC mothers about ANC care and also provide information on available schemes of state and central government. During these meetings ANC mothers undergo routine examination. The health facility provides lunch for all ANC mothers who attend the clinic.

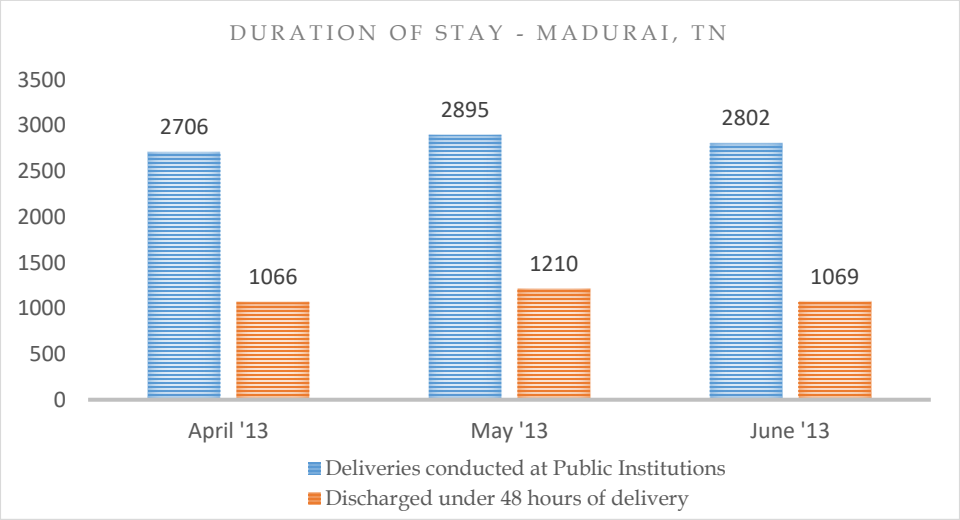
6.4.4 Diet

Provision of free diet available in all health facilities. PHCs are tie-up with local hotel or the health worker of the facility provide three time diet for ANC/PNC mothers and the cost per head is Rs.80 per day. The menu include, morning – 4 idli with glass of milk, afternoon – rice, sambar,

cooked vegetable and cured and evening dinner. CHCs and DH have separate kitchens to cook food for the inmates of the hospital. Staff nurse would general take additional charge of these kitchens. Almost all interviewed beneficiaries were satisfied with the food provided by the health facilities.

It is observed that across all the facilities 60% to 70% of the beneficiaries stay more than 2 days in the health facilities after delivery. Remaining 30% of the beneficiaries stay/discharge within or less than two days. This indicates good number of beneficiaries utilize the provision of diet. Almost all mothers are aware that they will be discharged after three days.

Graph 5 Duration of stay after delivery in Madurai, TN from April to July 2013

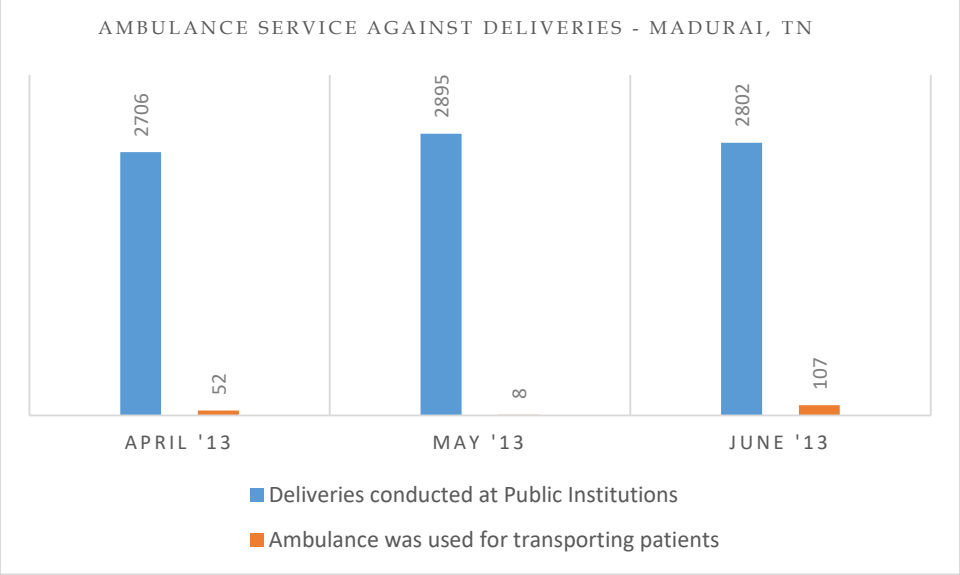


Source: HMIS

6.4.5 Referral Transport

Only 15% (n=20) of the beneficiaries availed the ambulance service to reach the health facility and remaining 17 beneficiaries either used their own vehicle (Auto) or used local bus. For drop-back many of the beneficiaries intend to return by government vehicle but due to unavailability of vehicle almost all would be utilizing their own vehicle or public transportation. However, during exit interview, all beneficiaries informed that they are aware of ambulance services but due to various reasons they could not avail the facility. Around 50% respondent said that they visited health facility during full-term for usual check-up but admitted in the hospital for delivery. However, the entitlement of referral transport under JSSK is available across PHCs but not yet available in secondary hospitals like CHCs, SDH/DH.

Graph 6 Ambulance service against reported deliveries – April to July 2013



Source: HMIS

The cost for transportation range from Rs. 20 (bus) to Rs. 250 (auto/car) depends on distance and time. There is no exclusive ambulance for referral transport but they dependent on 108 ambulance service, which already overburdened with high number of RTA causalities. Beneficiaries also reported that the response time for 108 ambulance has delayed than expected time from 15 minutes to 35 or more minutes. Administration and finance department informed that the fund has been released to all level health facilities to implement JSSK but secondary and tertiary level hospitals yet to implement referral transport scheme under JSSK.

It is evident from the reported data that only 2% to 4% percent of the beneficiaries are availing the ambulance facility and remaining of them are dependent on private vehicles which is one of the major contribution for out of pocket expenditure among the PWs.

6.4.6 Display of entitlements

The signage of JSSK displayed at state health society premises (see photo) but not displayed in health facilities visited. However, when discussed with the district officials, they informed that JSSK progamme started in January 2013 in the district. But display of JSY is visible in all health facilities visited and display of state health schemes such as Dr. Muthu Lakshmi Reddy Maternity Benefit Scheme and CM comprehensive health insurance schemes well displayed in all health facilities.

6.4.7 Awareness of community

When enquired about JSSK entitlements with beneficiaries, they are aware about entitlements under different schemes including JSSK. Weekly ANC meeting at PHC level is a good platform to create awareness about different schemes. Village Health Nurse (VHN) also act as catalyst to create awareness among communities. Socially and politically communities are empowered to demand health services. State has also Dr. Muthulakshmi Reddy Maternity Benefit schemes, which provides Rs.12,000 for BPL families. The scheme provides amount in three instalments, 1st installment after completion of ANC check-up, 2nd after delivery and 3rd instalment after complete immunization of child.

