

CHAPTER 3

Healthcare Services

Chapter 3: Healthcare Services

Out-patient Department services in hospitals were overburdened with overcrowding of patients and long waiting time for registration.

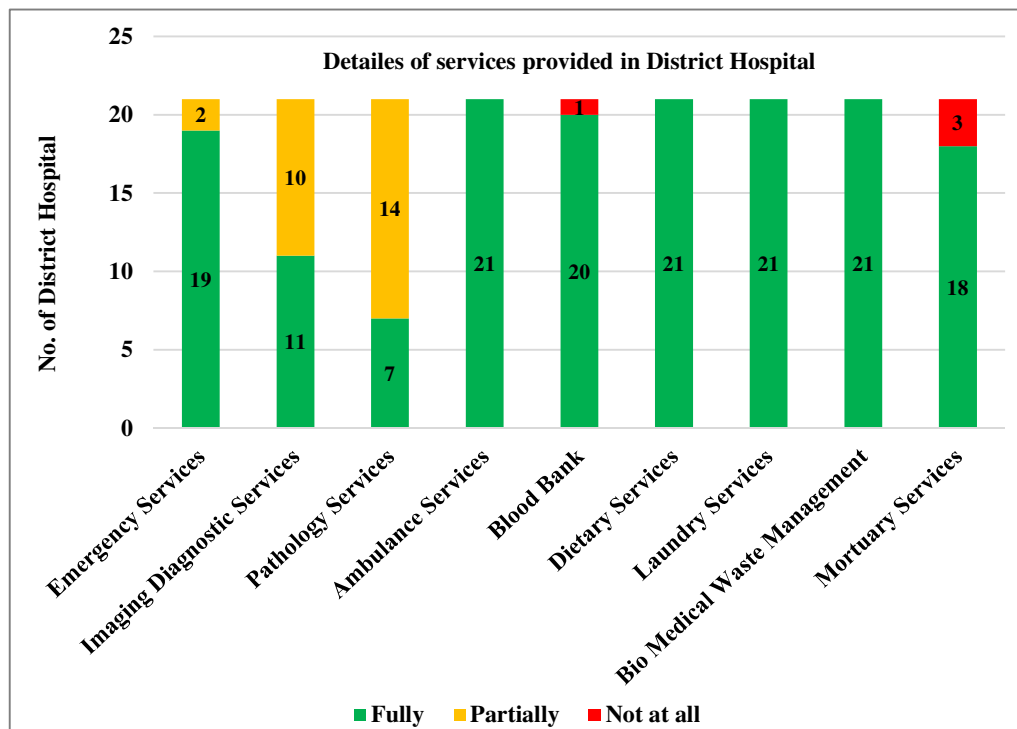
There were shortages of equipment in Trauma Care Centres. X-ray, Mammography and Ultrasonography services were not available in some of the test-checked Health Care Institutions (HCIs). Non-availability of pathology services and shortfall in In-patient Department services and emergency services were noticed. Audit also observed irregularities in outsourcing of dietary services, and non-formation of diet committees in HCIs. Ambulances with basic life support were found to be less than the requirement. There were also shortages in blood bank and transfusion services and blood storage units.

Failure to obtain No Objection Certificate from the Fire Department and non-compliance to fire audit observation exposed the patients and staff to the risk of fire.

3.1 Delivery of Healthcare Services

Delivery of services plays an important role in providing medical services to patients in the HCIs. High-quality healthcare services involve the right care, at the right time and responding to the users' needs and preferences. Healthcare Services provided in HCIs are broadly divided into three categories viz., (a) Line services, (b) Support services and (c) Auxiliary services. Availability of nine healthcare services in the 21 District Hospitals in the State are shown in **Chart 3.1**.

Chart 3.1: Healthcare services available in District Hospitals



Source: Information furnished by Civil Surgeon, District Hospitals

As seen from **Chart 3.1**, out of nine healthcare services, four services namely ambulance, dietary, laundry and bio-medical waste management were available fully in all District Hospitals. Three services namely emergency, imaging diagnostic and pathology were available partially in all District Hospitals. Blood bank service was not available in District Hospital, Dhule while mortuary services were not available in District Hospitals at Chhatrapati Sambhajnagar, Dhule and Nanded. The availability of various healthcare services in test-checked HCIs in selected districts are discussed in succeeding paragraphs.

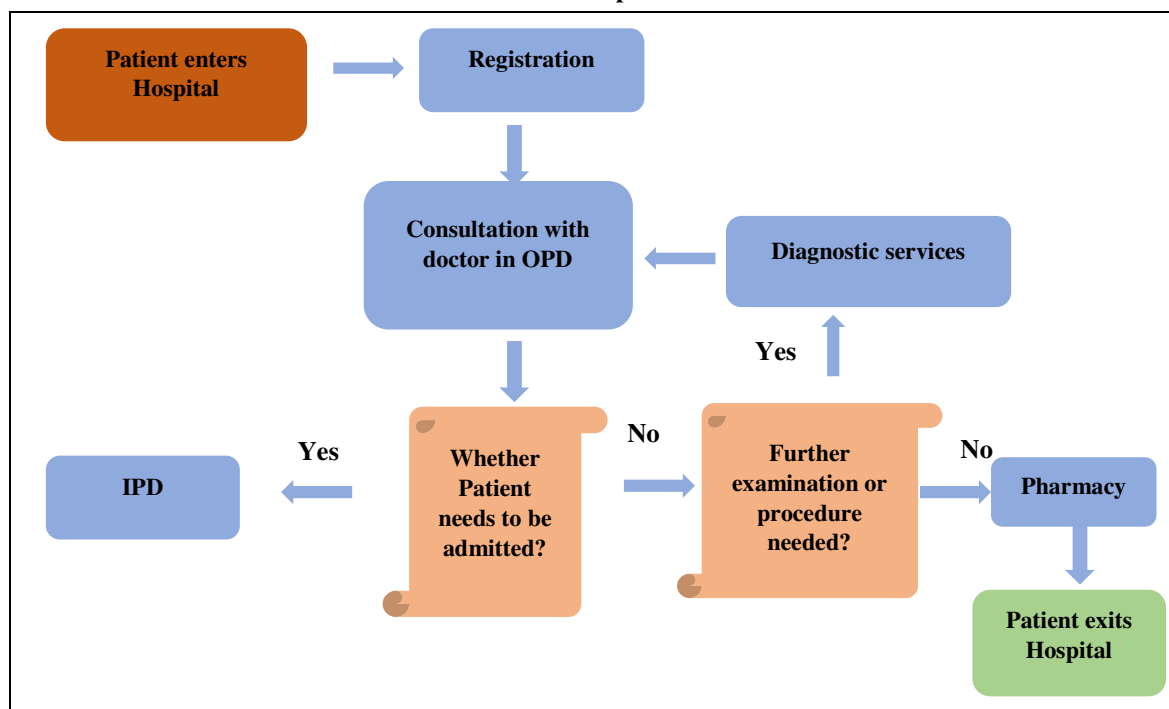
3.1.1 Line Services

Line services in a hospital are directly related to timely delivery of quality healthcare to patients. This includes services like Out-patient Department (OPD), In-patient Department (IPD), Operation Theatre (OTs), Intensive Care Unit (ICUs), Maternity, Blood Bank and Diagnostic services.

