



CHAPTER III HEALTHCARE SERVICES



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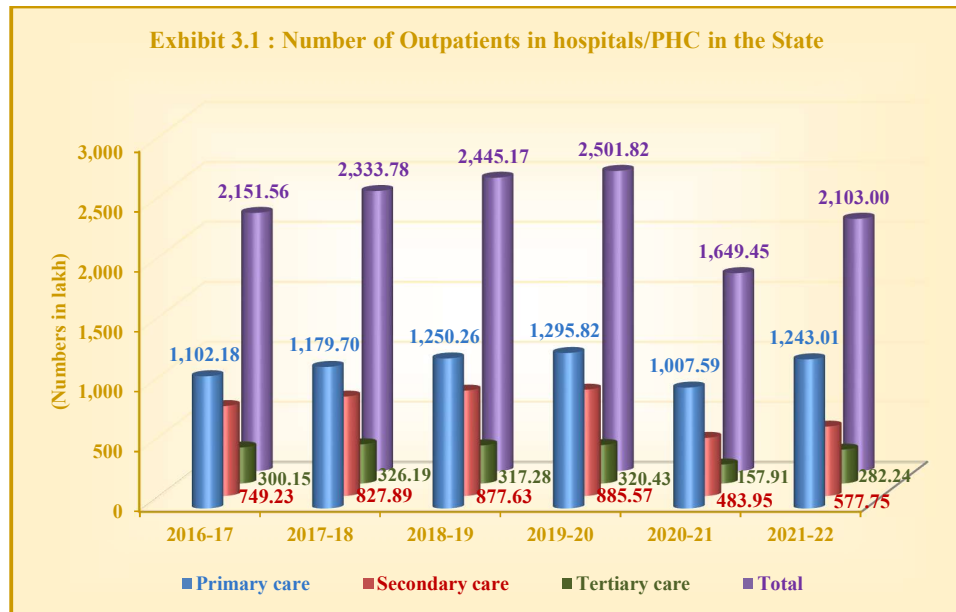
A significant number of Healthcare Facilities (HCFs) lacked even the basic facilities such as patient waiting space, registration counters, drinking water, toilets, compound wall, etc. Deficiencies in support services like laundry, kitchen, mortuary, etc., impacted the quality of services provided by Government HCFs. Significant shortfalls were seen in the availability of Intensive Care Units (ICUs) and Operation Theatres (OTs) in District Headquarter hospitals, where the shortage ranged from 20 per cent to 65 per cent in respect of ICUs and 20 per cent to 83 per cent in respect of OTs with reference to IPHS norms. Hospitals failed to monitor the performance of doctors using HMIS, which assumed greater importance as doctors are allowed private practice and juggle between their private clinics and Government HCFs. The proportion of Lower Segment Caesarean Section (LSCS) to total deliveries in Government HCFs during 2019-21 stood high at 36 per cent of total deliveries against all India average of only 14 per cent.

Tamil Nadu Accident and Emergency Initiative and the '108 Ambulance' services play a crucial role in emergency services. The ambulance services continue to improve its performance in terms of response time, but several other performance indicators were not monitored. COVID-19 came as a shock to the healthcare sector of the State in 2020. A favourable bed-population ratio and the ability to quickly ramp up testing and vaccination services, helped the State to tide over the impact of COVID-19, albeit with 38,000 deaths. Emergency procurement for COVID-19 lacked transparency. Administrative issues caused abnormal delays in paying the compensation due to the families of health workers who succumbed to COVID-19. Out of the 3,757 Oxygen Concentrators supplied by Government of India, 147 were not installed even as of March 2022. The Pressure Swing Adsorption oxygen generator plants were not being optimally used for its intended purpose.

3.1 Outpatient Department Services

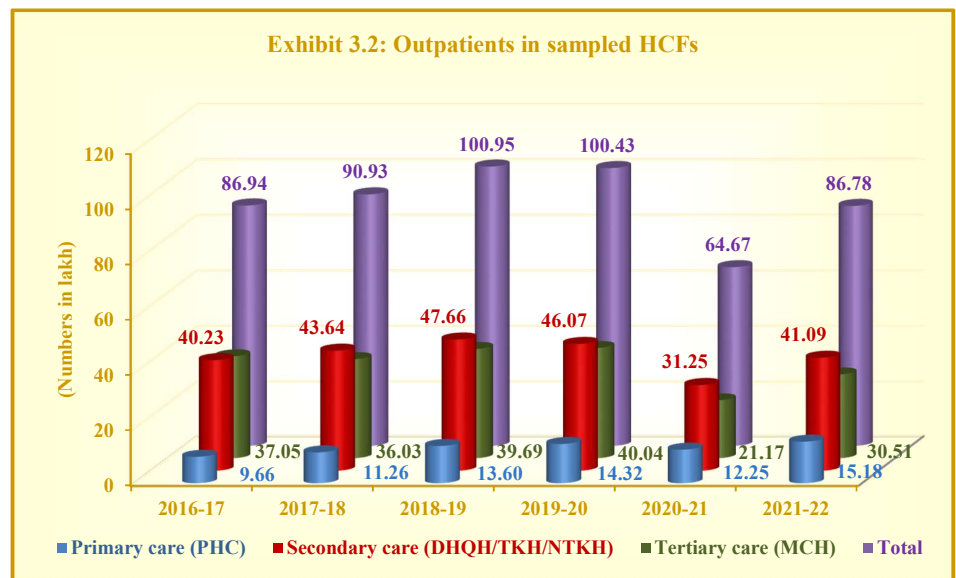
3.1.1 Outpatients treated in Government HCFs

The number of outpatients (OPs) treated in primary, secondary and tertiary Government HCFs during the period 2016-22 are shown in **Exhibit 3.1**.



(Source: Data furnished by the respective Directorates)

Similarly, the number of outpatients attended in the sampled primary, secondary and tertiary hospitals/PHCs is shown in **Exhibit 3.2**.



(Source: Data furnished by sampled hospitals/PHCs)

- The percentage of increase of OP cases with respect to the previous year at the State level fell from eight *per cent* in 2017-18 to five *per cent* in 2018-19 and 2.3 *per cent* in 2019-20. The percentage of OP cases in tertiary sector continued to be subdued during 2016-20 and fell sharply during 2020-21.
- During 2020-21, OP numbers declined due to the COVID-19 pandemic. However, reduction in tertiary care OPs during 2017-18 and secondary care OPs during 2019-20 was also noticed.

3.1.2 Availability of Outpatient Departments in sampled Medical College Hospitals

The Government Medical Colleges, Teaching Institutions and the Hospitals attached to them are managed by the Directorate of Medical Education. The Government Medical College Hospitals (GMCH) ensure effective and accessible tertiary care for treatment of diseases and provision for health services. The details of OPD specialty services in the sampled GMCHs, as of January 2024, is given in **Appendix 3.1**.

Out of 45 speciality OPD services available in the sampled GMCHs, their availability ranged from 13 (Erode) to 34 (Thanjavur).

3.1.3 Availability of OPD services in District Headquarters hospitals in the State

The Secondary care hospitals provide a critical link between the primary and tertiary care facilities. The details of specialist OP services provided in the sampled DHQs and non-sampled DHQs, as of January 2024, are given in **Appendices 3.2 and 3.3** respectively.

Out of 20 speciality OPD services available in the sampled DHQs, their availability ranged between 10 (Perambalur) and 14 (Kumbakonam).

3.1.4 Availability of OPD services in the sampled Taluk and Non-Taluk Hospitals

The Sub-district (Sub-divisional) hospitals¹ are below the district and above the block level hospitals and act as First Referral Units for the Tehsil/Taluk/block population in which they are geographically located. They are the First Referral Units in providing emergency obstetrics care and neonatal care and help in bringing down the Maternal Mortality and Infant Mortality. They form an important link between Sub-centres, PHC and CHC on one end and District Hospitals on the other end. It also saves the travel time for the cases needing emergency care and reduces the workload of the district hospital. The availability of OPD services in the sampled TKHs and NTKHs are given in **Appendix 3.4**.

Among the 15 speciality OPD services, their availability varied within the sampled TKHs, ranging from two (Kurai) to 12 (Bhavani). In sampled NTKHs, the range was from four (Thirukkattupalli) to eight (Velayuthapalayam).

- The Obstetrics and Gynaecology OPD was not available in four² HCFs.
- The OPD for General surgery and Orthopaedics was being conducted only once a month in NTKH, Velayuthapalayam.

¹ In Tamil Nadu, these hospitals are known as Taluk and Non-Taluk Hospitals.

² TKHs at (i) Kurai and (ii) Orathanadu; NTKHs at (iii) Thanipadi and (iv) Thirukkattupalli.

- The Psychiatric OPD was being conducted monthly once³ and twice⁴ at two NTKHs each while it was not available at NTKH, Kavindapadi.

During JPV (January 2024) at TKH, Andipatti, Audit observed the following:

- Although ENT specialist was posted, the ENT equipment was not available. The Chief Civil Surgeon of the hospital stated that the supply for instruments were being regularly requested for from the JDHS of the district.
- The Dental Chair and other equipment are available. But the post of Dentist is vacant from June 2021. The Chief Civil Surgeon of the hospital stated that the dental related patients are referred to other HCFs.

3.1.5 Availability of OPD services in the sampled Block PHCs

The Community Health Centres (CHCs) constitute the secondary level of healthcare. CHCs were designed to provide referral as well as specialist healthcare to the rural population. Unlike Sub-centre and PHCs, CHCs have been envisaged as only one type and will act both as Block level health administrative unit and gatekeeper for referrals to higher level of facilities. The availability of OPD services in the sampled Block PHCs is given in **Appendix 3.5**.

Essential services like Pharmacy, Emergency/Treatment Room⁵, Laboratory and AYUSH were available in all 10 sampled Block PHCs. However, only four⁶ Block PHCs had specialist OPD services.

3.1.6 Availability of OPD services in the sampled PHCs

A Primary Health Centre is the cornerstone of rural health services - a first port of call to a qualified doctor of the public sector in rural areas for the sick and those who directly report or referred from Sub-centres for curative, preventive and promotive healthcare. The availability of OPD services in the sampled PHCs⁷ is given in **Appendix 3.6**.

Essential services like 24-hour Emergency services, Family Welfare services, Pharmacy, Emergency and Laboratory were available in all sampled PHCs. However, only two⁸ PHCs had speciality OPD services.

3.1.7 Evaluation of outpatient services through outcome indicators

National Health Mission (NHM) Assessor's Guidebook for Quality Assurance envisaged the evaluation of services provided in an OP department through outcome indicators including the number of OP cases attended by a doctor and average consultation time taken by the doctor for diagnosing the outpatient.

³ Thanipadi and Thirukkattupalli.

⁴ Chinnamanur and Velayuthapalayam.