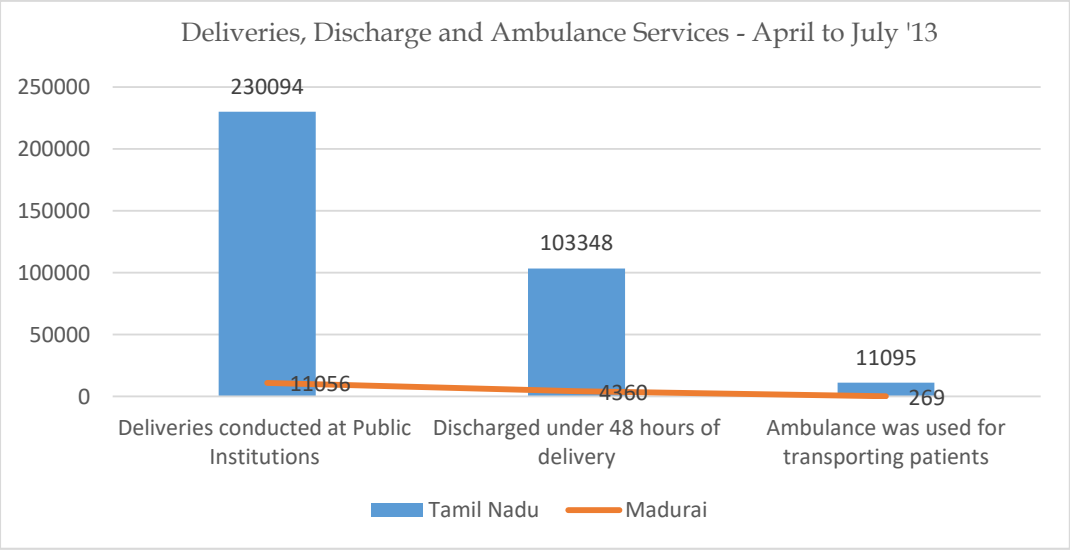
6.4.8 Grievance Redressal Cell

There is no formal grievance redressal mechanism available in the visited facilities, when enquired with the beneficiaries, 75% said they are aware. This include MOs, staff nurse and local VHNs. However, no one has said that they don't know but there is no formal system to address beneficiary grievances in health facilities.

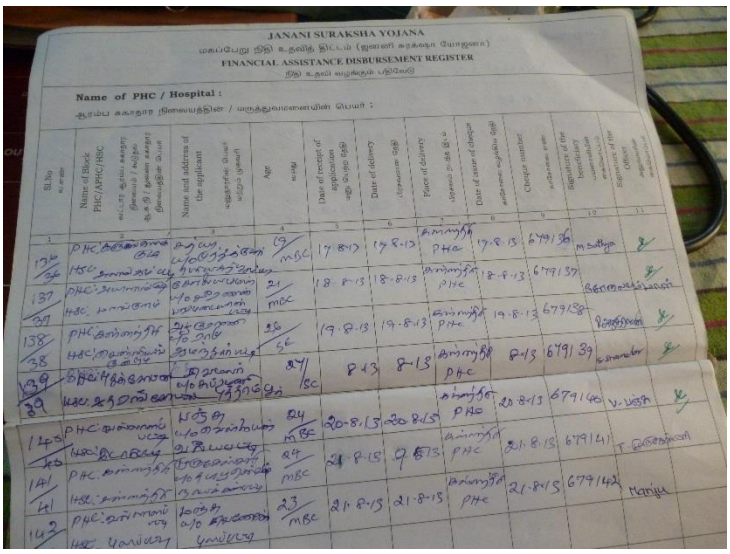
6.4.9 Out of pocket expenditure / informal charges

Interaction with beneficiaries revealed that out of pocket expenditure arise mostly on transportation. Around 85% interviewed beneficiary have used their own or public transportation for convenience even though they know the availability of ambulance services. State level programme officer informed that they are in the process of pooling ambulance to place at health facility with centralized call center for assured referral services for eligible mothers. The below graph provides similar picture in the state as well.

Graph 7 Deliveries, Discharge and Ambulance Services – April to July 2013 – Tamil Nadu



6.5 Janani-Suraksha Yojana (JSY)


JANANI SURAKSHA YOJANA
மகப்பேறு நிதி உதவித் திட்டம் (ஜனனி சுரக்ஷா யோஜனா)
FINANCIAL ASSISTANCE DISBURSEMENT REGISTER
நிதி உதவி வழங்கும் பதிவேடு
Name of PHC / Hospital :
ஆரம்ப சுகாதார நிலையத்தின் / மருத்துவமனையின் பெயர் :

Tamil Nadu has state specific maternity benefit scheme, which provides Rs. 12,000 in three installments for BPL families. JSY under NRHM, provides Rs. 700 per beneficiary for institutional delivery. Visited facilities are maintaining proper record of JSY incentives. It is observed that there is no pending amount under JSY and regularly disbursing amount to the beneficiaries within one or two days of time.

Number of women registered under JSY from April to July has increased by 36% in comparison with last year same period at the state level. However, an increase of 50% observed in Madurai district for the same period in comparison with last year's performance. Percentage of JSY registration to total ANC registration has increased by 6.2% from 10.4% to 16.6% in comparison with last year's performance. It is important to note that only 16% of total ANC mothers registered for JSY. Incentives paid for home deliveries and institutional deliveries also drastically reduced by 59% and 20% at state level. One needs to understand the reasons for low registration of ANC mothers for JSY in the state. One reason could be state sponsored maternity benefit scheme, which is priority for state and also provides higher incentive.

Table 12 Comparison of JSY Performance from April to July – Madurai and Tamil Nadu

JSY Incentives	Tamil Nadu		Madurai	
	2013-14	2012-13	2013-14	2012-13
Number of Women registered under JSY	62,872	40,208	2,893	1,435
% JSY registration to Total ANC Registration	16.60%	10.40%	15.80%	8%
Mothers paid JSY incentive for home deliveries	211	512	1	23
% Mothers paid JSY Incentive for Delivery at Public institution to Total Public Deliveries	64.50%	85.80%	8.10%	15.30%

Source: HMIS

7 Child Health

7.1 SNCU

IMR of TN is 21 points lower than the national average 42 as per SRS 2012. The district and the state IMR recorded similar rate, 22 per 1000 live births. TN State has 1766 NBCC's, 73% of 156 sanctioned NBSU and 64 SNCU's. The Madurai district has 52 NBCC's, 3 NBSUs and 2 SNCUs. These NBSUs and SNCUs are located in medical college, district hospital and sub-district hospital with 20, 10 and 16 bed capacity in the district.