3.1.1.1 Out-patient Department Services

To avail services in a hospital, patients have to register at the registration counter of the hospital. They are then examined by the OPD doctors, and further diagnostic tests are prescribed, where necessary, for evidence-based diagnosis. Further, after examination, either drugs are prescribed or admission to IPD is advised based on the diagnosis. The flow of patient services is depicted in **Chart 3.2**.

Chart 3.2: Flow of patient services



Source: Flow chart prepared by the Audit based on the general procedure followed in health care institutions for treatment of the patient

(i) Registration of Patient

Registration is a process of enrolling patients into the records of the hospital to provide services and keep track of various services that are availed by each patient. This is also the first step to generate a medical record of the patient in which all the medical details of the patient are documented.

(a) Patient load on Registration Counter

As per IPHS, at least two counters including one dedicated to women, the elderly and the specially challenged should be provided in RH. Audit noticed that out of 96 RHs in the seven selected districts (Mumbai city and Mumbai suburban districts did not have RHs), 89 RHs (93 *per cent*) had only one registration counter. Audit also noticed that in 41 out of these 89 RHs, the average daily patient load per counter was more than 120²⁵.

Further analysis of data for the year 2022-23 received from 23 HCIs²⁶ (other than RHs) revealed that in 11 HCIs, the patient load per counter/day was less than 120, in five HCIs the patient load per counter/day was between 120 and 240 and in seven HCIs the patient load per counter/day was more than 240.

(b) Time taken in OPD Registration

Registration counter is the first point of contact with the hospital for a patient and is an important component of the hospital experience for patients and their attendants. NHM Assessor's Guidebook, 2013 (Volume-I) specifies a waiting time of three to five minutes for patient registration, thus, requiring an adequate number of counters to be set up.

A survey of 1,283 outpatients was conducted in 62²⁷ out of 119 test-checked HCIs to ascertain the time taken for registration. Analysis of the data revealed that 69 *per cent* of the patients spent more than five minutes in registration.

Due to long-time taken in registration, long queues were observed at the registration counters, which brings out the need to establish more registration counters at the HCIs.



Long queue of patients at the Registration Counter at Sir J.J. Group of Hospitals, Mumbai (24 November 2022)

²⁵ NHM Assessor's Guidebook, 2013 (Volume I) specifies a waiting time of three to five minutes for patient registration. Considering waiting time of three minutes per patient per counter and six hours OPD time, the daily patient load per counter worked out 120 patients per counter per day.

²⁶ DH: four; SDH: nine, WH: two and GMCH: eight.

²⁷ Two Hospitals attached with Ayurved Colleges, 10 Hospitals attached with Medical Colleges, six District/General Hospitals, 11 Municipal Corporations Hospitals, 12 Sub-District Hospitals, 11 Rural Hospitals, one Regional Referral Hospital, one TB hospital, six Urban Public Health Centres and two Women Hospitals.

(ii) Doctor Consultation

(a) Time available for consultation

As per IPHS, the minimum number of patients expected to be checked daily by a Medical Officer is 40. There should be adequate number of doctors so that adequate time and quality treatment can be rendered to patients.

Analysis of the data collected during survey of 248 doctors in 62 out of 119 test-checked HCIs revealed that 26 *per cent* of the doctors attended on an average more than 80 patients per day *i.e.*, double the minimum number of patients by one doctor as per IPHS, 2012.

Further, analysis of data provided by District Civil Surgeons in seven selected districts (Mumbai City and Mumbai Suburban districts did not have RHs) revealed that in four²⁸ out of 96 RHs, the average number of patients checked per doctor per day was more than 80²⁹ during 2022-23 and ranged between 96 patients checked per doctor per day at RH, Dharangaon and 130 patients checked per doctor per day at RH, Nagbhid.

(iii) Other Services

(a) Availability of enquiry counter

As per paragraph 12 and 13 of Chapter V of the Hospital Administrative Manual, Volume I, every hospital, big or small, should have enquiry counter. In big hospitals, a separate clerk is essential to be posted while in small hospitals, the same is to be managed with the available staff and should be functional during the peak hours. The enquiry counter should be able to provide information like location of the various sections of the hospital, location of serious and dangerously ill patients, timetable of the various members of the staff, telephone number of the staff of the hospitals, schedule of fees, *etc.*

Audit observed that in eight³⁰ out of 78 test-checked HCIs (excluding PHCs and UPHCs), enquiry counters were not set up for the benefit of the patients.

(b) Availability of specialist OPD services

According to the IPHS, specialist (having master's degree in respective branches) OPD services such as ENT, General Medicine, Paediatrics, General Surgery, Ophthalmology, Dental, Obstetrics, Gynaecology, Psychiatry, Orthopedics, *etc.*, should be provided in district level hospitals. As per NMC norms, similar specialist OPD services should be provided in Medical College and Hospitals.

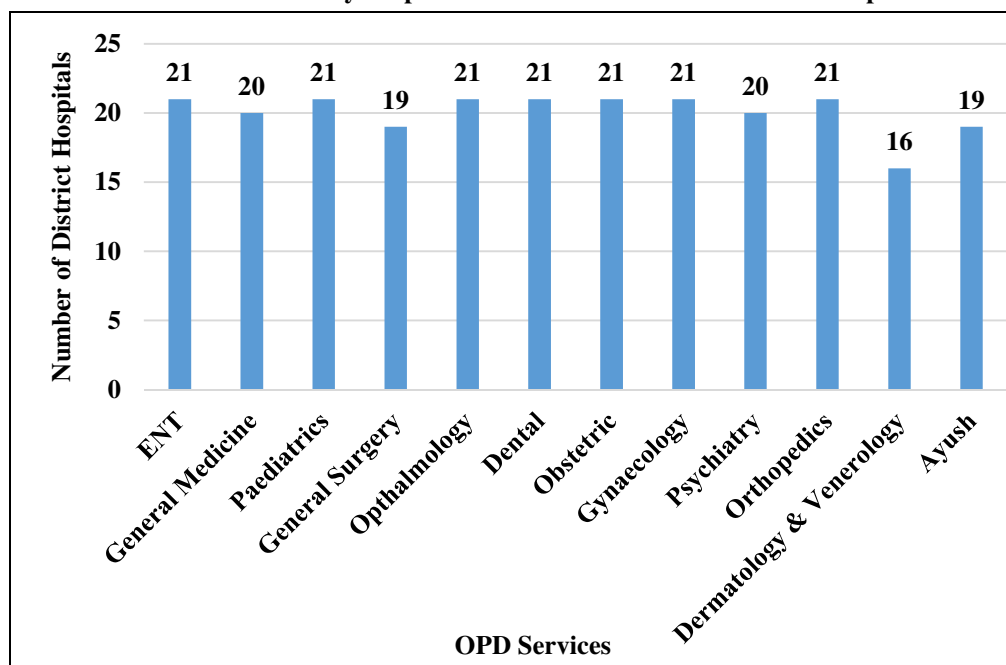
²⁸ RH, Bhadrawati and RH, Nagbhid in Chandrapur district; RH, Dharangaon and RH, Yawal in Jalgaon district.