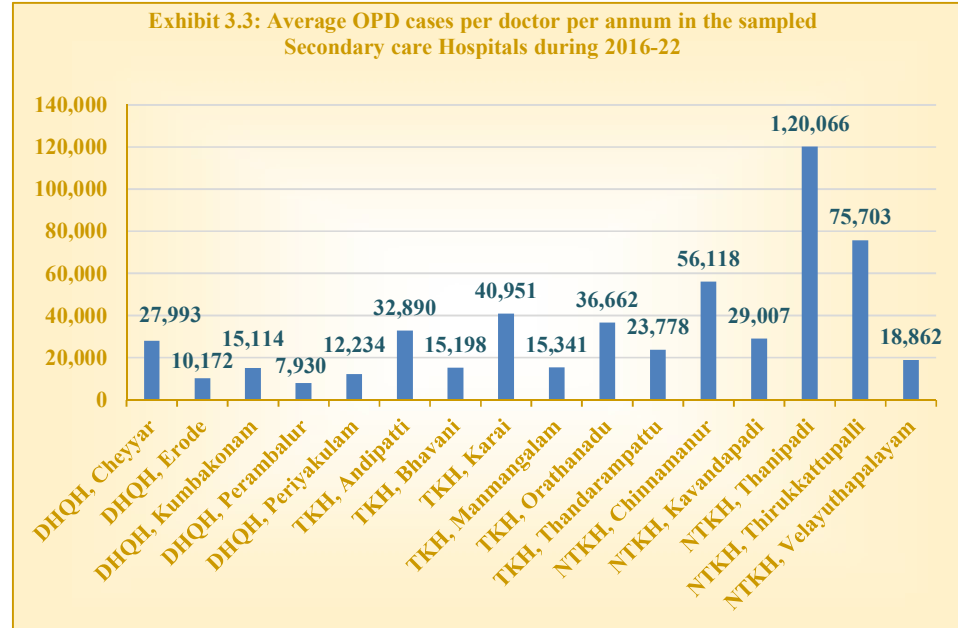
⁵ Emergency room/casualty is not available in Chennimalai and Modakuruchi.

⁶ Chinnadharapuram, Modakuruchi, Karapattu and Vettavalam.

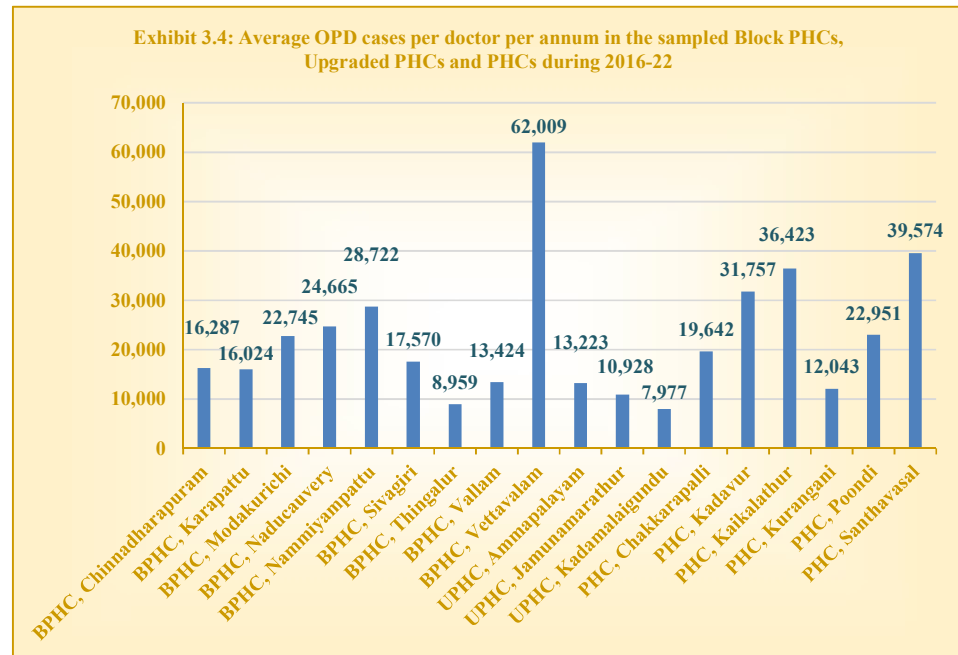
⁷ Includes Upgraded PHCs, Rural PHCs and Urban PHCs.

⁸ Kaikalathur and Santhavasal.

The total number of OPD cases, the average annual number of OPD cases and the average number of OPD cases per doctor per day during 2016-22 at the sampled HCFs⁹ are given in **Appendix 3.7**. The average OPD cases per doctor per annum in the sampled secondary care hospitals and all types of PHCs during the period 2016-22 is given in **Exhibits 3.3, 3.4** and **3.5** respectively.

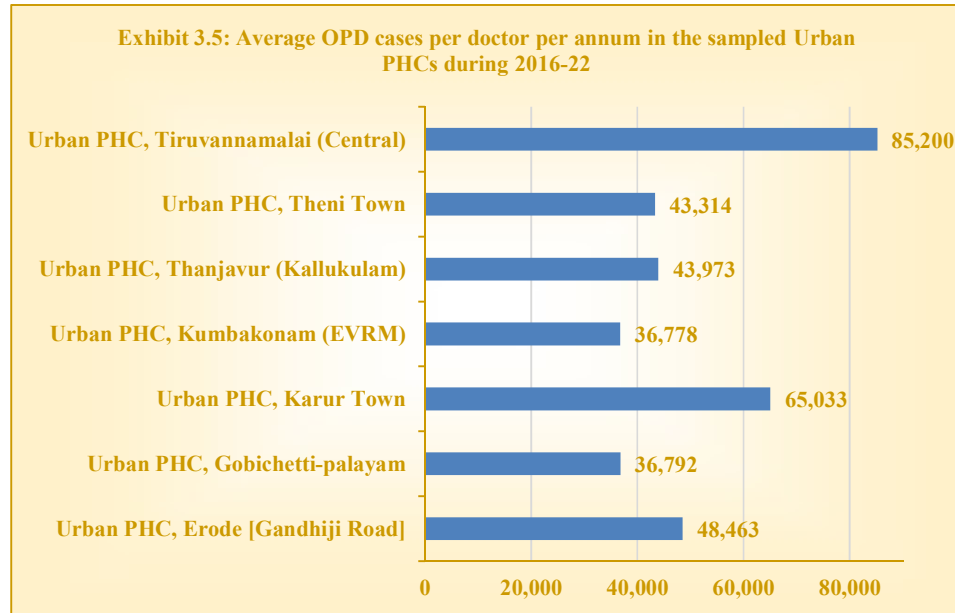


(Source: Details furnished by the respective Secondary Care Hospitals)



(Source: Details furnished by the respective PHCs)

⁹ Except MCHs.



(Source: Details furnished by the respective Urban PHCs)

As seen from the **Exhibits 3.3 to 3.5** and **Appendix 3.7**, the average OPD cases per doctor per day in various types of sampled HCFs is as follows:

- In Secondary care hospitals, the range was from 22 in DHQH, Perambalur to 329 in NTKH, Thanipadi.
- In Block PHCs, the range was from 25 in Block PHC, Thingalur to 170 in Block PHC, Vettavalam.
- In PHCs, the range was from 22 in Urban PHC (UPHC), Kadaimalaigundu to 108 in PHC, Santhavasal.
- In Urban PHCs, the range was from 101 in Gobichettipalayam to 233 in Tiruvannamalai (Central).

3.1.8 Non-availability of basic facilities

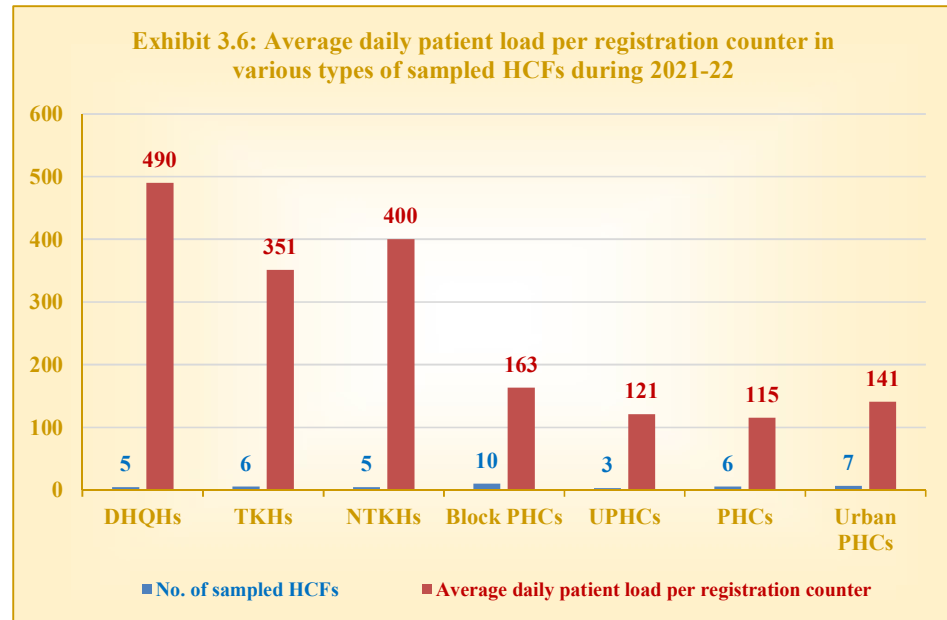
(a) Registration counters

Availability of sufficient number of registration counters, in proportion to the OP load, aids in faster issue of OP tickets, thereby avoiding long queues of patients at these counters. Out of 42 sampled Secondary and Primary care HCFs, 26 HCFs had only one registration counter. In the remaining sampled HCFs, the number of registration counters ranged between two and four.

Survey finding: In DHQ hospital, Erode and Tiruvannamalai, 31 out of 131 beneficiaries (24 per cent) surveyed by audit expressed that the number of registration counters was grossly inadequate.

Out of 366 outpatients surveyed by Audit, 30 (8.2 per cent) expressed that it took 15 minutes to one hour for OP registration.

The average daily patient load per registration counter in various types of HCFs is given in **Exhibit 3.6** and the average daily patient load per registration counter for all sampled HCFs (except sampled MCHs) during the year 2021-22 is given in **Appendix 3.8**.



(Source: Details furnished by the respective HCFs)

As seen from **Exhibit 3.6**, the patient load per registration counter is more in the secondary care hospitals thereby necessitating opening of more counters to reduce the waiting time for the OPD patients. Thus, non-availability of adequate number of registration counters in proportion to the patient load had resulted in longer queues and longer waiting times.

GoTN accepted (August 2022) the audit findings and directed HCFs to increase the number of registration counters.

(b) Hospital building - Planning and layout

As per IPHS guidelines, the HCFs should have adequate signage indicating access to various facilities at strategic points in the Hospital for guidance of the public. The numbers and percentage of sampled 42 secondary and primary care HCFs where adequate signage was not available in their premises are given in **Table 3.1**.

Table 3.1: Non-availability of adequate signage in the sampled HCFs

Sl. No.	Availability of signage	Not available in sampled HCFs (except MCHs)						Total (In per cent)
		DHQH	TKH	NTKH	BPHC	UPHC and PHC	Urban PHC	
Sampled HCFs		5	6	5	10	9	7	42
1	Signage indicating access to various facilities at strategic points in the Hospital for guidance of the public	0	0	0	3	0	0	3 (7)
2	Citizen Charter at OPD and Entrance - in Tamil	0	1	1	1	1	0	4 (10)
3	Hospital Layout map at entrance	0	2	4	6	3	0	15 (36)
4	Directional signages for Emergency and all the Departments and Utilities	0	0	1	4	1	0	6 (14)
5	Florescent Fire Exit plan at each floor	1	1	4	4	3	1	15 (33)
6	Safety, Hazard and caution signs displayed prominently at relevant places	0	0	1	4	0	1	6 (14)
7	Display of important contacts like higher medical centres, blood banks, fire department, police and ambulance services available in nearby area.	0	0	1	3	1	0	5 (12)
8	Display of mandatory information (under RTI Act, PNDT Act, MTP Act etc.).	0	0	2	2	2	1	7 (17)

(Source: Details furnished by the sampled HCFs)

(c) Availability of basic amenities in Outpatient Department

As per IPHS Guidelines, the facility shall be planned keeping in mind the maximum peak hour patient load and shall have the scope for future expansion. OPD shall have approach from main road with signage visible from a distance. Waiting room/space with seating arrangement for patients to wait for their turn to see the doctors, toilets, drinking water, etc., are some of the basic facilities to be provided at OP department in Government HCFs. The non-availability of these facilities is given in **Table 3.2**. A couple of illustrative photos are given as **Exhibits 3.7** and **3.8**.