Table 13 Status of different type of new born care facilities in Tamil Nadu and Madurai

Status	NBCC		NBSU		SNCU	
	Sanctioned	Functional	Sanctioned	Functional	Sanctioned	Functional
Tamil Nadu	1714	1714	152	111	62	62
Madurai	52	52	4	3	2	2
Total	1766	1766	156	114	64	64

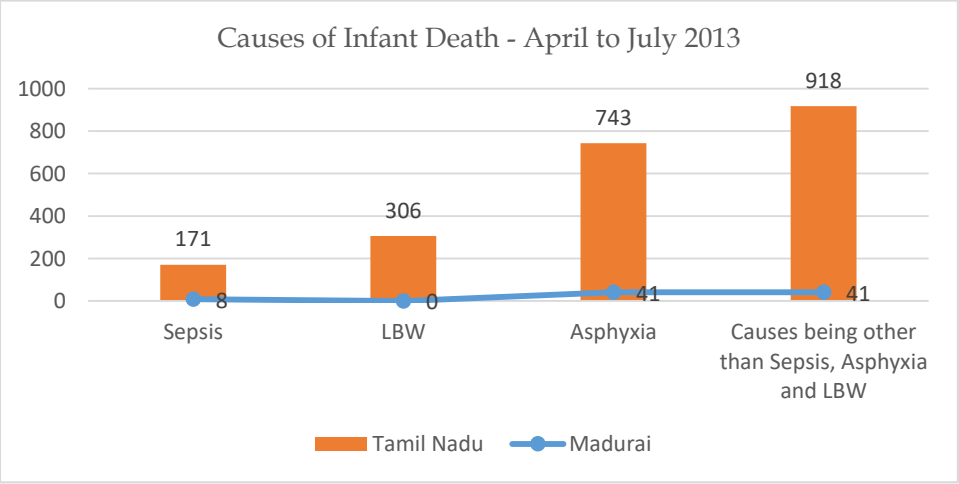
Source: PIP 2013-14

7.2 Infant deaths

The district constituted maternal and child death task force, which review child deaths every month in the district. State initiated comprehensive intervention plan to reduce neonatal deaths in blocks with high IMR. Neonatal care and referral services strengthened in the state by establishing Neonatal Intensive Care Unit (NICU) in 15 high IMR identified blocks of the state. Pediatricians as nodal officers of NICUs visits these blocks to monitor and to provide onsite support. Madurai medical college's Rajaji hospital has NICU facility which caters to adjacent districts and hence it is overloaded with sick neonates. The above picture depicts fully occupied NICU in Madurai's Rajaji hospital and there were around 25 more sick neonates were waiting outside to get their turn. It reflects that there is a need to further expand the NICU bed capacity to cater the needs of Southern Tamil Nadu.

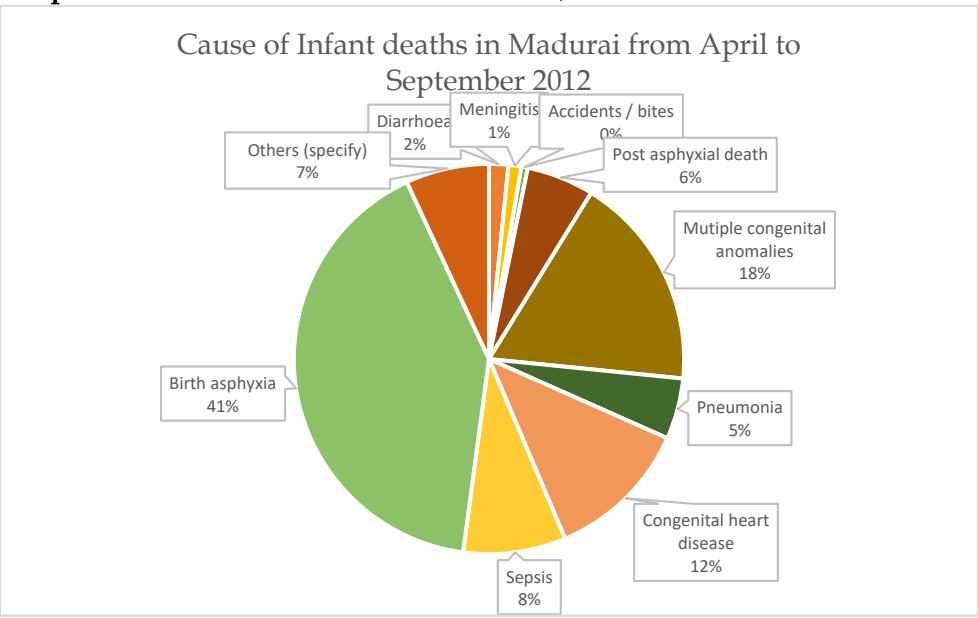
Still birth constitute 1% of total live births recorded (16,442) from April 2012 to July 2013 in Madurai district. The male infant deaths are slightly higher (0.88%) than female infant deaths (0.72%) in Madurai during April to September 2012.

Graph 8 Cause of infant deaths 24 hours to 4 weeks of birth – Madurai and Tamil Nadu



Around 69% of deaths occurred in government hospitals and remaining deaths occurred at home (17.66%), private hospitals (7.79%) and 5% occurred during transit. 53% of deaths reported within one week of birth and remaining 47% deaths occurred within 52 weeks of birth. Causes being other than sepsis, asphyxia and low birth weight contributes 43% of IDs and remaining 57% ID related to sepsis, asphyxia and LBW babies in the state. Major cause of deaths include birth asphyxia 41%, congenital anomalies 18% and congenital heart diseases 12% in Madurai district during 2012.

Graph 9 Causes of infant deaths – Madurai, Tamil Nadu

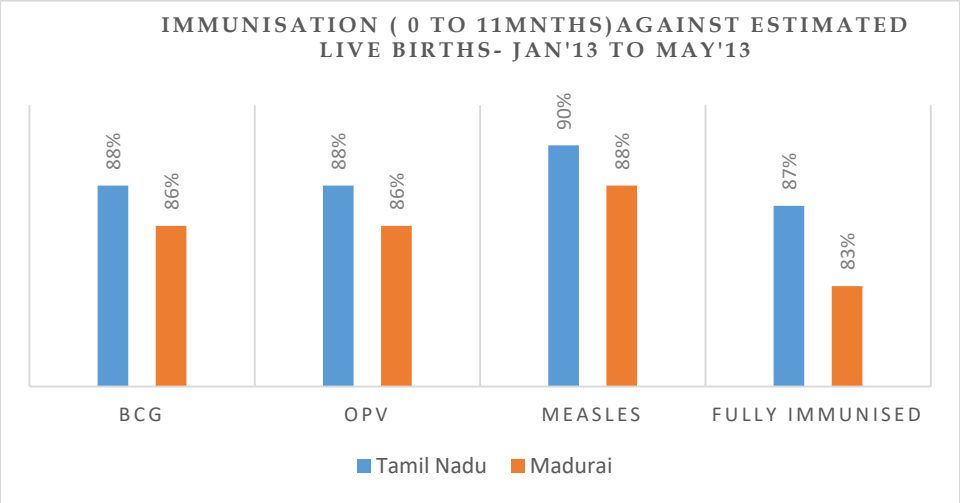


Source: DPH Madurai

7.3 Immunization

Cumulative figures for Tamil Nadu from April to July 2013 shows improved performance in comparison with Madurai district. The full immunization coverage of district is 83%, which is 4% lower than state average. Immunization coverage in the district comparably lower than state's average. BCG to DPT3 dropout observed in Tamil Nadu and Madurai by 100%. However, BCG-measles drop out percentage decreased by 3% each in Tamil Nadu and Madurai. Facilities visited had functional ILR and deep freezer with temperature card duly filled and adequate temperature maintained.