²⁹ The OPD cases per doctor per annum are: RH, Bhadrawati - 30,422 (Average patient load per day per doctor – 101); RH Nagbhid - 39,079 (Average patient load per day per doctor – 130); RH Dharangaon - 28,676 (Average patient load per day per doctor – 96); and RH Yawal – 35,533 (Average patient load per day per doctor – 118).

³⁰ SDH, Chopda, RHs at Erandol, Pachora and Parola in Jalgaon District and SDHs at Hadgaon, Mukhed, RHs at Naigaon, Bhokar in Nanded District.

Information regarding availability of 12³¹ specialist OPD services obtained from 21 DHS and 11 specialist OPD services (excluding AYUSH service) obtained from 29 hospitals attached to medical colleges is shown in **Appendix 3.1 A** and **B** respectively. Analysis of data for the Districts Hospitals is shown in **Chart 3.3**.

Chart 3.3: Availability of specialist OPD Services in 21 District Hospitals



Source: Information furnished by Civil Surgeon, District Hospitals

- Out of 21 DHs, 14 DHs had all the 12 services. In the remaining seven DHs, shortfall in specialist OPD services was noticed in Dhule (three services), Chhatrapati Sambhajnagar, Nanded and Ratnagiri (two services each) and Buldhana, Hingoli and Wardha (one service each).
- Out of 25 Government Medical Colleges Hospitals (GMCHs)³², 20 GMCHs provided all 11 services. In remaining five GMCHs, the services provided was ranged between six services (Dr. Babasaheb Ambedkar Hospital and Research Centre, Nagpur) and ten services (Government Medical College Hospital, Chhatrapati Sambhajnagar and Government Medical College Hospital, Pune).

Further, PHD, GoM prescribed six services (Medicine, General Surgery, Gynaecology, Paediatric, X-ray and Anaesthesia) for Women Hospitals (WHs). Audit analysed the availability of five services (excluding Anaesthesia which is associated with other services) in WHs. The information regarding availability of five speciality OPD services obtained from 19 WHs in the State as of May 2023 is shown in **Appendix 3.1 C**. Audit noticed that out of 19 WHs, only

³¹ ENT, General Medicine, Paediatrics, General Surgery, Ophthalmology, Dental, Obstetrics, Gynaecology, Psychiatry, Orthopaedics, Venereology and Dermatology and AYUSH.

³² Data pertaining to two hospitals viz., Cancer Hospital, Chhatrapati Sambhajnagar and Super Speciality Hospital, Nagpur were excluded as they provide specialised services. Whereas two hospitals viz., Women Hospital, Yavatmal attached to Government Medical College, Yavatmal provide services related to women and Cama and Albless Hospital, Mumbai attached to Grant Medical College, Mumbai provide services related to women and child.

three WHs provided all the five services. Paediatric service was provided in 18WHs (WH, Buldhana did not provide Paediatric service). WHs at Hingoli, Nashik, Sindhudurg and Washim did not have X-ray services. General Medicine service was not available in 12 WHs and General Surgery service was not available in 16 WHs.

In addition to the above, scrutiny of information furnished by 33 test-checked RHs and SDHs revealed the following:

- 11 (33 *per cent*) HCIs did not provide General surgery.
- 10 (30 *per cent*) HCIs did not provide Dental service.
- Eight (24 *per cent*) HCIs did not provide General medicine services.
- Five (15 *per cent*) HCIs did not provide AYUSH services.

3.1.1.2 In-Patient Department Services

In-patient department (IPD) services is provided to patients staying in the hospital for one or more nights.

(i) IPD services

(a) IPHS recommended 21 types of IPD wards in each DHs. The number of beds in all the wards would be determined based on the bed capacity of each hospital. There were four DHs in four out of nine selected districts (Chandrapur, Jalgaon, Kolhapur, Mumbai City and Mumbai Suburban districts did not have DH). Scrutiny revealed that as against the recommended 21 IPD wards, (i) DH, Amravati did not have eight wards, (ii) DH, Chhatrapati Sambhajnagar did not have three wards, (iii) DH, Nanded did not have 14 wards and (iv) DH, Pune did not have three IPD wards. Audit further noticed that the dialysis unit was available only in DH, Pune.

(b) As per IPHS, services such as emergency, minor surgery, ante-natal care, intra-natal care, post-natal care, newborn care, Medical Termination of Pregnancy (MTP), tubectomy, vasectomy, *etc.*, were to be provided in PHCs. The availability of these services in 33³³ out of 35 test-checked PHCs is shown in **Appendix 3.2**.

As seen from **Appendix 3.2**, emergency, ante-natal and post-natal care services were available in all the 33 PHCs whereas MTP service was available only in seven out of 33 PHCs.

(ii) Bed Occupancy Rate

Bed Occupancy Rate (BOR) is average occupancy of hospital beds within a given year. It is an indicator of the productivity of the hospital services and is measure to verify whether the available infrastructure and processes are adequate for delivery of health services.

As per NITI Aayog's Report on best practices in the performance of District Hospitals, a high BOR is an indicator of health system under pressure. The Report states that hospitals cannot operate at 100 *per cent* occupancy, as spare bed capacity is needed to accommodate variations in demand. Lack of available

³³ PHC, Rohi-Pimpalgaon, District Nanded; PHC, Rajgurnagar, District Pune were under renovation.

beds increase delays in emergency departments cause patients to be placed on clinically inappropriate wards and increase the rate of hospital-acquired infections. This also puts staff under pressure to free up beds that can pose a risk to patient safety.

Similarly, the Report also states that very low BOR (<42 *per cent*) at primary healthcare level indicates lack of medically trained personnel, irregular supply of drugs and other medical supplies and a complete breakdown in the transfer and referral system.