Table 3.2: Non-availability of certain basic amenities in the OPD of sampled HCFs

Sl. No.	Availability of basic amenities in OPDs	Not available in sampled HCFs (except MCHs)						Total (In per cent)
		DHQH	TKH	NTKH	BPHC	UPHC and PHC	Urban PHC	
Sampled HCFs		5	6	5	10	9	7	42
1	Reception and Enquiry: Enquiry/May I Help desk shall be available with competent staff fluent in local language.	0	0	1	2	0	0	3 (7)
2	Adequate waiting area with seating facility with fans/coolers	0	1	0	1	0	0	2 (5)
3	Patient amenities like Potable drinking water, Functional and clean toilets with running water and flush.	0	0	0	0	0	0	0 (0)
4	Patient calling systems (Manual/Digital).	1	3	1	2	2	1	10 (24)

(Source: Details furnished by the sampled HCFs)

Exhibit 3.7: Unclean toilet at Urban PHC, Vettavalam



(Source: Joint Physical Verification)

Exhibit 3.8: OP counter functioning under asbestos sheet at Urban PHC, Modakuruchi

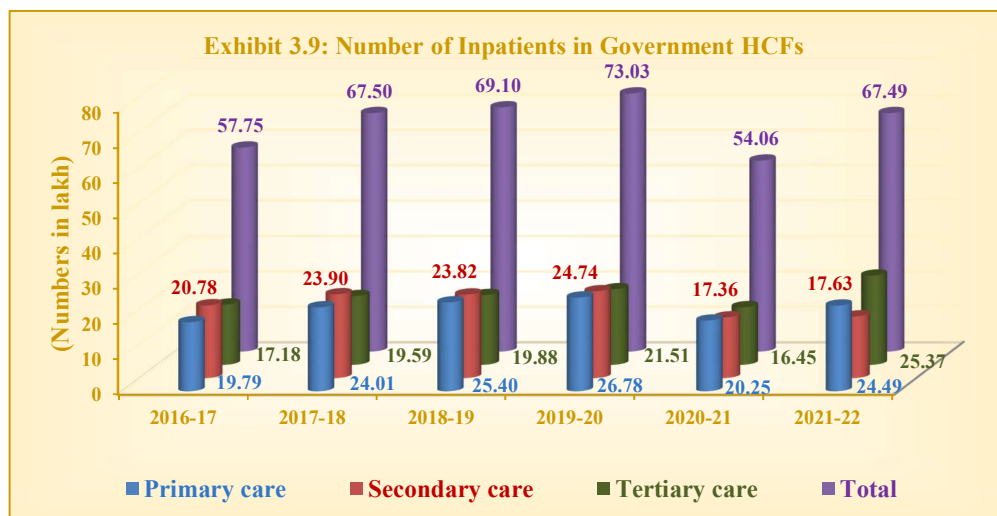


Non-availability of basic amenities in OP department clearly indicated that the infrastructural facilities were not adequate to provide decent services to the public. The facts were further confirmed by the patient's survey conducted during Audit.

3.2 Inpatient Department Services

3.2.1 Inpatient services in the State

The inpatient details under primary, secondary and tertiary care services in the State during 2016-17 to 2021-22 is shown in **Exhibit 3.9**.



(Source: Details furnished by Directorates)

3.2.2 Availability of beds in sampled Medical College Hospitals

As per MCI norms¹⁰, a fully functional teaching hospital attached with Medical Colleges with 100 and 150 MBBS admissions, should have a minimum of 300 and 700 beds respectively. Audit observed that the authorised bed strength

¹⁰ Minimum standard requirements for the Medical College for 100/150 admissions annually regulations, 1999.

of all sampled GMCHs is higher than that stipulated by MCI. The authorised bed strength and the actual number of beds available are given in **Table 3.3**.

Table 3.3: Authorised bed strength and number of beds available in sampled MCHs

Sl. No.	Location of the Government MCH	Number of MBBS seats ¹¹	Bed strength			Surplus	
			Required as per MCI	Authorised by the State	Available	No.	In per cent
1	Erode	100	300	510	1,080 ¹²	780	260
2	Karur	150	700	700	1,200	500	71
3	Thanjavur	150	700	1,466	1,478	778	111
4	Theni	100	300	876	1,126	826	275
5	Tiruvannamalai	100	300	740	1,003	703	234

(Source: Details furnished by the respective GMCH)

As seen from **Table 3.3**, all the sampled GMCHs have beds available more than the authorised strength, the surplus ranging from 71 per cent (Karur) to 275 per cent (Theni).

3.2.3 Availability of wards and beds in sampled District Headquarters hospitals

As per IPHS norms, the Inpatient Department shall be categorised into various wards¹³. Further, as per need and infrastructure, the hospital is to have other¹⁴ wards. The types of wards and the number of beds available in these wards in the sampled DHQs are given in **Appendix 3.9**.

Audit observed that all sampled DHQs have beds for major specialities like Medical, Surgical, Maternity, Paediatric etc. However, burns ward was not available in three¹⁵ DHQs.

3.2.4 Inadequate bed strength in ICU in sampled DHQs

IPHS norms prescribed that up to 10 per cent of total bed strength of the hospital should be made available in ICU of the DHQs. The availability of ICU beds against the IPHS is shown in **Table 3.4**.

Table 3.4: ICU beds available in sampled District Headquarters hospitals

Location of DHQH	Total Bed strength	ICU beds as per IPHS Norms	ICU beds available	Shortage	Shortfall of ICU beds (In per cent)
Cheyyar	226	23	8	15	65
Kumbakonam	774	77	50	27	35
Perambalur	477	48	6	42	88
Periyakulam	296	30	6	24	80

(Source: Details furnished by the respective sampled DHQH)

¹¹ In the Medical Colleges to which the sampled GMCHs are attached.

¹² The Dean of GMCH, Erode stated (January 2024) that 180 beds are not being used due to very old buildings and roof leakage.

¹³ Male Medical ward; Male surgical ward; Female Medical ward; Female surgical ward; Maternity ward; Paediatric ward; Nursery and Isolation ward.

¹⁴ Emergency ward/trauma ward; Burn ward; Orthopaedic ward; Post-operative ward; Ophthalmology ward; Malaria ward; Infectious Disease ward and Private ward (if required).

¹⁵ Cheyyar, Perambalur and Periyakulam.

As seen from **Table 3.4**, in four out of five sampled DHQs, the number of ICU beds did not meet the prescribed IPHS norm, and the shortfall in bed strength ranged from 35 *per cent* to 88 *per cent* which hampered the ICU services.

During JPV of sampled hospitals, it was seen that NTKH, Chinnamanur, and TKH, Manmangalam, having 54 and 60 beds respectively, did not have designated ICUs and had makeshift arrangements without adequate equipment for treating patients requiring intensive care (**Exhibits 3.10** and **3.11**).

Exhibit 3.10: ICU in non-Taluk hospital, Chinnamanur functioning at a Veranda



(Source: Joint Physical Verification)

Exhibit 3.11: ICU in Taluk hospital, Manmangalam functioning at General Ward



3.2.5 Shortage of Operation Theatres

As per IPHS norms for District hospitals, there should be one Operation Theatre (OT) for every 50 general beds and every 25 beds in surgical wards. The shortage of OTs in the sampled DHQs is given in **Table 3.5**.

Table 3.5: Shortage of operation theatres

Location of the DHQH	Bed strength	Number of OTs required	Number of OTs available	Shortage of OTs	Shortfall (In per cent)
Cheyar	226	5	4	1	20
Erode	725	14	4	10	71
Kumbakonam	774	15	3	12	80
Perambalur	477	10	4	6	60
Periyakulam	296	6	5	1	17

(Source: Details furnished by sampled DHQs)

DHQs in Erode, Kumbakonam and Perambalur had severe shortage of OTs and hence the available infrastructure was over-stretched with an average of more than five surgeries per OT per day. Surgeries were scheduled only on day-to-day basis in DHQs at Cheyyar and Erode due to non-availability of adequate number of OTs and the need to prioritise emergency cases.

Thus, Audit observed that the shortage of OTs and the consequent overloading of surgery cases in the available OTs is fraught with the risk of compromising with the medical care to patients requiring surgeries on urgent basis.

3.2.6 Availability of inpatient wards and beds in the sampled TKHs and NTKHs

The details of availability of inpatient wards in the sampled TKHs and NTKHs and the number of beds available in these wards are given in **Appendix 3.10**.

Audit observed that:

- Except in two¹⁶ TKHs, burns ward was not available in the remaining sampled TKHs/NTKHs.
- Except in three¹⁷ HCFs, surgical wards were not available in the remaining TKHs/NTKHs.
- In TKH, Karai, the Paediatric and Post-operative wards had no cots but were only provided with six and two mattresses respectively.

3.2.7 Availability of beds in sampled PHCs with Maternity and Child care

The availability of beds, labour room and OT for Vasectomy and Tubectomy in the sampled PHCs, are given in **Appendix 3.11**.

Audit observed the following:

- In BPHC, Naducauvery, against a sanctioned bed strength of 30, only 23 are available and the rest are damaged.
- In PHC, Kaikalathur, against a sanctioned bed strength of six, only two beds are in use due to insufficient space. Further, the PHC does not have a Labour room.
- In PHC, Kurangani, against a sanctioned bed strength of six, only four are available.
- In 12 PHCs, the OT is not available for conducting Vasectomy and Tubectomy operations.
- In BPHC, Nammiyampattu, the existing OT is not functional.

3.2.8 Availability of Isolation Wards

The availability of Isolation Wards, both positive and negative isolation wards, in the sampled Secondary care HCFs are given in **Appendix 3.12**. In the sampled 16 Secondary care HCFs, eight (50 per cent) did not have any Isolation ward.

¹⁶ Andipatti and Thandarampattu.

¹⁷ TKHs at Andipatti, Bhavani; NTKH, Kavandapadi.

3.2.9 Availability of surgical procedures and surgery load per surgeon in the sampled HCFs

Services rendered by doctors in terms of number of consultations and surgeries could be an effective indicator of the performance of the doctors. It was, however, seen that Government HCFs of the State did not utilise HMIS to assess the performance of doctors with reference to specific indicators although it had features to capture doctor-wise performance. However, the same was not functional in the sampled HCFs.

The availability of surgeons, the various types of surgical procedures carried out and the average number of surgeries carried out by surgeons in the sampled Secondary care hospitals during the period 2016-22 is given in **Appendix 3.13**.

Audit observed that while the sampled DHQs¹⁸ had adequate surgeons posted and surgeries conducted in major specialties¹⁹, the sampled TKHs/NTKHs had surgeons posted for only one or two specialties.