Graph 10 Immunization coverage against estimated live births – TN and Madurai



The TN state shows good performance of planned versus held immunization sessions which correlates well with immunization achievement in the district. However, in comparison with state, district sessions held lesser than target. It is concern to note that only 4% of immunization sessions were attended by ASHAs at state level who are supposed to do community mobilization. HIMS show very low number of ASHAs attend immunization session because ASHAs were new and most of them placed in tribal areas of the district. However, it is evident from the field that all sessions were attend by village health nurse who does community mobilization.

Table 14 Immunization session held in Tamil Nadu and Madurai from April to July 2013

Immunization Sessions	% of immunization sessions held vs planned	% of immunization sessions where ASHA were present (out of the held sessions)
Tamil Nadu	95.94%	3.97%
Madurai	92.12%	0.61%

8. Family Planning

Performance of family planning programmes reflects good outcome in the state and district. As per the DLHS III, state and district has 18.1% and 11.8% total unmet needs and on the basis of district population, total eligible couples for unmet need calculated for four months of April to

July 2013. 11% of the total unmet needs were catered in the district, which is 1% higher than the state average in meeting family planning needs. State outperformed in providing IUDs against total reported FP users, which is 44% from April to July 2013. However, state performance of postpartum sterilization out of total female sterilization is higher by 4% in comparison with district. Overall sterilization against total reported family planning is higher by 9% in the district in comparison with state average.

Table 15 Family Planning Key Indicators – April to July 2013

FP Key Indicators	Tamil Nadu	Madurai
Unmet Need	18.1	11.8
Eligible Couples for unmet need- Calculated Using DLHSIII Unmet need	2219964	60947
Total reported FP Users against estimated eligible couples	225376 [10%]	6814 [11%]
Total IUDs reported against total reported FP users	98142 [44%]	1833 [27%]
Total OCP users against total reported FP users	3893 [2%]	142 [2%]
of Total sterilization (against Estimated Level of Achievement)	94855 [42%]	3442 [51%]
Postpartum sterilization out of total female sterilizations	74999 [79%]	2594 [75%]
Male sterilizations out of total sterilizations	513 [1%]	22 [1%]
Female sterilizations out of total sterilizations	94342 [99%]	3420 [99%]

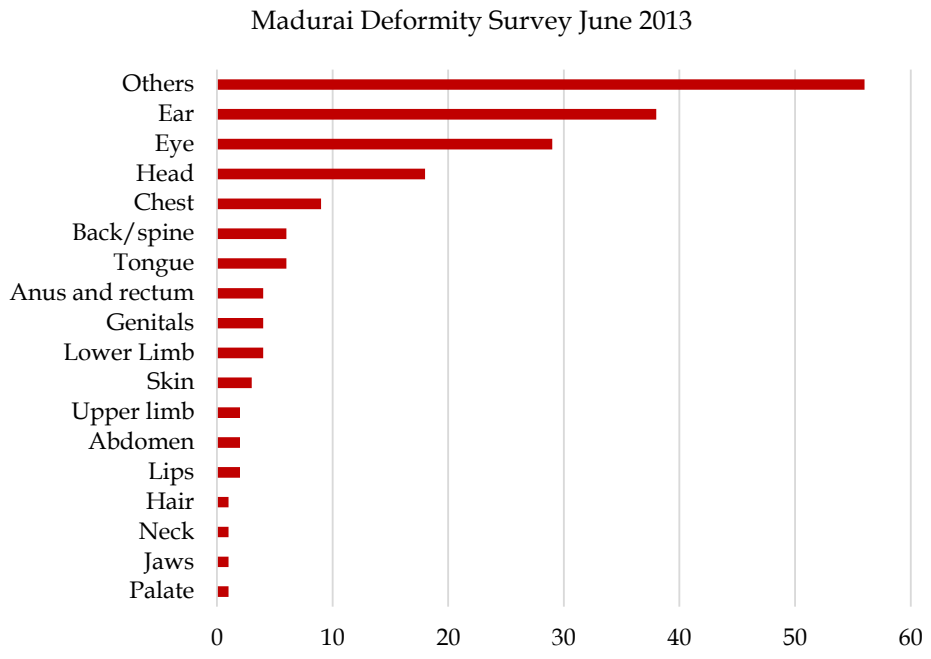
Source: HMIS 2013

Oral Contraceptive Pill (OCP) users remain the same across state and district and there is a need to promote OCP for spacing.

9 School Health Programme

The district covers 1188 government and 318 aided schools covering 4.05 lakhs students from 1st grade to 12th grade in Madurai district. The approach of SHP in Madurai is PHC based doctor supported by staff nurse across 13 blocks in the district. Every block has 2 to 7 dedicated SHP teams to screen the children. Total 33 AYUSH doctors, 4 dentist and 383 dedicated ANM available. The school children were screened around three times in 2012-13. The district also conduct congenital deformity survey, which is a state initiative. This survey done by village health nurse within her catchment area. During this financial year up to May 2013, 187 congenital deformities identified, which include 63% male and 37% female children. Around 50% of the disorders are related to ear, eye, head and chest and referred to health center for treatment. The below graph provide deformity wise break-up.

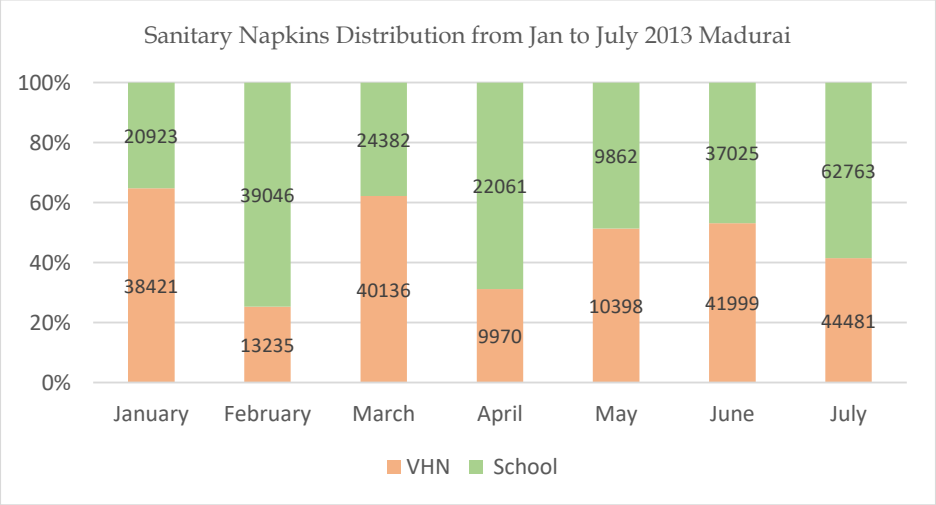
Graph 11 Congenital Deformities Survey – Madurai, Tamil Nadu (up to May 2013)



10. WIFS and Sanitary Napkins

At health sub-center level, VHN maintains line listing of all adolescent population, which include school going and out of school girls. WIFS programme of Madurai district covers around 1.38 lakh girls and line listing of adolescent girls are available with all HSCs. WIFS programme include distribution of IFA and albendazole tablets. Total 4.14 lakhs napkins distributed, which include 1.98 lakh through Village Health Nurse (VHN) and 2.16 lakh through schools from Jan to July 2013.