As per IPHS, the BOR of RHs was expected to be at least 60 *per cent* while the expected BOR for District Hospital was 80 *per cent*.

- Analysis of BOR of 96 RHs in seven selected districts (Mumbai City and Mumbai Suburban districts did not have RHs) revealed that in 2021-22, 83 RHs (86 *per cent*) had BOR less than 60 *per cent*. In 55 RHs (70 *per cent*) out of 83 RHs, the BOR was less than 42 *per cent*.
- In all the four³⁴ test-checked DHs in nine selected districts, the BOR was less than 80 *per cent*. In one WH each at Amravati district and Baramati, District Pune, the BOR was 156 *per cent* and 119 *per cent* respectively during the year 2021-22.

Recommendation 2: Government may ensure that specialist services such as general medicines, general surgeries, dental services, etc., are provided in all the Health Care Institutions as per Indian Public Health Standards.

3.1.1.3 Emergency Services

(i) Casualty and Emergency Services

As per IPHS, Casualty and Emergency Services are required in all DHs. Also, as per National Medical Commission (NMC) norms, Casualty and Emergency Services are required in all teaching hospitals.

Analysis of data of 10 services³⁵ required under Casualty and Emergency Services and its availability in 21 DHs and 29 hospitals attached to medical colleges in the State as of May 2023, is shown in **Appendix 3.3 A and B** respectively.

Analysis of data revealed the following:

- Out of 21 DHs, emergency laboratory, mobile x-ray laboratory/plaster room in accident and emergency service were not available in DH, Chhatrapati Sambhajanagar. The trauma ward, treatment of assault injuries, blood bank and mobile X-ray laboratory/plaster room in accident and emergency service were not available in DH, Dhule.
- All 10 services were provided in 19 out of 28 hospitals attached to medical colleges (one hospital³⁶ was not providing IPD services). WH, Yavatmal

³⁴ District Hospital, Amravati, District Hospital Chhatrapati Sambhajanagar, District Hospital Nanded, and District Hospital Pune.

³⁵ emergency OT, emergency ward, trauma ward, triage process, emergency laboratory, separate provision for examination of rape/sexual assaults victims, disaster management plan in emergency ward, treatment of assaults, blood bank in close proximity to emergency, mobile X ray laboratory/plaster room in accident and emergency service.

³⁶ Dr. Babasaheb Ambedkar Hospital and Research Centre, Nagpur.

provided only two services viz., emergency laboratory and blood bank in close proximity to emergency. Further, trauma ward and triage procedure were not available in GMC&H, Baramati, District, Pune.

(ii) Operation Theatre

Operation Theatre (OT) is an essential service required to be provided to the patients. IPHS prescribe OT for elective major surgeries, emergency services and Ophthalmology/ENT for district hospitals. Major OT and emergency OT are also required to be available in Sub-District Hospitals. Further, IPHS provides that while planning the DHs for more than 200 beds, provision of one OT for every 50 general in-patient beds and one OT for every 25 surgical beds should be considered. OT should be equipped with all required instruments.

Audit noticed that OTs were available in all 35 test-checked hospitals (MCHs, DHs, SDHs and WHs).

Audit analysed the availability of 12 surgical procedures (Hernia, Hydrocele, Appendicitis, Haemorrhoids, Fistula, Intestinal Obstruction, Haemorrhage, Nasal packing, Tracheostomy, Foreign body removal, Fracture reduction and putting splints/plaster cast) in test-checked HCIs in nine selected districts as of May 2023.

Analysis revealed the following:

- i) All 12 surgical procedures were provided in 14 (four DHs and 10 GMCH) out of 15 HCIs in nine selected districts and one HCI (GMCH, Baramati in Pune district) did not provide surgical procedures for haemorrhage.
- ii) The average number of surgeries done per surgeon per year in respect of four DHs (Amravati, Chhatrapati Sambhajnagar, Nanded and Pune) and 11 MC&Hs in the nine selected districts are shown in **Appendix 3.4**. As seen from **Appendix 3.4**, the average number of surgeries done per surgeon per year in respect of four DHs (Amravati, Chhatrapati Sambhajnagar, Nanded and Pune) in the nine selected districts ranged between 86 (Nanded) and 260 (Amravati) during 2022-23. While in the 11 GMCH, the average number of surgeries done per surgeon per year ranged between 28 (GMCH, Baramati) and 984 (Sassoon General Hospital, Pune).

(iii) Availability of equipment in Trauma Care Centre

Trauma Care Centre (TCC) should be equipped and staffed to provide care for patients suffering from major traumatic injuries due to motor vehicle accidents or wounds. It is an accepted strategy of trauma care that if basic life support, first aid and replacement of fluids can be arranged within the first hour of the injury (the Golden Hour), lives of many of the accident victims can be saved. The critical factor for this strategy is to provide initial stabilisation to the injured within the golden hour.

As per the Operational Guidelines for setting up trauma care facilities issued by GoI, essential equipment such as CT scan, Mobile X-ray, Defibrillator, Multiparameter monitor, Suction machine and Ventilator should be available.

Out of 119 test-checked HCIs, 11 HCIs were having 11 TCCs. Audit analysed the availability of 10 essential equipment in these 11 TCCs as of February 2024, which is shown in **Table 3.1**.

Table 3.1: Availability of essential equipment in TCCs in the test-checked HCIs

Sr. No.	Name of essential equipment	Number of TCCs in which equipment was available, not available and available but shortage		
		Available	Not Available	Available but shortage
1	ICU Bed	10	1	-
2	Ultrasonography (Trolley based)	8	3	-
3	100 MA Portable X-ray Machine	11	-	-
4	OT Table-3 segment, Translucent top with Orthopaedic attachment	8	2	1
5	Suction Machine	7	-	4
6	Ventilator with high end compressor	10	1	-
7	Anaesthesia Machine with Monitor Parameters: Agent monitoring, NIBP, SPO2, ET CO2, ECG, Temp, IBP	7	1	3
8	ABG Machine - hand held Analyser	7	4	-
9	Defibrillator with Monitor (Parameters: NIBP, ECG, SPO2, NIBP, ATCO2)	7	1	3
10	Monitor (Large screen with ECG, SPO2, NIBP, ATCO2)	9	1	1

Source: Information furnished by TCCs

As seen from **Table 3.1**, ICU bed was not available in TCC at RH, Bhokar. ABG Machine-hand held Analyser was not available in four TCCs³⁷, Ultrasonography (Trolley based) was not available in three TCCs³⁸, OT Table- 3 segment was not available in two TCCs³⁹.