3.2.10 Evaluation of inpatient services through Outcome Indicators

To provide a comprehensive abstract on the IPD services provided by the sampled Secondary and Tertiary care hospitals, outcome indicators like Bed occupancy rate, Bed turnover rate, Discharge rate, referral out rate, length of stay, LAMA²⁰ rate and absconding rates were collated. The average rates of these outcome indicators for the period 2016-22 is given in **Appendix 3.14**.

Audit observed that the number of patients who had left against medical advice or were absconding were higher in the sampled GMCHs.

3.3 Emergency services

3.3.1 Availability of Emergency services in sampled Secondary care Hospitals

The IPHS guidelines for secondary care hospitals²¹ stipulate the norms for 'Accident and Emergency Services' that should be available in these hospitals. The details of facilities available in the 16 sampled secondary care hospitals are given in **Appendix 3.15**.

Audit observed the following:

- Six²² HCFs do not have 24x7 operational emergency with dedicated Emergency room with adequate manpower.
- In nine²³ HCFs, the 'Emergency Block' does not have mobile X-ray/laboratory, side labs/plaster room/and minor OT facilities.

¹⁸ Except DHQH, Erode.

¹⁹ ENT, General surgery, Obstetrics and Gynaecology, Ophthalmology, Orthopaedics and Dental.

²⁰ Left against medical advice.

²¹ IPHS Guidelines for District Hospitals and Sub-District/Sub-Divisional Hospitals.

²² Three TKHs (Andipatti, Manmangalam and Thandarampattu) and three NTKHs (Chinnamanur, Kavandapadi and Thirukkattupalli).

²³ Four TKHs (Andipatti, Karai, Manmangalam and Thandarampattu) and five NTKHs (Chinnamanur, Kavandapadi, Thanipadi, Thirukkattupalli and Velayuthapalayam).

- Separate emergency beds are not provided for in three²⁴ HCFs.
- The Emergency Block in certain HCFs does not have Cardiac Monitor with Defibrillator (seven²⁵ HCFs), Multiparameter Monitor (two²⁶ HCFs) and Ventilator (six²⁷ HCFs).

3.3.2 Availability of Emergency services in sampled Block PHCs

The IPHS guidelines for ‘Community Health Centres’ stipulate the norms for availability of ‘Care of routine and Emergency cases’ in Surgery and Medicine. The availability of these services in the 10 sampled Block PHCs are given in **Appendix 3.16**.

Audit observed the following:

- None of the sampled Block PHC had the facility to handle emergencies like Intestinal Obstruction, Haemorrhage, etc.
- Except in two²⁸ Block PHCs, facilities for fracture reduction and putting splints/plaster cast were not available.
- Three²⁹ Block PHCs did not have the facility to handle burns cases.

3.3.3 Availability of 24-hour Emergency services in sampled PHCs

The IPHS guidelines for ‘Public Health Centres’ stipulate the norms³⁰ for availability of ‘24-hour emergency services’ in PHCs. Audit observed that all the stipulated services were available in all the sampled PHCs.

3.3.4 Emergency care through Government HCFs

Tertiary care hospitals, secondary care hospitals and Block PHCs provide 24-hour services including emergency care services. The types of emergency services available in them were not uniform, with the tertiary care hospitals having a wide range of services and the Block PHCs having only a limited number of services.

To standardise, streamline and strengthen the emergency care network in the State, GoTN started Tamil Nadu Accident and Emergency Care Initiative (TAEI) in 2017. TAEI aims to bring together all the emergency medical services encompassing management of six³¹ emergencies. The Managing Director, NHM is designated as ex-officio Commissioner of Trauma Care in the State.

²⁴ Two TKHs (Karai and Manmangalam) and NTKH, Kavandapadi.

²⁵ TKHs at Andipatti, Karai, Manmangalam and Thandampattu; NTKHs at Chinnamanur, Kavandapadi and Thirukattupalli.

²⁶ NTKHs at Kavandapadi and Thirukattupalli.

²⁷ TKHs at Andipatti and Karai; NTKHs at Chinnamanur, Kavandapadi, Thanipadi and Thirukattupalli.

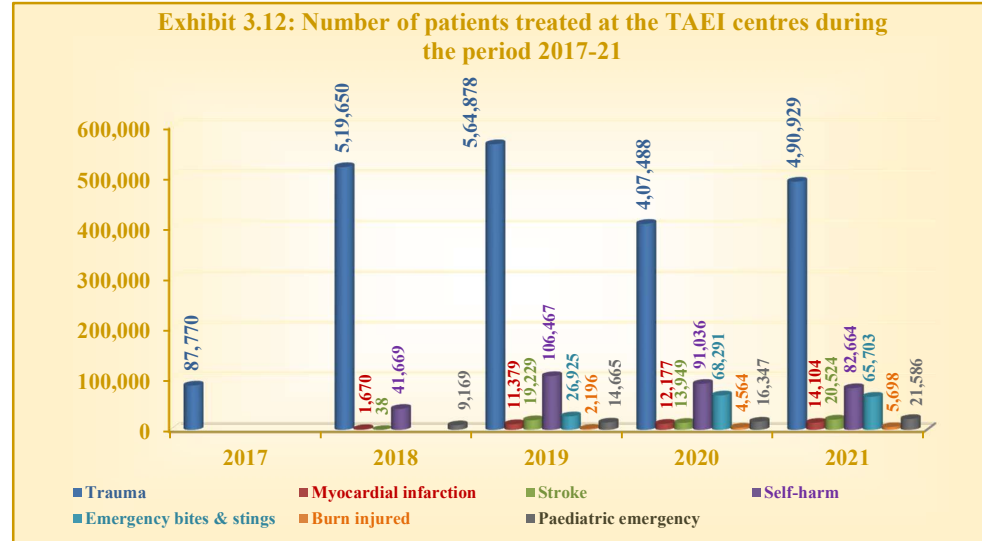
²⁸ Chennimalai and Chinnadharapuram.

²⁹ Chennimalai, Naducauvery and Vallam.

³⁰ Management of injuries and accident; First aid; Stitching of wounds; Incision and drainage of abscess; Stabilisation of patient; Dog/Snake/Scorpion bites and Medical Officer on call basis.

³¹ Management of (i) Stroke, (ii) Myocardial infarction (MI), (iii) Trauma (including Road Traffic Accidents), (iv) Burns, (v) Poison and (vi) Paediatric emergencies and other life-threatening conditions.

As of March 2022, 86 TAEI centres have been established across the State in 39 DME Institutions, 20 DHQs and 27 Sub-District Hospitals located in strategic locations along the Highways. The performance of these TAEI centres during the period 2017-21 is given in **Exhibit 3.12**.



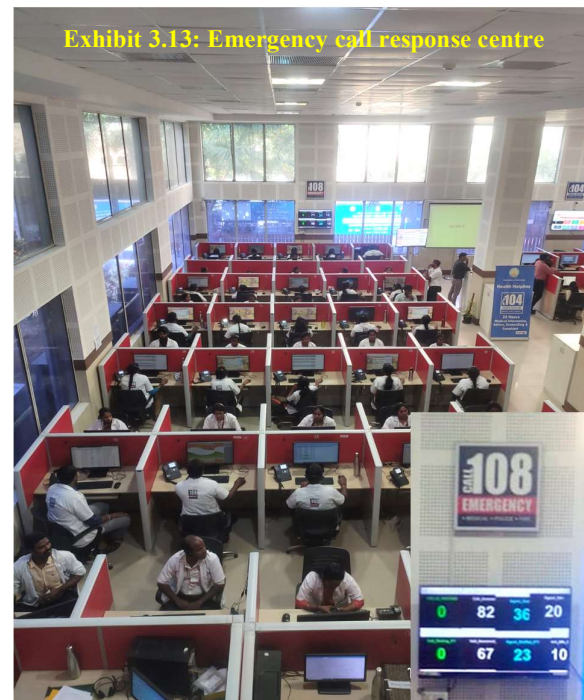
(Source: Policy Note of HFW Department 2022-23)

Audit found that the number of patients treated at these centres increased significantly during 2018 and 2019 but fell sharply during 2020 and 2021.

3.3.5 '108' Emergency Ambulance Services

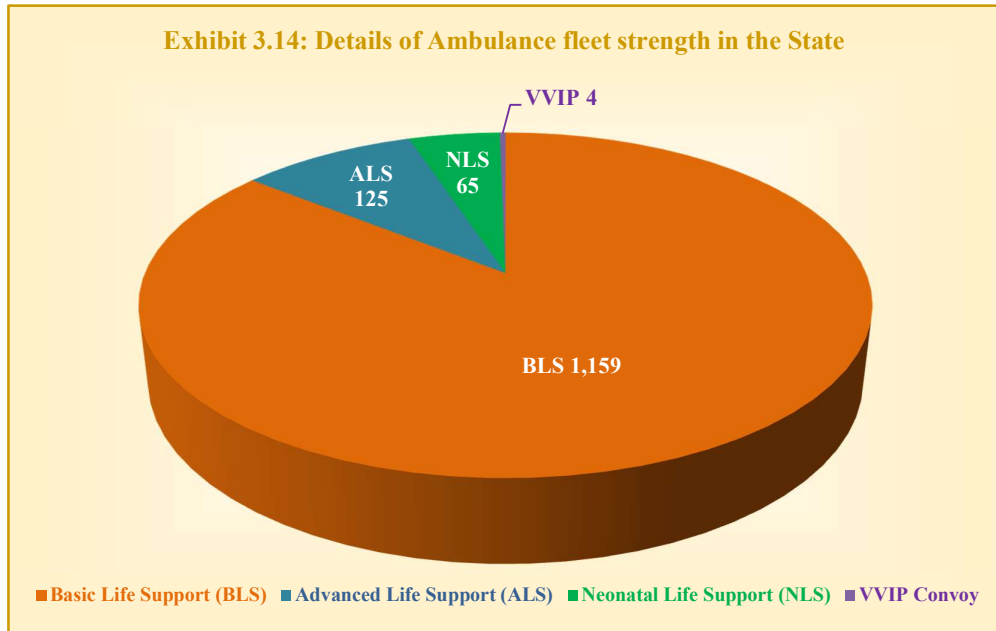
In September 2008, through a Memorandum of Understanding (MoU) with the Emergency Management Research Institute (EMRI), Hyderabad, GoTN launched the Free '108 Ambulance' services. The MoU was subsequently extended in July 2013, April 2019 and February 2020. The district-wise distribution of ambulances, EMTs and Pilots are given in **Paragraph 2.9**.

The '108 Ambulance' service aims at reaching the patients/sites within 20 minutes to shift the patient to the nearest hospital. The emergency transportation through ambulance is free. This service is managed by the Emergency Call Response Centre, functioning at Chennai (**Exhibit 3.13**).



(Source: Photograph taken by Audit team during joint physical verification)

As of March 2022, the State had a fleet strength of 1,353 ambulances and 41 First Responder Bike Ambulances, the details of which are given in **Exhibit 3.14**.



(Source: HFW Policy Note 2022-23)

GoTN, while issuing (February 2020) orders for extension of ‘108 Ambulance’ services for a further period of two years, laid out an additional condition that suitable performance indicators be reviewed annually. Replying to a specific Audit enquiry in this regard, the Project Director (PD), Tamil Nadu Health System Project (TNHSP) stated (January 2023) that performance is reviewed, and due instructions are given periodically. The reply, however, was silent on the performance indicators which were stipulated to facilitate such a review. Audit found that neither the MoU nor PD, TNHSP had prescribed detailed performance indicators for the Ambulance services, except citing a standard response time of 20 minutes from the time of emergency call to reaching the scene. The data pertaining to each of the emergency calls attended by the ‘108 Ambulance’ services are captured electronically. Audit analysed 17.43 lakh ambulance call records pertaining to the year 2021, and observed the following:

3.3.5.1 Ambulances used for Inter-facility transfers and Emergency calls

Out of 17.43 lakh cases, 10.74 lakh calls were emergency calls (61.6 per cent), directly received from the public. The remaining 6.49 lakh calls (37.26 per cent) related to Inter Facility Transfer³² (IFT).