Graph 12 Distribution of Sanitary napkins from VHN and School – Madurai, TN



11. Quality in Health Services

11.1 Infection Control and Bio-Medical Waste Management

There is a clear cut distinction between primary and secondary care facilities in terms of bio-medical waste management. None of the PHC have proper protocols for disposal of bio-medical waste. These PHCs are still dependent on deep pits, which are dug in the hospital premises, where they dump bio-medical waste including placenta. Usually, health workers take the responsibility for the disposal of hospital waste. However, secondary care facilities have tied up with third party agency to dispose bio-waste and CHC meet the expenditure from RKS or AMC grant. Secondary care facilities have proper color coded buckets in OT, labor and lab rooms and in some facilities they are in partial use. Needles and syringes are properly mutilated and disinfected before putting in waste bin. However, the district needs additional trainings and robust monitoring as far as infection prevention practices are concerned.

11.2 Emergency preparedness

District headquarter hospital has dedicated casualty division to attend the emergency cases. There is increasing trend in number of emergency case in urban areas of the district. Some of the primary and most of the secondary care facilities have emergency preparedness but there is scope to improve the emergency preparedness as per standard protocol.

11.3 Information Display

Information related to health programs are well displayed except JSSK entitlements. Visited facilities have displayed citizen charter, facility catchment area with number of HSCs, RKS and month wise facility performance of institutional deliveries. However, state schemes like maternity benefit and CMs comprehensive health insurance scheme were well displayed outside of all visited facilities. Health sub-centers are also well displayed information on health related activities. It seems most of the film fraternity are actively engaged in RNTCP and HIV/AIDS awareness. HSC also displayed Expected Date of Deliveries (EDD) in that catchment area and also a chart depicting type of deliveries – normal and LSCS.

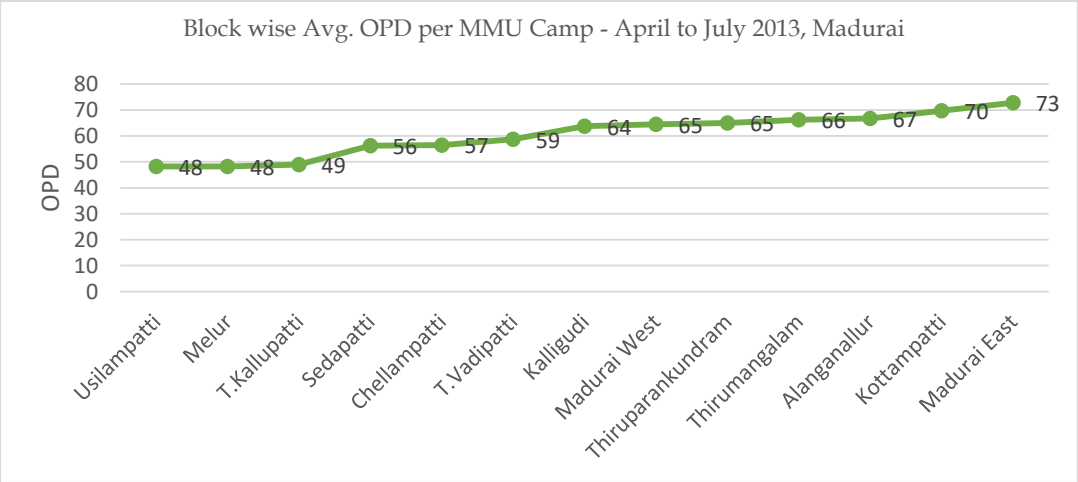
12. Mobile Medical Units and Referral Transport

The district has 13 MMU in 13 blocks and on an average each MMU covers 60 OPD load per camp. The lowest OP being 48 in Usilampatti and the highest 73 OP in Madurai East per camp during April to July 2013. Every block has a micro plan with fixed dates at block level. VHN also plays an important role in social mobilization for MMUs. Madurai district yet to start

diagnostic services in mobile medical unit. On an average each MMU cover 60 villages per month and 34 Anganwadi Centers across 13 blocks of Madurai.

Madurai district has 15 Basic Life Support (BLS) ambulance and 1 Advance Life Support (ALS) ambulance that covers on average 1 lakh population per ambulance. The average response time per call was 30 minutes and on average 4.5 trips per day per ambulance. Apart from these, there are 20 Referral Transport (RT) vehicles available in the district. Average number of emergencies handled per month per referral transport is 492 including pregnant women.

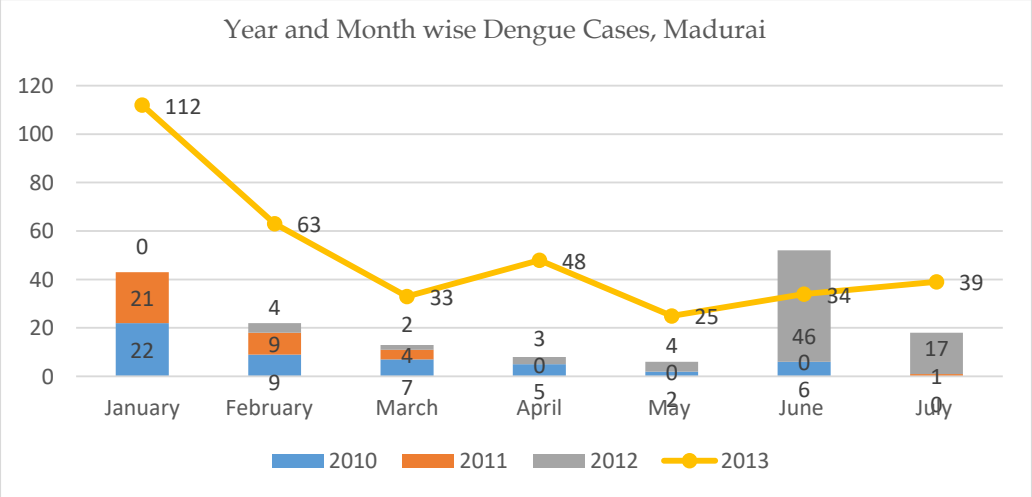
Graph 13 Performance of MMU, Madurai, TN



13. Integrated Disease Surveillance Project (IDSP)

District has robust IDSP programme, which is reviewed every month by district public health authority. Around 78 units reporting P-form out of 83 units, and 49 L-form, which include private and other hospitals (ESI) in the district. Total 314 S-forms are reporting to the district surveillance officer (DSO). Total 354 dengue cases reported in this year from 112 cases in January to 39 in July 2013. In comparison with previous three years, number of dengue cases increased by 79% in the district.