The TCC wise availability of the 10 essential equipment in five out of 11 TCCs (in six TCCs all the 10 essential equipment was available) revealed that in TCC at RH, Bhokar, six (60 per cent) out of the 10 equipment was not available while in TCC at SDH, Shillod, four (40 per cent) out of the 10 equipment was not available (**Appendix 3.5**).

3.1.1.4 Maternity services

(i) Antenatal Care

Antenatal Care (ANC) to pregnant women requires consideration of diet, lifestyle and drug therapies to achieve a good foetal outcome with minimal maternal morbidity and mortality. Good ANC reduces the risk of childbirth complications. Guidelines for Antenatal Care and Skilled Attendance at Birth issued (2010) by the Ministry of Health and Family Welfare, GoI aimed to provide four ANC to all pregnant women comprising of investigations like haemoglobin, blood grouping, urine examination, administration of two doses of Tetanus Toxoid (TT) and supply of 100 Iron Folic Acid (IFA) tablets. The first ANC checkup was to be provided within 12 weeks, second within 14-26 weeks, third within 28-34 weeks and fourth checkup within 36 weeks up to term of pregnancy to monitor the progress.

³⁷ TCCs at SDH Sillod, SDH Warora, RH Bhokar, and GMCH Jalgaon.

³⁸ TCCs at SDH Sillod, SDH Warora, GMCH, Jalgaon.

³⁹ TCCs at SDH Sillod and RH Bhokar.

The details of ANC checkup done, TT dose/booster administered and IFA tablet supplied along with the pregnant women registered for ANC in the State and selected districts during 2017-18 to 2021-22 is shown in **Table 3.2**.

Table 3.2: Details of Antenatal care checkup, TT and IFA tablet provided to pregnant women in the State and selected districts during 2017-18 to 2021-22

Selected District	Total No. of pregnant women who registered for ANC	Total No. of pregnant women who did not receive four ANC checkup (per cent)	Total No. of pregnant women who did not receive two dose of TT and TT booster (per cent)	Total No. of pregnant women who did not receive IFA tablets (per cent)
Amravati	234404	28567 (12)	11580(5)	27054(12)
Chhatrapati Sambhajnagar	394848	5650 (1)	4185(1)	0(0)
Mumbai City and Mumbai Suburban	1012010	227465 (22)	209682(21)	193859(19)
Chandrapur	163895	0 (0)	5400(3)	1020(1)
Jalgaon	406836	32224 (8)	19424(5)	10910(3)
Kolhapur	314253	7779 (2)	1699(1)	262(0)
Nanded	335606	18212 (5)	5003(1)	14634(4)
Pune	975439	28241(3)	149017(15)	76725(8)
Overall State	10437858	807990(8)	737717(7)	633566(6)

Source: Data furnished by State Family Welfare Bureau, Pune

As seen from **Table 3.2**, the overall shortfall in ANC checkup, providing TT dose/booster and IFA tablets in the State was eight *per cent*, seven *per cent* and six *per cent* respectively, during 2017-18 to 2021-22.

The shortfall in ANC checkup in selected districts ranged from one *per cent* (Chhatrapati Sambhajnagar district) to 22 *per cent* (Mumbai City and Mumbai Suburban districts) except Chandrapur district. The shortfall in providing TT dose/booster in selected districts ranged from one *per cent* (Chhatrapati Sambhajnagar, Kolhapur and Nanded districts) to 21 *per cent* (Mumbai City and Mumbai Suburban districts). The shortfall in providing IFA tablets in selected districts ranged from one *per cent* (Chandrapur district) to 19 *per cent* (Mumbai City and Mumbai Suburban districts) except Chhatrapati Sambhajnagar and Kolhapur districts.

(ii) Immunisation and Vaccination to Newborns

Under the programme of Immunisation and Vaccination, newborns are to be administered doses of three vaccines *viz.*, Oral Polio Vaccine (OPV), Bacillus Calmette–Gurien (BCG) and Hepatitis ‘B’ as birth dose.

The percentage of newborns vaccinated during 2017-18 to 2021-22 in the State and selected districts is shown in **Table 3.3**.

Table 3.3: The percentage of newborns vaccinated in the State and selected districts during 2017-18 to 2021-22

Selected districts	Percentage of new born vaccinated		
	BCG vaccine	OPV	Hepatitis B vaccine
Amravati	100	90	48
Chhatrapati Sambhajinagar	100	100	94
Mumbai City and Mumbai Suburban	100	100	95
Chandrapur	100	88	78
Jalgaon	100	94	50
Kolhapur	100	100	65
Nanded	99	98	73
Pune	100	89	81
Overall State percentage	100	94	66

Source: Data furnished by State Family Welfare Bureau, Pune

As seen from **Table 3.3**, the percentage of newborn who received BCG vaccine, OPV and Hepatitis 'B' in the State during 2017-18 to 2021-22 was 100 per cent, 94 per cent and 66 per cent respectively.

In selected districts, the percentage of newborn who did not receive Hepatitis B vaccine ranged from five per cent (Mumbai City and Mumbai Suburban districts) to 52 per cent (Amravati district). The percentage of OPV not given to newborns ranged from two per cent (Nanded district) to 12 per cent (Chandrapur district) except Chhatrapati Sambhajinagar, Mumbai City, Mumbai Suburban and Kolhapur districts.

3.1.1.5 Blood Bank

As per IPHS, all HCIs having more than 100 beds are required to have Blood Bank and Transfusion Services. Further, blood storage units are required in all Rural Hospitals. Audit noticed the following:

- Nine (32 per cent) out of 28 test-checked HCIs having more than 100 beds did not have Blood Bank and Transfusion Services as of July 2022.
- All the 17 test-checked Rural Hospitals did not have blood storage units as of June 2022.

3.1.1.6 Imaging and Diagnostic Services

Diagnostics are an integral part of the health care system and provide information needed by service providers to make informed decisions about care provision related to prevention, screening, detection, treatment, and management. It includes the clinical services of Radiology, Pathology and Laboratory.

As per IPHS, each District Hospital laboratory should be able to perform all tests required to diagnose epidemics or important diseases from the viewpoint of public health.