Out of 6.49 lakh IFT cases, the reasons stated for 5.52 lakh cases were ‘Non-availability of duty doctors/specialists/facility’. The reasons for the remaining cases were not recorded.

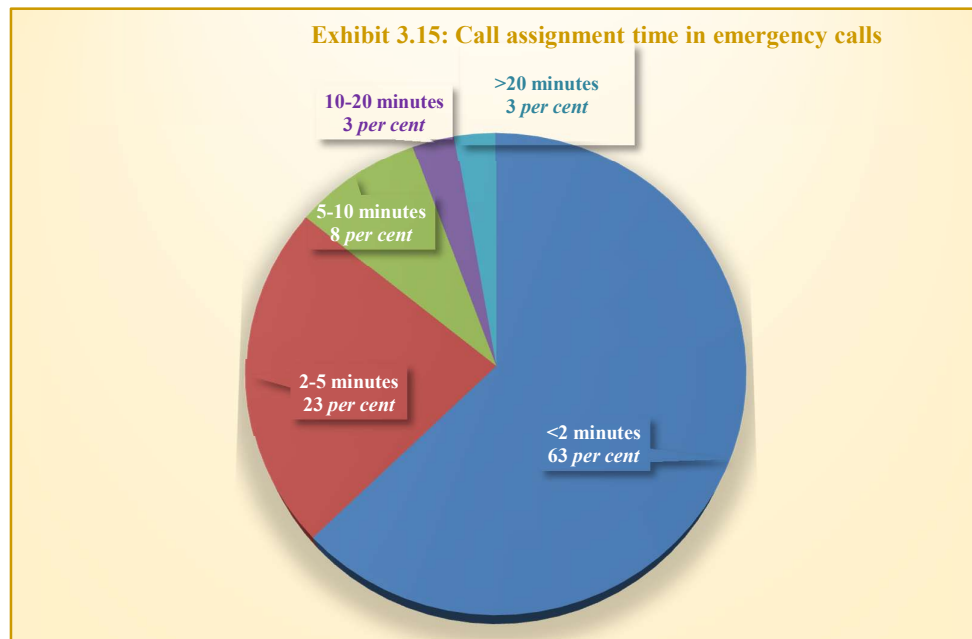
³² For transfer of patients from a lower healthcare facility like PHC to a higher hospital like DHQs/MCHs.

The ambulances are fitted with GPS to locate the site of emergency and to monitor the availability and mobility of the vehicle near the site of emergency. Data analysis revealed that GPS was not used in 2.75 lakh instances (25.6 per cent) out of 10.74 lakh emergency calls.

Although Audit could not analyse the reasons for non-usage of GPS in the ambulances, Audit observed that non-usage of GPS had resulted in non-availability of the details of ambulances that were in the vicinity of the accident/emergency site on a real-time basis.

3.3.5.2 Assignment of ambulance

EMRI has established '108 Ambulance' Control Rooms in Chennai and Pudukottai. Emergency calls are received in the Control Rooms and assigned to the nearest available ambulance team. Though GoTN has not prescribed any service level benchmark, EMRI strives to assign the calls to the ambulance team within 90 seconds of receipt of the call. Analysis of the call assignment time in emergency calls revealed that in 0.92 lakh cases (eight per cent), the time taken for assigning an ambulance was 5 to 10 minutes and in 0.60 lakh cases (six per cent), it took more than 10 minutes (**Exhibit 3.15**). Delay in assigning the ambulance invariably increases the response time.

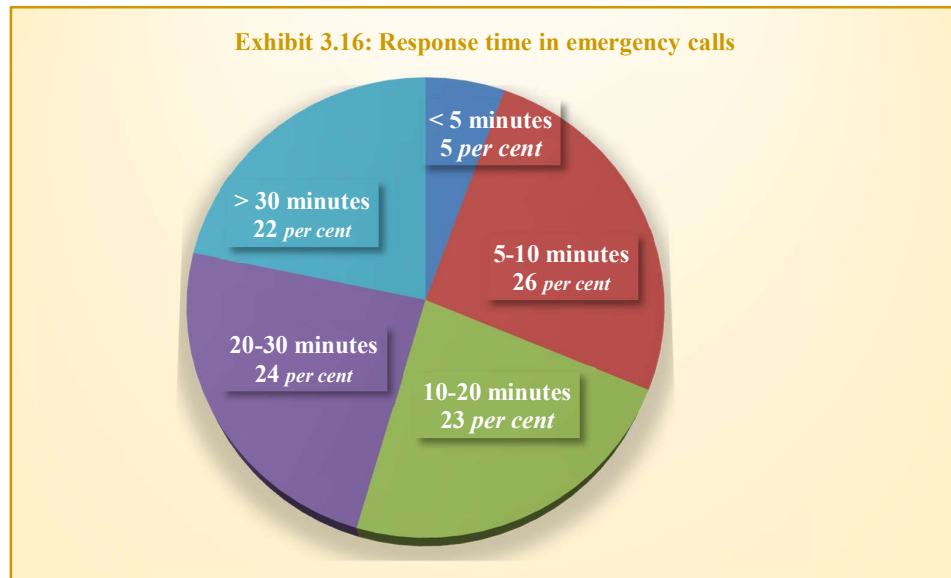


(Source: Analysis of '108 Ambulance' services data)

3.3.5.3 Response time of ambulance

Response time is the time taken by the ambulance to reach the scene. According to PD, TNHSP the average response time had significantly reduced from 19.22 minutes in 2016-17 to 14.24 minutes in 2020-21. Audit analysis of the data pertaining to 2021, however, revealed that in 2.56 lakh cases (24 per cent), the response time was between 20 to 30 minutes and more than 30 minutes in 2.33 lakh cases (22 per cent) (**Exhibit 3.16**). Thus, the service

benchmark of a response time of less than 20 minutes was not achieved in 46 per cent of the cases.



(Source: Analysis of '108 Ambulance' service data)

3.3.5.4 Distance covered by ambulance to reach the scene

Although the distance covered by the ambulance to reach the scene was up to 10 km in 78 per cent of the cases, the distance covered was 11-30 km in 19 per cent and more than 30 km in two per cent of cases. This shows that the ambulances need to be located at more strategic locations to reduce the distance covered and time taken by the ambulance to reach the scene.

3.3.5.5 Errors due to manual data

It was observed that a vehicle monitoring desk in the Control Room tracks whether the ambulance allotted to a call is on the move. It is noticed that the data relating to time or distance covered is manually updated by the Ambulance Team on completion of each stage. Audit observed several potentially inaccurate capturing of data regarding the time of arrival of ambulance at the scene and at the hospital, and the distance covered by the Ambulance. It was found that in 1,477 cases, the distance covered by the ambulance from the base to the scene was more than 100 km and in 4,671 cases the response time was more than five hours. Two illustrative cases of such data capturing errors are given in **Table 3.6**.

Table 3.6: Illustrative cases of erroneous data capture

Details	Case 1	Case 2
Call ID	20210003523445	20210003571052
District/Incident Location	Chennai/R8 Vadapalani Police Station, Arcot Road, Vadapalani	Villupuram/Arumpattu, Thiruvannainallur
Vehicle Location	FR - Vadapalani Police Station	Periyasevalai, Villupuram
Emergency Type/Subtype	Trauma (Vehicular)/2 Wheeler accidents	Acute Abdomen
Call Date	25-10-2021 16:04:58	30-10-2021 08:51:50
Call Assignment Time	25-10-2021 16:05:34	30-10-2021 08:53:19
Vehicle Departure Time	25-10-2021 16:06:34	30-10-2021 08:54:19
Scene Arrival Time	26-10-2021 10:06:00	30-10-2021 09:08:00
Response time (calculated)	18 hours 01 minute	16 minutes
Base Start/Scene Reach	18,320 km/18,321 km	2,96,601 km/2,96,797 km
Distance covered as per the information	1 km	196 km
Closure Remarks	victim conscious oriented vitals checked and first aid only given	victim conscious orientated vitals checked monitor non-critical shifted to hospital

(Source: Analysis of '108 Ambulance' service data)

In Case 1 shown in **Table 3.6**, the scene arrival time was updated after 18 hours. Similarly, in Case 2, the distance covered by the ambulance to reach the scene has been stated as 196 km, while the actual distance to the scene was verified as 6.4 km (between incident location and the vehicle location).

From the above, monitoring the vehicular movement solely based on manual update of each stage like scene arrival, scene departure, hospital reach etc., renders the monitoring unreliable. Relying on manual update of vital information such as above might lead to erroneous inference and affect monitoring.

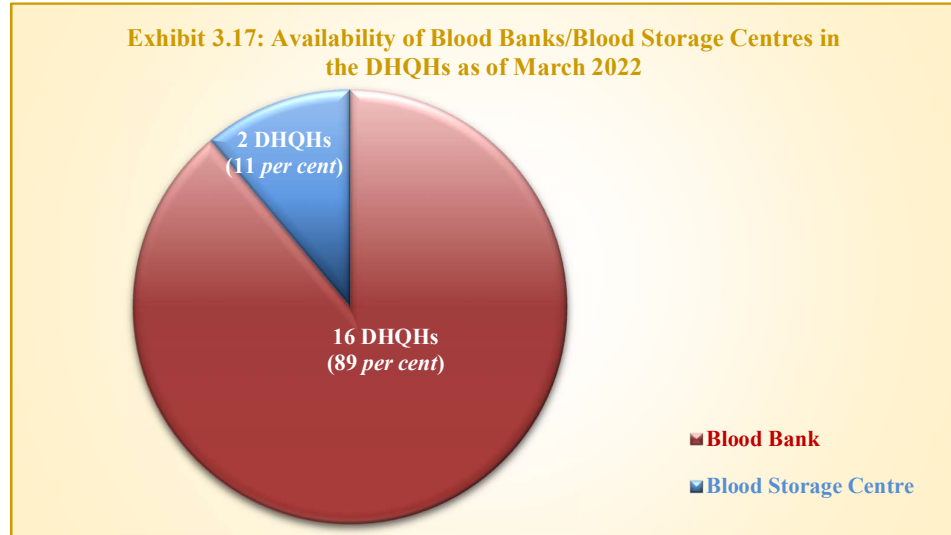
Recommendation 3:

Government should study the feasibility and implement a fully automated monitoring system for ambulance service by linking the vehicle position using GPS.

3.3.6 Blood Banks/Blood Storage Units

Primary and secondary HCFs are to be provided with blood storage facilities including blood storage refrigerators, deep freezers, microscope, centrifuges etc.

The availability of Blood Banks/Blood Storage Centres in all the DHQs, as of March 2022, is given in **Exhibit 3.17**.



(Source: Details furnished by DMRHS)

It is seen that out of 18 DHQs, Blood banks are available in 16 DHQs and Blood Storage Centres in the remaining two³³ DHQ.

In the sampled HCFs, Audit noticed that:

- Four³⁴ HCFs did not have any blood storage facilities.
- In four³⁵ HCFs, the supplied blood storage facilities were not used and kept idle.
- In two³⁶ and three³⁷ HCFs, the blood storage facilities are not being used due to non-availability of technician and unserviceability of a connected component respectively.