Graph 14 Year and Month wise dengue cases, Madurai – January to July



From January to July 2013, Madurai district reported 614 typhoid, 29 malaria, 180 tuberculosis and 88 HIV positive cases.

Table 16 Disease wise sample examined and positive rate from January to July 2013

Disease	Examined	Positive	%
Dengue	4266	354	8.30
Typhoid	4519	614	13.59
Malaria	92042	29	0.03
TB	4794	180	3.75
HIV	16008	88	0.55

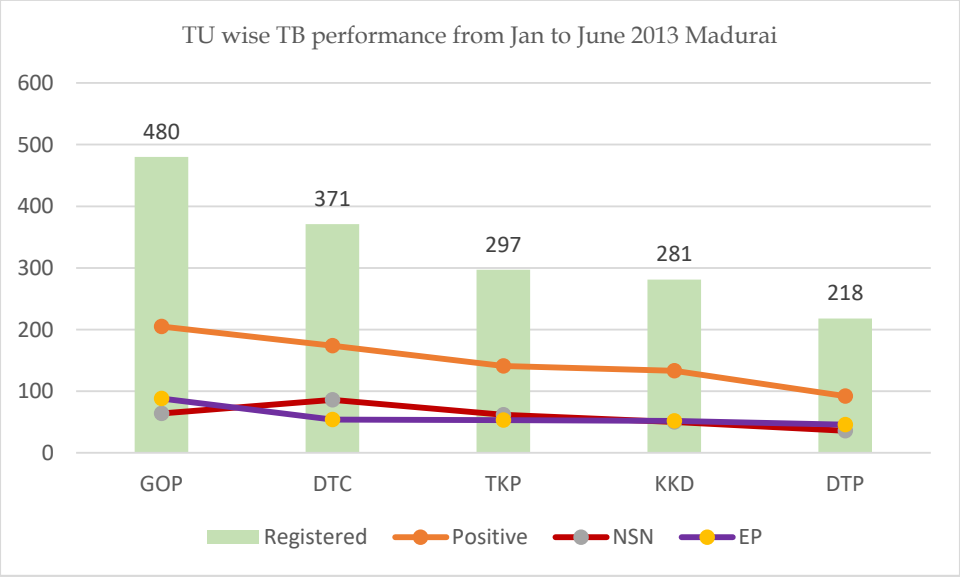
Source: IDSP, Madurai

14. Disease Control Programme

14.1 Revised National Tuberculosis Control Programme

Madurai district has 5 Treatment Units (TUs), 33 Designated Microscopic Centers (DMCs) with 5 Senior Treatment Supervisors (STSs) and 5 Senior TB Laboratory Supervisor (STLS). Out of 33 DMCs, two DMC have entered Public Private Mix (PPM), one under sputum collection scheme another DMC scheme including treatment center. However, out of 33 DMCs only 14 RNTCP LT's (contractual) are posted and rest of them are vacant. Due to shortage of RNTCP LTs, many of the DMC are dependent on other lab technicians (ICTC) in the health facility for sputum examination. As per the population norms there should be one DMC for every 100,000 (50,000 per tribal and hilly areas) population and one TU per 5 lakh population (2 to 2.5 lakhs tribal and hilly areas. As per the population norms, the district has adequate RNTCP facilities available for screening, diagnosis and treatment.

Graph 15 TU wise TB performance from January to June 2013, Madurai



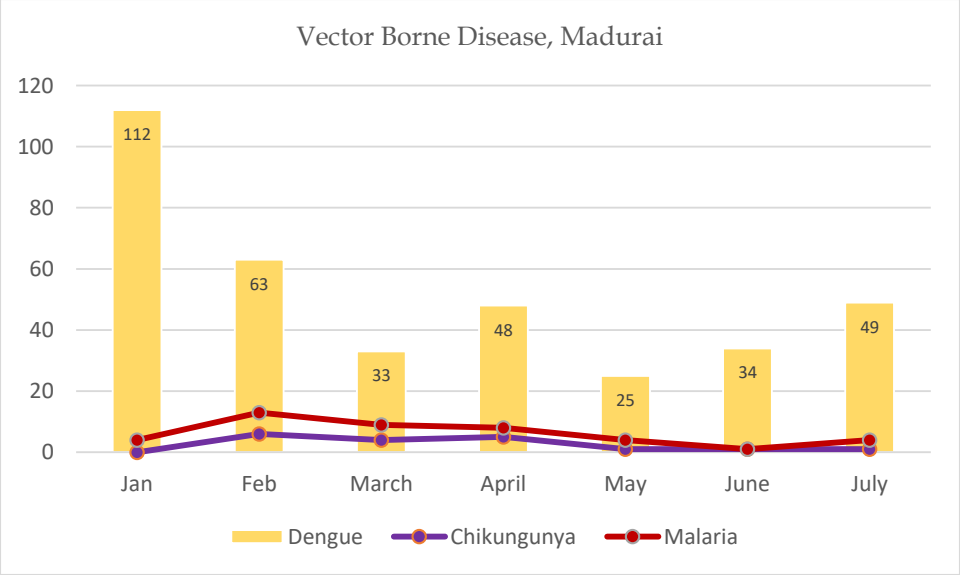
Madurai district registered 1647 TB cases from January to June 2013. Out of which, 45% positive and 18% each new smear negative and extra pulmonary cases. RNTCP programme suspected

358 MDR cases and referred 252 for diagnosis and confirmed 15 cases and referred for DOTS+ from Jan to June 2013. RNTCP in association with FIND (Foundation for Innovative New Diagnostics) established CBNAAT (Cartridge Based Nucleic Acid Amplification Testing) Project. The GeneXpert MTB/RIF is a cartridge based computerized diagnostic test that identifies both the presence of Mycobacterium TB in the sputum sample and drug resistance to Rifampicin. The GeneXpert machine takes two hours for each sample to test. This center caters to 13 southern districts of Tamil Nadu including Madurai. From January to July 2013, the GeneXpert center received 2306 sputum samples and achieved 98% testing in CBNAAT. Of the total 2260 samples, 12.12% samples detected with drug resistance to rifampicin. Around 9.55% tested samples are with no MTB, 50 samples shown errors in the test and 28 samples are rejected by the center.

14.2 National Vector Borne Diseases Control Programme

From January to July 2013, the district has examined 92,042 blood smear and confirmed 29 cases, which is 0.03% positivity. Out of 29 positive cases, 14% of them are Plasmodium falciparum (Pf) cases and remaining cases are Plasmodium Vivax (Pv). Madurai district recorded high number of Dengue cases, last calendar year (2012) the district reported 2364 dengue positive cases and this year 354 dengue positives reported from January to July. The district reported 78.5% increase number of dengue cases in comparison with last year for the same period.