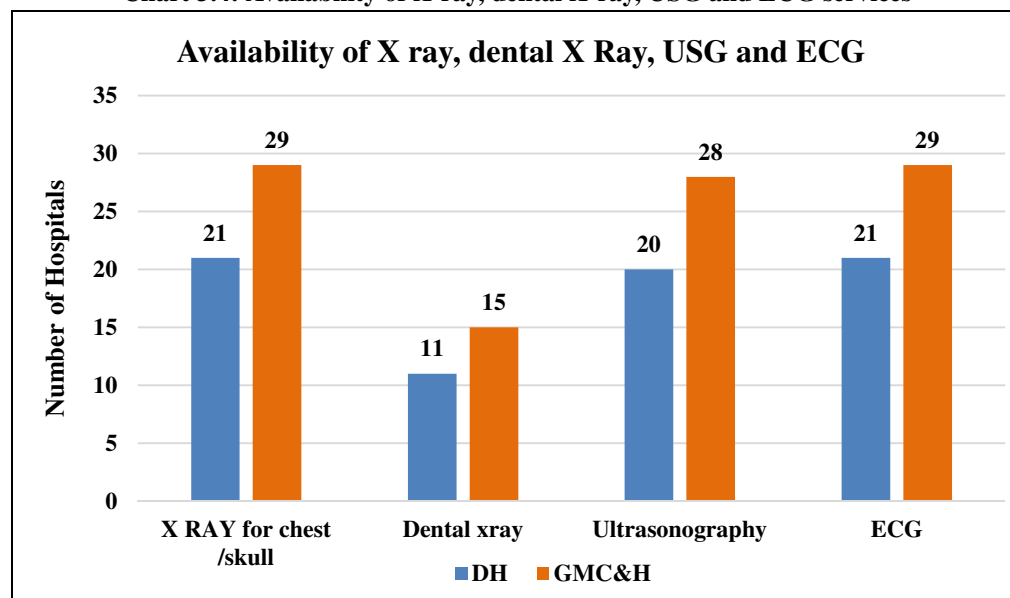
(i) Radiology and Imaging Services

According to IPHS and NMC norms, radiology diagnostics includes, (a) X-ray, (b) Barium test, (c) Miniature mass radiographs (chest), (d) Hysterosalpingogram, (e) Dental X-ray, and (f) Ultrasonography.

(a) **Availability of X-ray, Ultrasonography and Electrocardiogram services in HCIs**

Four services, X-rays (for chest, skull, spine, abdomen and bones), Dental X-ray, Ultrasonography (USG) and Electrocardiogram (ECG) facilities are required in the HCIs (DHs, GMC&Hs, SDHs and RHs). Information obtained from 21 DHs and 29 hospitals attached to medical colleges in the State as of May 2023 is shown in **Appendix 3.6 A** and **B** respectively. Availability of these four services in DHs and GMC&Hs is graphically represented in **Chart 3.4**.

Chart 3.4: Availability of X-ray, dental X-ray, USG and ECG services



Source: Information furnished by Civil Surgeon, District Hospitals and Dean, Government Medical Colleges

Analysis of data revealed the following:

- All Imaging and Diagnostic Services were available in 11 out of 21 DHs. In 10 DHs, the Dental X-ray facility was not available, whereas the USG service and dental X-ray service were not available in DH, Nanded.
- All four services were available in 15 out of 29 GMC&Hs. In the remaining 14 GMC&Hs, the shortage in services provided ranged from one service to two services. Dental X-ray service was not available in 14 GMC&Hs⁴⁰. Ultrasonography service was not available in GMC&H, Dharashiv (previously known as Osmanabad).

Scrutiny in 33 test-checked RHs and SDHs revealed the following:

- X-ray facility was not available in two test-checked HCIs (RH, Shikrapur, Pune: since December 2015; RH Erandol, Jalgaon: since August 2021) due to non-posting of X-ray technicians.
- Dental X-ray facility was not available in 21 test-checked HCIs (RHs and SDHs).

⁴⁰ In nine hospitals attached to four Government Medical Colleges, though the dental service was not available, the same was available in other hospitals attached to these four Government Medical Colleges.

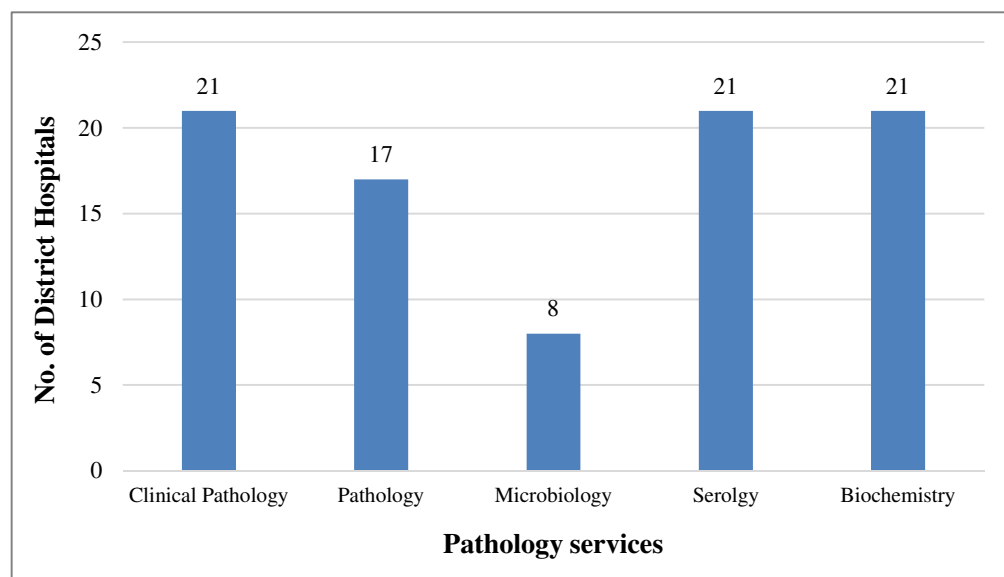
(b) Availability of services of Mammography and MRI

According to IPHS, a mammography unit and preferably MRI facilities were required in HCIs having more than 300 beds. Audit scrutiny revealed the following:

- Mammography unit was not available in six⁴¹ (27 per cent) out of 22 test-checked HCIs having more than 300 beds as required.
- MRI scan facility was not available in three⁴² (14 per cent) out of 22 test-checked HCIs having more than 300 beds as preferable.

(ii) Pathology Services**(a) Availability of pathology services**

The District Hospital Laboratory was required to serve the purpose of a public health laboratory and be able to perform all tests required to diagnose epidemics or important diseases. As per IPHS, DHs are required to perform clinical pathology⁴³, pathology⁴⁴, microbiology⁴⁵, serology⁴⁶ and biochemistry⁴⁷ tests. The availability of pathology services in 21 DHs as of May 2023 is graphically represented in **Chart 3.5**.

Chart 3.5: Availability of Pathology services in DHs

Source: Information furnished by Civil Surgeon, District Hospitals

⁴¹ DH, Amravati, GMCH, Jalgaon, Chhatrapati Pramilaraje Hospital, Kolhapur, DH, Pune and Yashvantrao Chavan Memorial Hospital, Pimpri-Chinchwad Municipal Corporation, Pune.

⁴² DH, Amravati, Rajawadi Hospital, Mumbai and Chhatrapati Pramilaraje Hospital, Kolhapur.