Thus, Audit observed that significant number of primary and secondary care HCFs were not equipped to meet emergencies.

3.4 Emergency response and Health System Preparedness Package

The COVID-19 pandemic caused serious impact on the healthcare networks of the State from March 2020 onwards. On 13 March 2020, GoTN declared COVID-19 as a notified disease under TN Public Health Act. The HFW Department spearheaded the State's response to COVID-19.

The following summarises GoTN's response and outcomes of COVID-19 as of 31 March 2022.

³³ Dharmapuri (Pennagaram) and Tiruvannamalai (Cheyyar).

³⁴ (i) TKH, Andipatti; NTKHs at (ii) Chinnamanur, (iii) Kavandapadi and (iv) Velayuthampalayam.

³⁵ TKHs at (i) Karai and (ii) Manmangalam and (iii) BPHC, Chinnadharapuram. UPHC, Kadamalaigundu.

³⁶ UPHCs at (i) Jamunamarathur, (ii) Modakuruchi.

³⁷ (i) TKH, Bhavani (no freezing facility); BPHCs at (ii) Sivagiri (chest frozen equipment not functioning) and (iii) Vettavalam (Blood cell counter not functioning).

Number of COVID-19 Test Centres	336 (69 Govt.+ 267 Private)
Total number of Tests done	6.56 crore
Number of persons tested	6.44 crore
Number of hospital beds	1,21,208 (includes private hospitals)
Number of Oxygen beds	40,126 (includes private hospitals)
Number of ICU beds	9,287 (includes private hospitals)

3.4.1 Fund utilisation under COVID-19 in the State

(A) GoTN mobilised funds from different sources, including its own funds, GoI funds, State Disaster Response Funds, PM CARES, CM Relief Fund, etc., for providing healthcare, treatment of persons, rehabilitation for persons affected by COVID -19 and for containment/prevention of spread.

The National Health Mission, Tamil Nadu (NHM) managed the funds released for containing COVID-19. The receipt and utilisation of COVID-19 funds are given in **Table 3.7**.

Table 3.7: Utilisation of funds under COVID-19

(₹ in crore)						
Year	Name of Scheme	GoI Share	State Share	Total	Expenditure	Balance
2019-20	COVID-19	48.24	32.16	80.40	72.45	7.95
2020-21	COVID-19	882.11*	--	882.11	828.89	53.22
2021-22	COVID-19	505.24	319.73	824.97	621.41	203.56
Total		1,435.59	351.89	1,787.48	1,522.75	264.73

* 100 per cent GoI share

(Source: Details furnished by NHM)

Audit found that as of 31 March 2022, ₹264.73 crore (15 per cent) out of ₹1,787.48 crore released to NHM was unspent, which included GoI share of assistance.

(B) TNMSC was involved in procurement of drugs, medicines, etc., for fighting COVID-19. The details of funds (both GoI and GoTN) released to TNMSC, utilised by TNMSC for supply of drugs, medicine, etc., are given in **Table 3.8**.

Table 3.8: Funds released to TNMSC and utilised for COVID-19

(₹ in crore)				
Year	Opening balance	Funds received	Expenditure	Balance (As on March 2022)
2019-20	0	467.64	467.64	NIL
2020-21	0	191.14	191.14	NIL
2021-22	0	424.23	424.23	NIL
Total		1,083.01	1,083.01	NIL

(Source: Details furnished by TNMSC)

3.4.2 Oxygen management

During the second wave of COVID-19, the provision of oxygen to the needy patients was to be effectively managed by increasing the oxygen storage and by procuring oxygen concentrators. GoI provided 4,689 oxygen concentrators of five litre per minute (LPM) capacity and 10 LPM capacity. The State also arranged the medical oxygen availability by procuring/installing containers and Pressure Swing Adsorption (PSA) Generators, oxygen concentrators. As of March 2022, a total of 23,020 oxygen concentrators were available in Government HCFs.

The details of oxygen concentrators allotted to the State by GoI under Emergency COVID Response Package (ECRP II) and PM CARES, is given in **Table 3.9** (as of August 2022).

Table 3.9: Details of Oxygen Concentrators allotted by GoI for management of COVID-19

Details	5 LPM	10 LPM	Total
Allocated by MoHFW to State	932	3,757	4,689
Allocated by State to Districts	932	3,757	4,689
Installed in Health facilities	932	3,610	4,542
Functional Oxygen Concentrators	931	3,609	4,540
Faulty Oxygen Concentrators	1	1	2

(Source: Details furnished by NHM)

Audit found that 147 out of the 3,757 oxygen concentrators of 10 LPM were not installed even as of March 2022.

3.4.2.1 Availability of Ventilators, Oxygen concentrators and Covid drugs in sampled Primary and Secondary HCFs

The availability of ventilators, oxygen concentrators and Covid drugs in the sampled MCHs, DHQHs, TKHs and NTKHs are given in **Table 3.10**, the details of which are given in **Appendix 3.17**.

Table 3.10: Availability of Ventilators, Oxygen concentrators and Covid drugs

Type of sampled HCF	Number sampled	Availability of					
		Ventilators				Oxygen concentrators	Covid drugs
		PM CARES	Other sources	Total	Under repair		
MCHs	5	192	516	708	7	333	3
DHQHs	5	71	122	193	0	42	1
TKHs	6	6	7	13	3	173	1
NTKHs	5	0	5	5	0	67	3
Total	21	269	650	919	10	1,967	8

(Source: Details furnished by the respective HCFs)

As seen from **Appendix 3.17**, in the 21 sampled HCFs, six³⁸ HCFs (29 per cent) do not have ventilators and 13 HCFs (62 per cent) do not have Covid drugs in their stock as of January 2024.

3.4.2.2 Non-functioning of oxygen generator

A Pressure Swing Adsorption (PSA) oxygen generator plant was purchased and installed (October 2021) at GMCH, Tiruvannamalai at a cost of ₹1.04 crore. The plant did not deliver oxygen as per standards and delivered only 80 per cent oxygen saturation, which could not be used for critically ill patients. The MCH referred the matter to TNMSC in June 2022, but no action was taken.

Similarly, a PSA oxygen generator was installed (October 2021) at DHQH, Cheyyar at a cost of ₹23.40 lakh. However, the plant was not used due to want of High Tension power supply as the generator plant faced frequent power fluctuations and the compressors used for the plant was also not functioning from June 2022.

As the PSA oxygen generator plants could not produce the required medical oxygen, the expenditure of ₹1.27 crore incurred towards their installation and commissioning became unfruitful.

3.4.3 Emergency procurement at higher rates

On 27 March 2020, GoTN exempted procurement of equipment and consumable, etc., medical care relating to COVID-19 by TNMSC from the ambit of Section 9 and 10 of TN Transparency in Tenders Act, 1998, which provides for open tender system. Therefore, TNMSC procured drugs, medicines and equipment for COVID care without open tenders. Rates were obtained from willing suppliers and orders were split among them based on the quantity offered by them within the desired timeframe.

Procurements during April to June 2020 were scrutinised.

Audit found that five suppliers had evinced interest to supply 15 lakh N-95 masks (code RC016) during April 2020. While the lowest quote was ₹42 per piece, the highest quote was ₹198.45 per piece. The quantity and rates quoted by different firms and quantity ordered to them are given in **Table 3.11**.

Table 3.11: Procurement of N-95 masks in April 2020

Supplier	Purchase order date	Quantity offered	Rate offered (In ₹)	Quantity ordered	Purchase order rate (In ₹)	Quantity supplied
Akshaya Impex, Chennai	Nil	1,00,000	152.25	0	0	0
Anitha Texcot, Tiruppur	02-04-2020	5,00,000	157.50	3,00,000	157.50	3,00,000
Hiren Pharma and Surgical, Chennai	02-04-2020	1,00,000	198.45	1,00,000	198.45	1,00,000
Rapha Technologies, Coimbatore	02-04-2020	10,00,000	147.00	5,00,000	147.00	5,00,000
Venus Safety and Health Pvt Ltd, Raigarh	01-04-2020	5,00,000	42.00	5,00,000	42.00	5,00,000

(Source: TNMSC files)

³⁸ Three TKHs (Andipatti, Karai and Orathanadu) and three NTKHs (Chinnamanur, Kavandapadi and Thirukkattupalli).

Analysis of the procurement disclosed that:

- Even though Rapha Technologies had offered to supply 10 lakh N-95 masks, the order quantity was limited to five lakh without recording any reason, consequently four lakh N-95 masks were procured from two other suppliers who had quoted much higher rate of ₹198.45 and ₹157.50.
- The Managing Director, TNMSC had approved the proposal to place an order for one lakh N-95 masks of Akshaya Impex, but no orders were placed, and no reasons recorded therefor.

It was observed that by not placing orders for the full offered quantity of 10 lakh N-95 masks on Rapha Technologies, TNMSC had incurred an avoidable excess expenditure of ₹82.95 lakh³⁹.

3.5 Maternity services

Safe pregnancy, childbirth and postpartum period are important milestones in the continuum of care for mothers to achieve optimal maternal and neonatal outcomes that have a significant impact on the future of mothers, children and families in the long run.

3.5.1 Maternal and Childcare in all DHQs

To provide definite emergency services for all pregnant women and Newborn, Comprehensive Emergency Obstetric and Newborn Care (CEmONC) Centres have been established in 93 Secondary care Hospitals and 36 Medical Colleges. These CEmONC centres provide 24x7 services and are equipped with Labour ward, Blood bank, Operation theatre and Newborn ward.

As of March 2022, the CEmONC centres are functioning in all DHQs in the State.

3.5.2 Maternal indicators of the State

The NFHS 5 survey (2020-21) has indicated that the services towards the Antenatal and Postnatal services in the State has improved when compared to NFHS 4 survey (2015-16), the details of which are given in **Table 3.12**.

Table 3.12: Maternal indicators of the State as per NFHS surveys

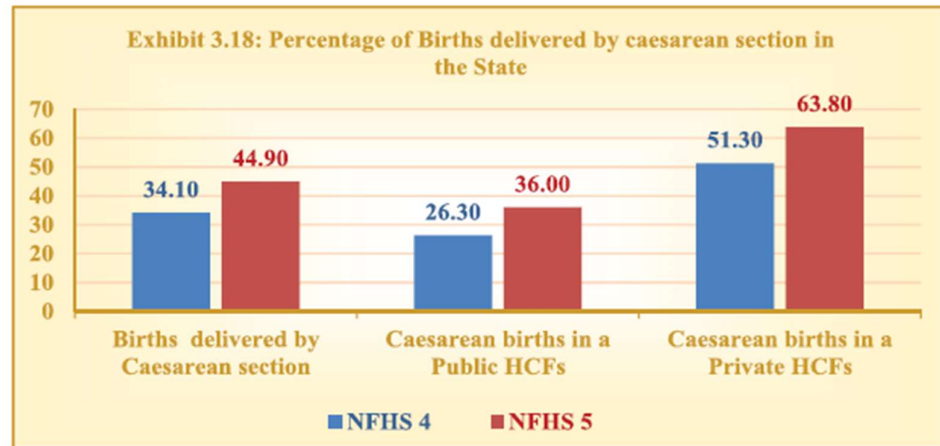
Indicators	(In per cent)	
	NFHS 4 (2015-16)	NFHS 5 (2020-21)
Mothers who had an antenatal check-up in the first trimester	64.00	77.00
Mothers who had at least four antenatal care visits	81.00	89.90
Mothers whose last birth was protected against neonatal tetanus	71.00	89.70
Mothers who consumed iron folic acid for 180 days or more when they were pregnant	40.10	63.10
Institutional births	98.90	99.60
Institutional births in public facility	66.70	66.90

(Source: NFHS 4 and 5)

³⁹ (3,00,000 x ₹10.50) + (1,00,000 x ₹51.45).