Graph 16 Vector Borne Disease Control Programme, Madurai

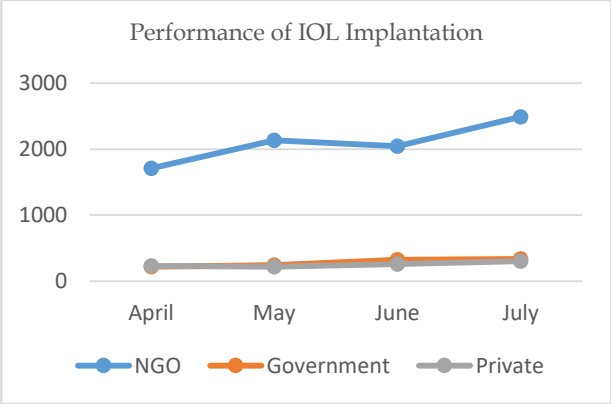


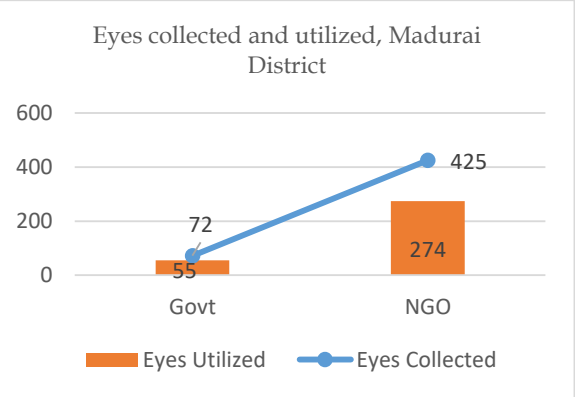
Total 18 chikungunya cases reported out of 268 samples received from the district. There are total five outbreak report (OBR) raised by district IDSP unit from January to July. The OBR based on dengue, chikungunya and typhoid in five different PHC catchment area of the district.

14.3 National Programme for Control of Blindness (NPCB)

The Annual NPCB target for the district is 27,000 and on an average district achieved 80% to 97% cataract surgeries from 2005-06 to 2012-13. The district entered PPP partnership with four NGOs namely Aravind eye hospital, Meenakshi Mission hospital, Sankara eye hospital, and Damien eye hospital. Around 94 camps approved in the district and 55% of them achieved in conducting the camps during April to July 2013. During these camps, 6776 screened for cataracts and 34% of them undergone for surgeries in partnered NGO institutions. During the same period, government Rajaji hospital conducted 786 surgeries.

Graph 17 Performance of NPCB programme in Madurai District





Total 10518 Intraocular Lens (IOL) implanted in the district from April to July, which include 8381 IOL in NGOs, 1122 IOLs in government institution and 1015 IOLs in private institutions. Total 497 eyes collected in the district including government and NGOs and 66% of them utilized during the period. Around 83% to 85% of eyes collected and utilized in the NGO institutions and reaming of them in government hospital.

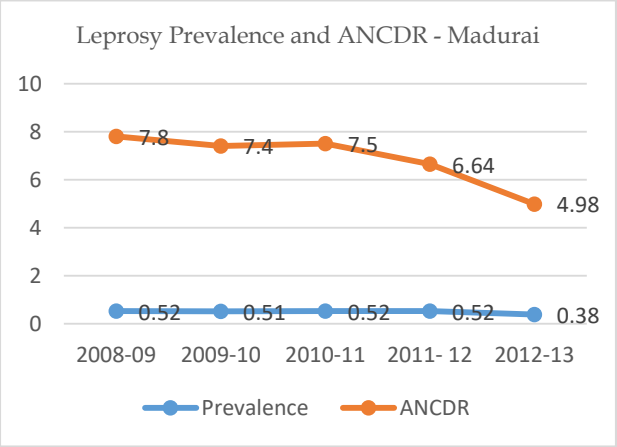
14.4 National Leprosy Eradication Programme (NLEP)

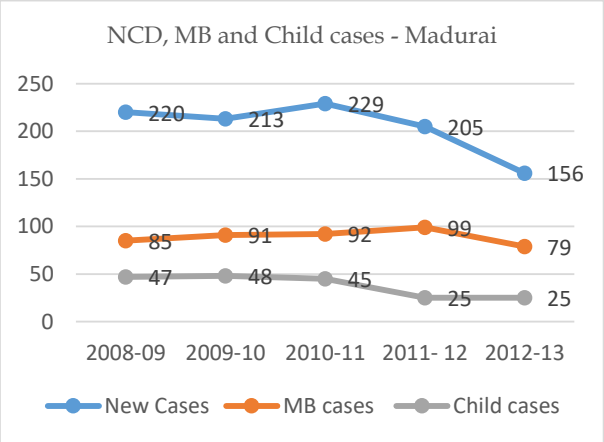
Tamil Nadu achieved the status of elimination of leprosy and current prevalence rate is 0.42 per 10,000 population. Madurai district reported the prevalence of 0.38 per 10,000 during the year up to July 2013. However, out of 13 blocks, one block Alanaganallur reported more than 1 prevalence rate and 11.22 ANCDR (annual new case detection rate). District leprosy officer and physiotherapist are on deputation in the district. Out of 13 blocks, 7 blocks do not have non-medical supervisors and no health educator available in the district.

During the year up to July 2013, the district has 121 cases registered under treatment of which 51 newly detected. The newly detected cases include 19 MB, 10 child case and four cases with deformity. Total 51 cases were released from treatment. Number of new cases reduced from 220 in 2008-09 to 156 in 2012-13 with an increase of MB cases in the district. Disability Prevention and Medical Rehabilitation (DPMR) camps treated 974 grade II deformity cases, 19 cases undergone

for Reconstructive Surgeries (RCS) during 2012-13. Around 70 people live in Sivalinganagar a designated leprosy colony, which include 25 LAP (Leprosy Affected Person) and 45 dependent on LAP in Madurai district.

Graph 18 Prevalence and ANCDR of leprosy in Madurai district



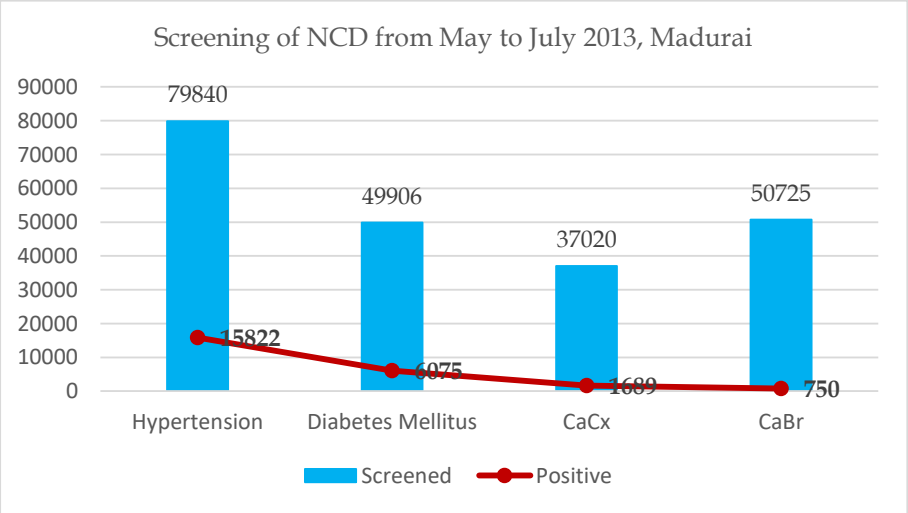


Around 94 ASHAs are exclusively allotted for leprosy activities for high endemic blocks out of which 92 recruited. Four blocks are identified as high endemic blocks in the district – Chellampattti, Doddappanaickanur, Kallikudy and Alanganallur. Each of these block recruited 20 to 25 ASHA for leprosy activities. As on July 2013, 525 LAP attended disability welfare camps and issued 377 disability identity cards and 223 disability pensions in the district.