⁴³ Clinical pathology is diagnostic analysis of blood, urine, stool, cerebrospinal fluids *etc.*

⁴⁴ Pathology includes diagnostic analysis relating to PAPSMEAR, Sputum and histopathology.

⁴⁵ Microbiology test helps in finding disease causing microorganisms in blood, serum, tissues, urine, *etc.*

⁴⁶ Serology is diagnostic analysis of antibodies in the blood serum.

⁴⁷ Biochemistry test measures the concentration of certain chemical in blood sample which may include electrolyte, fats, proteins, glucose, *etc.*

As seen from **Chart 3.6**, clinical pathology, serology and biochemistry services were available in all 21 DHs, while pathology and microbiology services were not available in four DHs and 13 DHs respectively.

Audit further noticed that out of the 29 hospitals attached to medical colleges under MEDD, facilities for all five tests were available in 21 hospitals attached to medical colleges as of May 2023. While in the remaining nine hospitals attached to medical colleges, services not available ranged between one service and four services as shown in **Table 3.4**.

Table 3.4: Non-availability of services

Pathology services	Name of HCIs
Clinical Pathology	Super Speciality Hospital, Nagpur
Pathology	Women Hospital, Yavatmal and Government Medical College Hospital, Nandurbar
Microbiology	G. T. Hospital, Mumbai and Cama & Albless Hospital, Mumbai, Government Medical College Hospital, Dharashiv and Women Hospital, Yavatmal
Serology	Dr. Babasaheb Ambedkar Hospital and Research Centre, Nagpur, Super Speciality Hospital, Nagpur and Women Hospital, Yavatmal
Bio-chemistry	Government Medical College Hospital, Satara, Super Speciality Hospital, Nagpur and Women Hospital, Yavatmal

Source: Information furnished by Dean, Government Medical Colleges

Reply of Government was awaited (April 2024).

(b) Absence of quality assurance of pathology services

As per the IPHS, external validation of lab reports was required to be done on regular basis. Audit noticed that 34 out of 78 test-checked HCIs (excluding PHCs and UPHC) did not have any system for external quality assessment for the pathological tests done by the HCIs.

Recommendation 3: Government may ensure that essential radiology services such as X-ray, Ultrasonography and Mammography are made available in Health Care Institutions as per Indian Public Health Standards.

3.1.2 Support Services

Support services are not directly related to patient care but contribute to patient management in HCIs. These services aid the line departments in providing a safe and sterile environment in HCIs and include services like Oxygen service, Dietary service, Laundry service, Bio-medical Waste Management service, Ambulance service and Mortuary service.

3.1.2.1 Dietary Services

Diet plays an important part in therapeutics, especially in cases of deficiencies, general debility, anemia, nutritional diseases and also in respect of patients admitted in hospitals for some weeks. The Medical Officers have to pay as much attention to the selection and prescription of diets as they do for prescription of medicines.

The IPHS stipulates that apart from the normal diet, the food supplied should be patient specific such as diabetic, semisolid and liquid and distributed in a covered container. The quality of diet should be checked by a competent person on a regular basis.

NHM Assessor's Guidebook envisages that the health facility must have standard procedures for the preparation, handling, storage and distribution of food as per the requirement of diet by patients. It is, therefore, imperative that each hospital is equipped with its own in-house kitchen for the preparation of meals as per the specific dietary requirements of patients.

(i) Formation of Diet Committees in Hospitals

According to the Hospital Administration Manual, Government of Maharashtra, 1976, Diet Committees have to be formed in every HCIs comprising of Resident Medical Officer and Matron, *etc.*

Out of 119 test-checked HCIs, 78 test-checked HCIs were providing dietary service. Audit scrutiny revealed that in seven⁴⁸ (nine *per cent*) out of 78 test-checked HCIs, diet committees were not formed.

(ii) Availability of patient-centric diets in SDHs/RHs

The IPHS mentioned patient-centric diets, such as diabetic, semi-solid and liquid diets in addition to the normal diet. However, scrutiny revealed that specific diets were not being provided in the test-checked SDHs and RHs. All patients were given similar diets thereby ignoring the distinctive dietary requirements of different categories of patients. Further, only standard menu for diet was included in the contract for providing diet to patients and no condition was included for the provision of patient-centric diet.

(iii) Outsourcing of Dietary Services

In order to provide diet to the in-patients of the HCIs (DH, SDH, RH, WH and TB hospitals under the PHD), four contractors were engaged (March 2019) by Joint Director of Health Services (Procurement Cell), Mumbai, by inviting tenders. As per contract conditions, the contractors had to provide tea (two times), breakfast with milk, and two meals (Lunch and Dinner).

The cost of the diet per patient per day was ₹ 120 plus five *per cent* Goods and Service Tax (GST) in SDH and RH, while in DH, it was ₹ 110 plus GST.

Audit noticed the following:

- As per clause 3(B) of the contract, a Diet Committee of Hospital should visit the kitchen for inspection and collect food samples to be tested in the district Public Health Laboratory, at least once every month. In case of adulteration, fine of ₹ 50,000 for every instance was leviable from the contractor. Audit noticed that 16 test-checked HCIs having dietary services in Pune, Kolhapur, Nanded, and Jalgaon districts did not get the food samples tested from any Public Health Laboratory.
- Scrutiny of diet register revealed that the supply of diet to the in-patients in RH, Shirur and RH, Shikrapur of Pune district was stopped by the contractor since September 2021 and January 2022 respectively. Similarly, in SDH, Chopda of Jalgaon district, the diet was not provided to in-patients from September 2017 to March 2019. In RH, Erandol, the diet was discontinued from September 2019 to May 2020. However, these HCIs did not make any

⁴⁸ Pune: Five and Jalgaon: Two.

alternate arrangements to provide food to the patients during the said periods.

(iv) Distribution of diet in unhygienic plastic cover

As per IPHS, hygienic diet should be supplied in covered container. Audit observed that in Krantijyothi Savitribai Phule (Talera) Hospital of Pimpri-Chinchwad Municipal Corporation, Pune the contractor was supplying diet in plastic pouch to the patients.



Talera hospital, Pimpri-Chinchwad Municipal Corporation, Pune (22 December 2021)

Recommendation 4: Government may ensure that the nutritional requirements of patients are addressed by delivery of patient centric diets.