3.5.3 High proportion of Lower Segment Caesarean Section

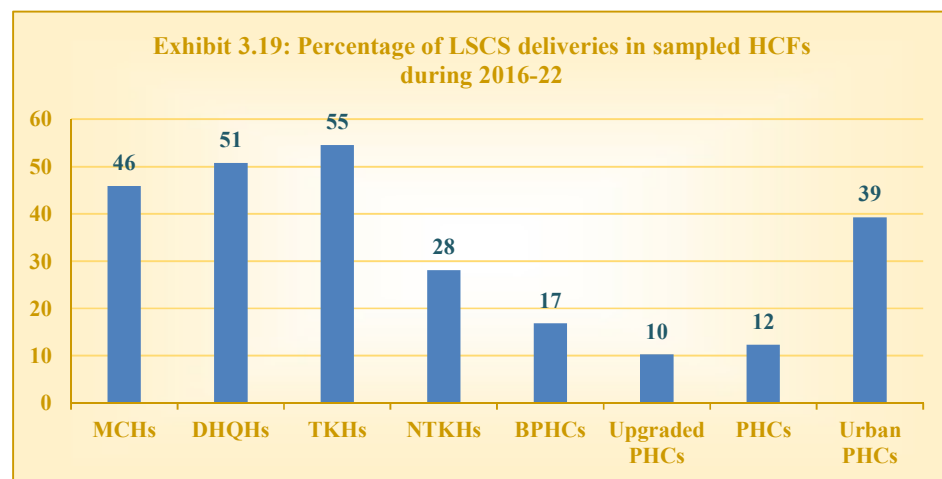
Lower Segment Caesarean Section (LSCS) is a surgical process carried out by the doctors when normal delivery is considered complicated or will put the mother or child at risk. NHM Guidelines has estimated that around 8 *per cent* to 10 *per cent* of deliveries may require LSCS. The details of births delivered by LSCS in the State is given in **Exhibit 3.18**.



(Source: NFHS 4 and 5)

It was, however, seen that as per NFHS-5, the percentage of LSCS to total deliveries in the State stood at 45 *per cent* against the national average of 21.5 *per cent*. The births that were delivered by caesarean section stood at 36 *per cent* in Government HCFs and 63.8 *per cent* in private facilities against the national averages of 14.3 *per cent* and 47.4 *per cent* respectively. It was seen that there was no system for Clinical Audit or Peer review of surgeries performed by doctors at Government HCFs.

In the sampled 47 HCFs, the overall percentage of deliveries through LSCS during 2016-22 was 46 *per cent*, as shown in **Exhibit 3.19**.



(Source: Details furnished by the respective sampled HCFs)

As seen from **Exhibit 3.19**, the percentage of LSCS deliveries ranged from 10 *per cent* in Upgraded PHCs to 55 *per cent* in TKHs.

Government replied (August 2022) that the high proportion was due to high-risk pregnancy cases. However, the reply was not based on statistics from conducting clinical audits/peer reviews.

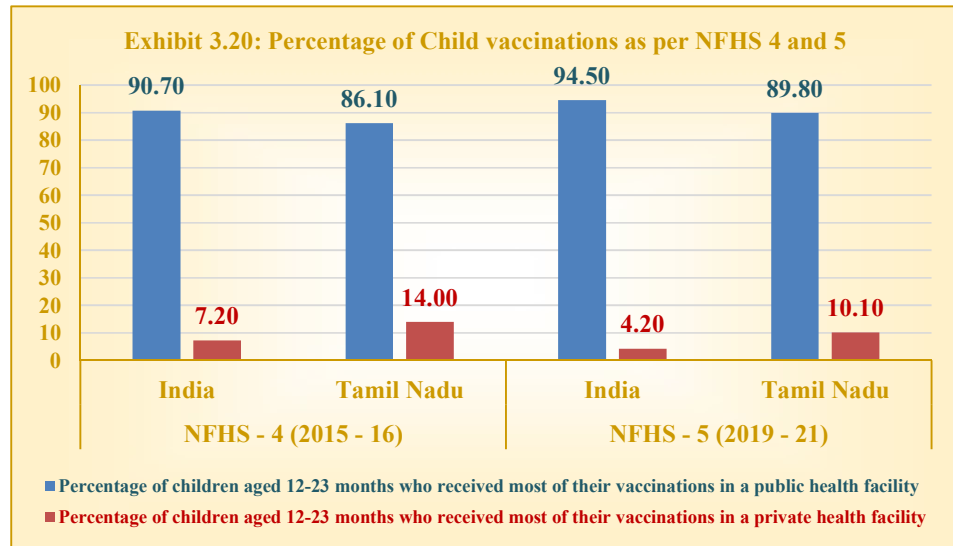
Recommendation 4:

Government should put in place a mechanism for clinical audit of the circumstances leading to the high proportion of LSCS deliveries in the HCFs.

3.5.4 Vaccination of birth doses to new-born

Immunisation, as an important and effective health intervention for children, has helped keep millions of children protected against infectious and life-threatening diseases. Vaccines are most effective when they are administered to children at the right age and with the recommended dosage as children are susceptible to certain diseases at certain ages. As per the National Immunisation Schedule for infants, BCG, Hepatitis ‘B’ and Oral Polio Vaccine (OPV) should be given at birth.

The percentage of children aged 12-23 months, who received most of their vaccinations in a public/private health facility as per NFHS 4 and 5, is given in **Exhibit 3.20**.



(Source: NFHS 4 and 5)

The achievement of birth doses given to new-borns during 2020-21 in the State and the sampled districts are given in **Table 3.13**.

Table 3.13: Percentage of achievement of birth doses given to newborn during 2020-21

Name of State/District	Total live births during 2020-21	Achievement during 2020-21 (In per cent)		
		Vitamin 'K'	OPV	Hepatitis B
Tamil Nadu	9,15,967	98	99	99
Erode	27,808	100	100	100
Karur	12,494	100	100	100
Perambalur	7,876	100	100	100
Thanjavur	38,355	82	87	87
Theni	16,228	87	92	87
Tiruvannamalai	25,372	92	96	97

(Source: NHM's HMIS Report)

Thanjavur District performed much below the State's average in vaccination achievements.

3.5.5 Length of stay after childbirth

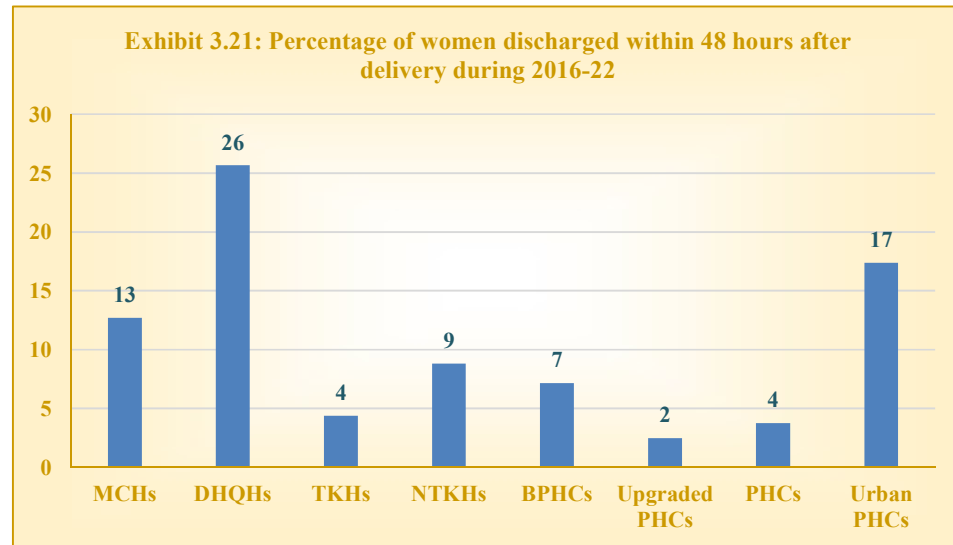
The 'length of stay' following childbirth serves as an indicator of quality of postnatal care in health institutions. Adequate 'length of stay' at a HCF promotes maternal health outcomes, which reduces post-delivery complications. The total number of women discharged within 48 hours after delivery during 2016-21 is given in **Table 3.14**. The sufficient 'length of stay' at public HCFs contributed to the good performance in terms of Infant Mortality Rate and Maternal Mortality Rate.

Table 3.14: Total number of Women discharged within 48 hours after delivery during 2016-21

Name of State/District	Total number of institutional deliveries	Total number of women discharged within 48 hours of delivery	In per cent
Tamil Nadu	50,78,223	71,732	1
Erode	1,35,894	603	0
Karur	68,190	935	1
Perambalur	44,625	30	0
Thanjavur	1,70,280	1,998	1
Theni	90,636	1,701	2
Tiruvannamalai	1,75,184	2,812	2

(Source: NHM's HMIS Reports for the respective years)

In the sampled 47 HCFs, the overall percentage of women discharged within 48 hours after delivery was 16 per cent, the details of which is shown in **Exhibit 3.21**.



(Source: Details furnished by the respective sampled HCFs)

As seen from **Exhibit 3.21**, the percentage of women discharged within 48 hours of delivery ranged from two *per cent* in Upgraded PHCs to 26 *per cent* in DHQHs.

3.5.6 Maternity care outcomes

3.5.6.1 Still births and conduct of death reviews

The Still Birth Rate is defined as the number of babies born with no signs of life at 28 weeks or more of gestation, per 1,000 total births. The details of still births and conduct of death reviews in the 47 sampled HCFs during the period 2016-22 is given in **Appendix 3.18**.

The Still Birth Rate for India and Tamil Nadu was three and two respectively for the period 2018-20⁴⁰. Audit, however, observed that during 2016-22, a total of 2,643 still births occurred in the sampled HCFs, and 252 maternal death reviews and 1,497 neonatal death reviews were conducted at these HCFs.

3.5.6.2 Other indicators

The other indicators such as average rate of referral, LAMA and absconding cases in the sampled⁴¹ HCFs, during the period 2016-22, is given in **Table 3.15**.

⁴⁰ As per the Sample Registration System Statistical Report, 2020.

⁴¹ The sampled HCFs, which had zero Rate of referral, LAMA and Absconding cases, have not been included in the Table.

Table 3.15: Maternity care outcomes: Average rate of referral, LAMA and absconding cases in the sampled HCFs, during the period 2016-22

Sl. No.	Name of sampled HCF	Maternity Care Outcomes - Average during 2016-22		
		Rate of referral	LAMA	Average absconding cases in a year
MCHs				
1	Erode	0	5	3
2	Karur	45	9	40
3	Thanjavur	0	15	781
4	Theni	0	0	257
5	Tiruvannamalai	26	49	485
DHQHs				
1	Cheyar	9	3	0
2	Erode	141	67	14
3	Kumbakonam	213	31	96
TKHs				
1	Bhavani	101	0	0

(Source: Details furnished by the respective sampled HCFs)

3.6 Diagnostic services

IPHS guidelines prescribe the availability of laboratory Services at District Hospitals/Community Health Centres/PHCs to serve the purpose of public health laboratory and to perform all tests required to diagnose epidemics or important diseases from public health point of view. The availability of the mandatory pathological services in the sampled DHQHs, TKHs/NTKHs and PHCs are given in **Tables 3.16, 3.17** and **3.18** respectively. The availability of mandatory pathological services in all the DHQHs is given in **Appendix 3.19**.