15. Non-Communicable Diseases

Tamil Nadu is currently contending with the double burden of disease, infectious and non-infectious diseases. Tamil Nadu Health System Project (TNSHP) initially undertaken NCD pilot project in few district. NCDs include hypertension, type-2 diabetes mellitus, carcinoma cervical (CaCx) and carcinoma breast (CaBr). After successful implementation of pilot project the state extend NCD project to all districts of Tamil Nadu.

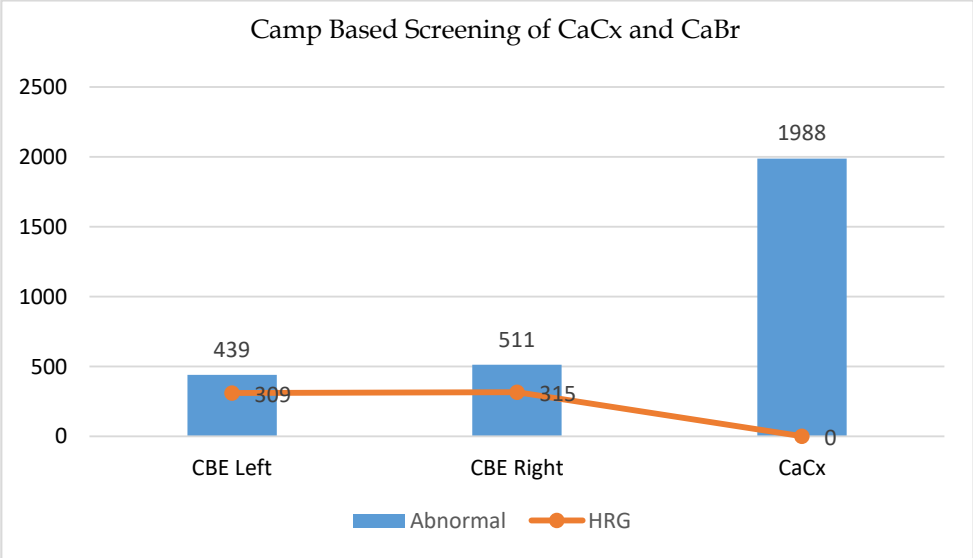
Graph 19 Screening of NCDs from May to July 2013, Madurai TN



NCD project of Madurai district screened 79 thousands for hypertensive, 50 thousands for type-2 DM, 37 thousands for Carcinoma Cervix (CaCx) and 50 thousands for Carcinoma Breast (CaBr) from May to July 2013. The positive rate among the screened population was 19.8%, 12.2%, 4.6% and 1.5% for hypertension, diabetes mellitus, and carcinoma cervix and carcinoma breast.

However, when compare positivity of known with new diabetes, known diabetes are higher by 43% in comparison with new diabetes. On the contrary, new hypertensive cases are higher by 6% in comparison with known hypertensive cases. It indicates that diabetes awareness is higher among the population than the hypertensive condition. Hospital based screening (clinical population) intends to get more known cases than new cases. Therefore hospital based screening does not give prevalence among the general population.

Graph 20 Camp Based Screening of CaCx and CaBr from April to August (19th), Madurai



On the other hand, Madurai district started camp based screening called "*Pengal Nala Thittam*" a camp based screening for Clinical Breast Examination (CBE) and carcinoma cervix. Responsibilities are entrusted to PHCs to conduct camps in their catchment area. From April to 19th August 2013, the district planned 1735 camps across 51 PHC catchment area and achieved 72.2% in organizing such camps. Around 10,98,949 population enumerated and found 2,15,059 eligible population who are above 30 years. Out of 2.15 lakh eligible population, 20% of them attended the camps. Around 1988 via/vili test found abnormal and similarly 439 left CBE and 511 right CBE found abnormal during these camps. Around 1703 CaCx cases and 632 CaBr cases were referred to higher institutions for further examination and treatment. Among the known cancers, eight were under treatment for CaBr and one for CaCx. Seven completed treatment for CaBr and four for cervix in the district.

16. Others

16.1 OPD and IPD

On an average 742 OPD per 1000 population at state level and 630 OPD per 1000 population at district level reported from April to July 2013. 16 and 10 IPD per 1000 population recorded at state and district level. Of the 1.17 million IPD in the state, 7.1% underwent major operations with anesthesia and 1% underwent minor surgeries out of 53.54 million OPDs. AYUSH and dental procedures constitutes 2.2% each of the total OPD of the state from April to July 2013. Similarly, out of 30 thousands IPD of Madurai, 8.7% underwent major operations with anesthesia and 0.5% underwent minor surgeries out of 1.9 million OPD in the district. AYUSH and dental procedures constitutes 1.2% and 0.26% of total OPD from April to July 2013 in Madurai.

16.2 Information Systems

The weakest aspect in the health programme of Tamil Nadu is data capturing and its utilization. The state has its own TN Health Management Information System (TNHMIS) developed by the TCS. Until recently the data entered in web portal was validated by DHIS-2 and then uploaded in the GoI HMIS web portal. The TNHMIS portal is based on area reporting (using Form 9). The coverage is not complete as the secondary, tertiary and private institutions are not fully covered. Even after validation some errors were found in the up-loaded data in the GoI HMIS portal. This procedure has since been changed and the Assistant Directors have been instructed to upload the PHC/CHC data in the GoI HMIS web portal. In this context, the data from other Health delivery institutions like District Hospital/Taluk /Non-Taluk hospitals and private hospitals have largely been missed out, leading to inconsistencies and decline in the reported figures in HMIS portal.

A similar situation exists in reporting Mother Child Tracking System (MCTS) too. The state specific portal, PICME, is used to enter data at the periphery. The data is uploaded into the GOI portal MCTS periodically. On examination of the data downloaded from the MCTS portal it was found that many of the required information are missing. Also the women's particulars are duplicated with different serial numbers (unique IDs). It is learnt that one data entry operator was assigned to each block level PHC to upload the MCTS data. This person was engaged for

four months during last financial year and the data pertaining to the Dr. Muthulakshmi Reddy Maternal Benefit Scheme was mainly uploaded in the portal.

The entered data is not analyzed or validated at any of the institutions. Reports generated from the portals are used to submit 'periodic' reports. The reports are not effectively used for review / planning. Many inconsistencies in the reported data was observed and pointed out to the concerned officials.

Even though the medical officers of PHCs reported that they were trained on HMIS / MCTS, interpretation of data but lack the skills in using the data for planning. Moreover, there is no clear plan for facility based reporting in the HMIS portal. In the absence of data it is difficult for facility based monitoring.