3.1.2.2 Ambulance services

(i) Availability of Ambulance

IPHS and NHM Assessor's guidebook provided that the district hospitals should ensure adequate, timely and round the clock ambulance service equipped with Basic Life Support (BLS) and preferably at least one Advanced Life Support (ALS) ambulance. The serviceability and availability of equipment and drugs in the ambulance were to be checked on a daily basis. As per IPHS, two to four ambulances are required to be available in 50 to 500 bedded hospitals. Information obtained from 21 DHs, 19 WHs and 29 hospitals attached to medical colleges in the State on availability of ambulances as of May 2023 revealed the following:

- As against the requirement of two ambulances, WH, Sindhudurg did not have any ambulance. In the remaining 18 WHs, the ambulances were available as per requirement.
- As against the requirement of four ambulances, Government Medical College Hospital, Jalgaon did not have any ambulances. In the remaining 28 hospitals attached to medical colleges, the ambulances were available as per requirement.

(ii) 108 Ambulance services

Maharashtra Emergency Medical Services (MEMS) project under National Health Mission provides pre-hospital health services to patients through life

support ambulances to nearby hospitals for further treatment. The main objective of the project is to provide first aid to preserve life, prevent further injury and promote recovery and reduction of 20 *per cent* in mortality and morbidity.

GoM had appointed M/s BVG India Limited as the service provider to implement the MEMS project in the State. The service provider was responsible to maintain and run the setup of the Emergency Response Centre for running ambulances to provide 24 hours per day and 365 days a year emergency response through 24 hours toll-free number “108”. As per the agreement, the average response time for all monthly calls was 20 minutes in urban areas and 30 minutes in rural areas. Penalty of ₹ two lakh per minute was leviable if monthly average goes more than the average response time stipulated.

Under MEMS project, 937 ambulances were deployed in all 34⁴⁹ districts on the basis of population. The population norm adopted by the GoM was one ambulance for two lakh urban population and one ambulance for one lakh rural population.

Scrutiny revealed the following:

- There was a shortage of ambulances in 23 districts. The shortage of ambulances ranged between three *per cent* (Chhatrapati Sambhajnagar and Kolhapur) and 27 *per cent* (Beed) as shown in **Appendix 3.7**.
- Data on the response time of “108 Ambulance” from April 2016 to March 2022 revealed that the average response time for all monthly calls was achieved in rural areas. In urban areas also the average response time for all monthly calls was achieved except in the month of September 2018 and July 2019 during which the response time was 20 minutes 20 seconds and 20 minutes 55 seconds, respectively.

3.1.2.3 Mortuary Services

Information obtained from 21 DHs, 19 WHs and 29 hospitals attached to medical colleges in the State as of May 2023 revealed the following:

- Mortuary Services were available in all DHs except Chhatrapati Sambhajnagar, Dhule and Nanded.
- Out of 19 WHs, Mortuary services were available only in WH Neknur, District Beed.
- Out of 29 hospitals attached to medical colleges, mortuary services were not available in five⁵⁰ hospitals attached to medical colleges.

3.1.3 Auxiliary Services

Auxiliary services in HCIs are activities that facilitate the health care services. It includes patient safety facilities, grievances/complaint redressal and stores.

⁴⁹ Information in respect of Palghar district is combined with Thane district and information in respect of Mumbai City and Mumbai Suburban in combined.

⁵⁰ Cancer Hospital, Chhatrapati Sambhajnagar; Cama and Albles Hospital, Mumbai; Dr. Babasaheb Ambedkar Hospital and Research Centre Nagpur, Super Speciality Hospital, Nagpur and Women Hospital, Yavatmal.

3.1.3.1 Disaster management

(i) Preparation of disaster management plan

According to the National Disaster Management Guidelines on Hospital Safety, 2016, each hospital was required to constitute Hospital Disaster Management Committee for developing a Hospital Disaster Management Plan (HDMP). The Committee should regularly review the HDMP and also conduct periodical drills to test the response capabilities in emergencies in real time.

Audit noticed that out of 84 test-checked HCIs (RH and above), 23 HCIs (27 per cent) did not constitute the hospital disaster management committee and 35 HCIs (42 per cent) had not prepared the disaster management plan.

(ii) Fire safety

Maharashtra Fire Prevention and Life Safety Measures Act, 2006, prescribes standards for fire prevention and life safety measures in buildings.

During the joint inspection of 50 test-checked HCIs, Audit noticed that 36 HCIs (72 per cent) did not obtain no objection certificate from the fire department. In 22 HCIs (44 per cent) smoke detectors were not installed, 20 HCIs (40 per cent) did not have fire alarms, 27 HCIs (54 per cent) did not have provisions for underground water storage facility for firefighting while 29 HCIs (58 per cent) did not construct underground static water tank for meeting the fire contingencies. In 21 HCIs (42 per cent) fire evacuation plans/routes were not displayed.

The Commissioner, Health Services, Mumbai directed (January 2021) all the hospitals in the State to conduct fire and electrical safety audit.

Scrutiny revealed that though the fire and electricity audit was conducted, none of the test-checked HCIs in selected districts (Amravati, Chhatrapati Sambhajnagar, Chandrapur, Jalgaon, Pune, Kolhapur and Nanded) complied with the recommendations.

The MEDD stated (January 2023) that funds were sanctioned under the District Planning Committee for fire prevention in HCIs of Nanded district. It was also stated that proposals in respect of Kolhapur and Chandrapur district were under consideration.

In respect of seven test-checked HCIs run by Brihanmumbai Municipal Corporation (BMC), Audit noticed that fire audit in six test-checked HCIs was completed. However, four out of these six HCIs had not complied with the fire audit observations (January 2023).

(iii) Structural Audit

According to the National Disaster Management Guidelines on Hospital Safety, 2016, the maintenance systems developed for the hospital should ensure that the strength of the structural elements shall not further deteriorate compared to their intended level. The structural systems of all buildings also require routine maintenance. The maintenance system of hospitals should also include structural safety assessment or structural audit at pre-determined intervals (every five years to revalidate the structural audit carried out earlier) using more detailed evaluation. Further, as per the Mumbai Municipal Corporation Act, 1888 and the Maharashtra Municipal Corporations Act, 1949, if any building is

more than 30 years old, a structural audit has to be conducted and based on the report of the structural audit, the structural repairs and renovation works have to be carried out. Audit scrutiny revealed the following:

- Structural audit of Cama and Albless Hospital, Mumbai (March 2021), St. George's Hospital, Mumbai (April 2018), Government Medical College and Hospital, Chandrapur (August 2017) and Government Medical College and Hospital, Jalgaon (April 2021) were conducted. However, no action on the recommendations made in the structural audit was taken by these hospitals.
- Out of seven test-checked HCIs of BMC, the structural audit was not conducted in two HCIs⁵¹. No action on the recommendations made on structural audit was taken by four out of five HCIs.

Recommendation 5: Government may ensure that the Health Care Institutions comply with fire, electric and structural audit requirements in a time-bound manner.

⁵¹ Khursheedji Behramji Bhabha Municipal General Hospital, Bandra (West), V. N. Desai Municipal General Hospital, Santacruz, Mumbai.