Table 3.16: Availability of diagnostic services in sampled DHQHs

Location of the DHQH	Clinical pathology (29)	Pathology (08)	Micro-biology (07)	Serology (07)	Bio-chemistry (21)
Cheyar	6	5	1	11	10
Erode	17	10	17	5	26
Kumbakonam	25	0	20	8	25
Perambalur	0	3	7	4	15
Periyakulam	14	0	0	1	9

(Figures in bracket represent the mandatory number of tests under respective category)

(Source: Details furnished by the sampled HCFs)

Audit observed that Periyakulam and Cheyyar hospitals which were upgraded during the last five years had shortfalls in the availability of tests with reference to norms, and the Perambalur hospital which has been a DHQH for long also suffered shortages, which was unexplainable.

Table 3.17: Availability of diagnostic services in sampled TKHs/NTKHs

District	Location	Clinical pathology (24)	Pathology (01)	Micro-biology (04)	Serology (04)	Bio-chemistry (06)
Erode	Bhavani	1	3	1	5	5
	Kavandapadi	0	2	0	2	3
Karur	Manmangalam	13	0	2	4	6
	Velayutham-palayam	7	0	2	4	5
Perambalur	Karai	7	0	0	6	14
Theni	Andipatti	2	1	1	1	5
	Chinnamanur	10	0	1	3	5
Tiruvannamalai	Thandrapet	2	3	3	4	4
	Thanipadi	2	5	2	5	12

(Figures in bracket represent the mandatory number of tests under respective category)
(Source: Details furnished by the sampled HCFs)

Table 3.18: Availability of diagnostic services in sampled PHCs

District	Name of CHC/PHC	Clinical pathology (18)	Pathology (01)	Micro-biology (02)	Serology (03)	Bio-chemistry (05)
Erode	Thingalur	7	0	2	4	3
	Modakurichi	4	5	2	4	4
	Sivagiri	0	4	0	3	4
	Chennimalai	6	2	1	4	4
Karur	Chinnadhara-puram	6	0	2	3	3
	Kadavur	8	0	1	3	5
Perambalur	Ammapalayam	5	1	0	3	3
	Kaikalathur	0	0	0	0	0
Theni	Kadamalaigundu	8	0	1	3	4
Tiruvanna-malai	Vettavalam	3	4	1	4	6
	Karapattu	3	9	1	4	4
	Jamunamarathur	4	4	1	5	4
	Nammiyampattu	4	4	1	5	4

(Figures in bracket represent the mandatory number of tests under respective category)
(Source: Details furnished by the sampled HCFs)

- Shortfall in pathology services, as against the IPHS norms, was noticed in five DHQs, 11 TKHs/NTKHs and 23 PHCs (**Appendix 3.20**). It was observed that certain important pathological tests like Total Leucocyte count, RA factor, Absolute Eosinophil count, PAP smear were not carried out in these HCFs despite availability of equipment and manpower.
- IPHS has prescribed the time limit for furnishing of results to each test to reduce the 'Waiting Time'⁴² and 'Turn Around Time'⁴³. Audit found that in the sampled HCFs, no records were maintained regarding 'Waiting Time' and 'Turn Around Time' during 2016-21.

⁴² Time taken in receiving samples from the patients after being prescribed by the doctors for investigations.

⁴³ Time taken in getting the investigation done and reporting results to the patients.

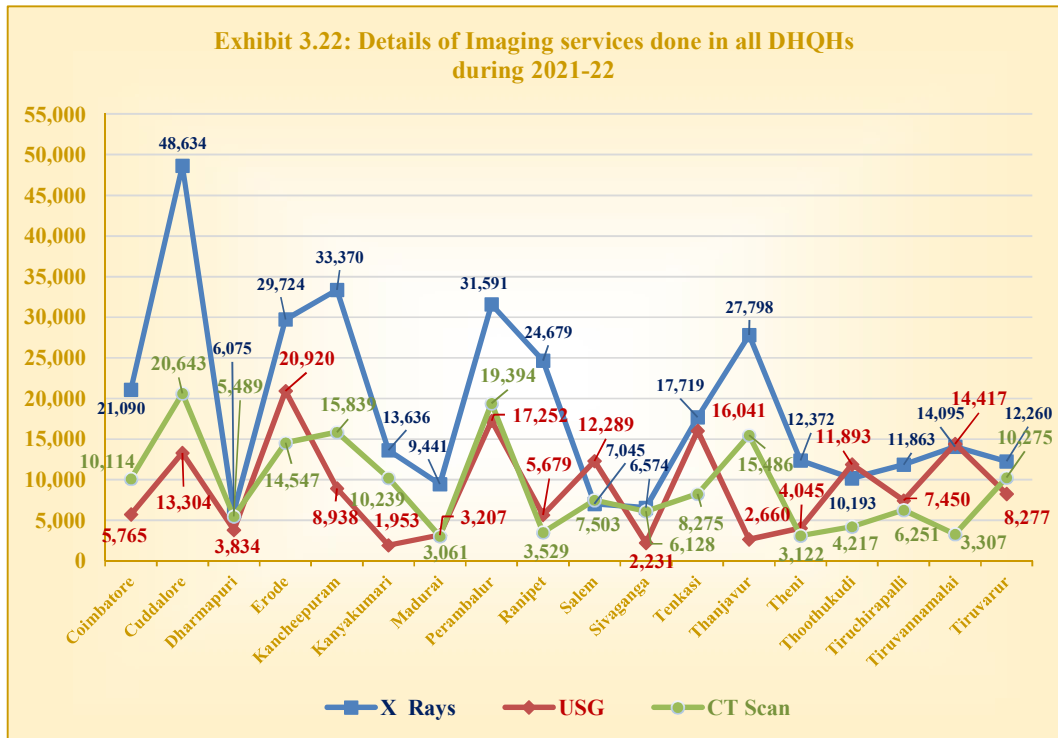
Thus, proper monitoring of timely delivery of services was not possible.

- Due to non-availability of diagnostic equipment such as X-ray machine and Electrocardiogram (ECG) machine, UPHC, Gobichettipalayam and Central UPHC, Tiruvannamalai referred 659 and 710 patients respectively to other medical institutions.

Thus, Audit observed that inadequacy in diagnostic services negatively impacted patient care and put them to hardship.

3.6.1 Radiological/Imaging services in all DHQH

The details of imaging services carried out in all the 18 DHQHs during 2021-22 is presented graphically in **Exhibit 3.22**.



(Source: Details furnished by DMRHS)

Further, the audit findings on radiological services in the sampled HCFs are given in **Paragraphs 4.8.1 to 4.8.4**.

3.7 Auxiliary and Support Services

3.7.1 Dietary Services

As per Government Orders, specific diets were to be supplied to inpatients based on individuals' health condition. To meet the specific dietary requirements of inpatients, all HCFs with inpatient facility provide customised diets to inpatients.

- As of March 2022, Dietary services were available in all the 18 DHQHs in the State.

- In 19 sampled secondary and tertiary HCFs⁴⁴, Dieticians were not available, and the same diet is supplied to all inpatients without considering the specific requirements of the patients. In five HCFs⁴⁵, cooks were not posted despite the hospitals having a full-fledged kitchen and patients were served only bread and milk.
- As per IPHS norms, quality and quantity of diet should be checked by the competent person on a regular basis. Audit observed that the same was not done in any of the sampled HCFs except DHQH, Perambalur.
- Inpatients' survey by Audit disclosed that 24 out of the 234 inpatients surveyed expressed their dissatisfaction about the quality and quantity of diet.

3.7.2 Laundry Services

The provision of clean linen is a part of patient care in HCFs. IPHS prescribed the number of different types of linen⁴⁶ that are required for patient care services in hospitals. In the sampled hospitals, it was noticed that:

- As of March 2022, laundry services were available in all the 18 DHQHs in the State.
- Fourteen sampled HCFs lacked adequate bed linen. The shortfall ranged from one to 100 *per cent*.
- In DHQH, Periyakulam, there were no manpower to operate the steam laundry and the machines were kept idle. No action was taken to appoint the boiler-operator yet.
- In six sampled HCFs⁴⁷ the existing laundries were non-functional as the equipment were not repaired and non-availability of operator. This resulted in outsourcing of services.

3.7.3 Non-availability of Mortuary services

As per IPHS norms and NHM Assessor's Guidebook, Mortuary facility should be provided in the HCFs for keeping of dead bodies and conducting autopsy. All the DHQHs in the State had mortuary facility. Out of the 17 sampled secondary care hospitals, three⁴⁸ did not have mortuary facility and seven⁴⁹ did not have freezer boxes in the mortuary for keeping dead bodies.

⁴⁴ Except MCHs at Erode and Tiruvannamalai.

⁴⁵ DHQH, Perambalur; TKHs at Bhavani, Karai and Manmangalam and NTKH, Kavandapadi.

⁴⁶ Abdominal sheets for OT, Bed sheets, Bedspreads, Doctor's overcoats, Draw sheets, Hospital worker OT coats, leggings, Macintosh sheets, Mats (Nylon), Mattresses (Foam) for adults, Mortuary sheets, over-shoe pairs, Pediatric mattress, Patient's coats (Female), Patient's shirts (Male), Perennial sheets for OT, Pillows, Pillow-covers, etc.

⁴⁷ DHQH, Cheyyar, TKH, Andipatti; UPHCs at Karappattu, Modakkurichi, Sivagiri and Thingalur.

⁴⁸ TKH, Manmangalam, NTKH, Thirukkattupalli and UPHC, Nammiyampattu.

⁴⁹ DHQH, Periyakulam; TKHs at Andipatti and Thandrampattu; NTKHs at Chinnamanur, Velayuthampalayam and Thanippadi and UPHC, Jamunamathur.

Thus, Audit observed that significant number of HCFs lacked support services like dietary service, laundry service and mortuary service.

3.7.4 Availability of other hospital amenities

The IPHS Guidelines stipulate norms for availability of certain hospital amenities like infection control, power supply, drainage and sanitation, firefighting equipment, AMC, grievance and redressal mechanism, internal control and internal audit.

The availability of the above patient amenities in the sampled secondary care hospitals are given in **Appendix 3.21**.

While all the sampled DHQHs/TKHs and NTKHs had facilities for infection control⁵⁰, water supply, drainage and sanitation, firefighting equipment, internal control and internal audit, the HCFs had the following shortcomings:

- 24-hour power supply was not available in TKHs at Karai and Thandampattu.
- Annual Maintenance Contract for equipment was not done in four⁵¹ HCFs.
- None of the sampled HCFs maintained records for registering and monitoring grievance expressed by the patients. Thus, the higher authorities had no system to monitor the redressal of grievances. Although all HCFs replied that a Grievance/Complaint Redressal Mechanism was available, Audit found that the services available in the hospitals were only displayed and no HCF had displayed the rights of the patients.

⁵⁰ Hand washing facilities, Infection Control Team, Standard Operating Procedures, Safe injection practices etc.

⁵¹ TKHs at Karai and Thandampattu; NTKHs at Kavindapadi and Thirukkattupalli.