

# **Chapter III**

## **Healthcare Services**



## Chapter-III: Healthcare Services

*High-quality healthcare services involve the right care at the right time and responding to the patients' needs and preferences. An inadequate number of registration counters were noticed in Tertiary and Secondary Healthcare facilities. Many specialists OPD services were not available in healthcare facilities. The Bed Occupancy Rate was not as per norm in test-checked District Hospitals and CHCs.*

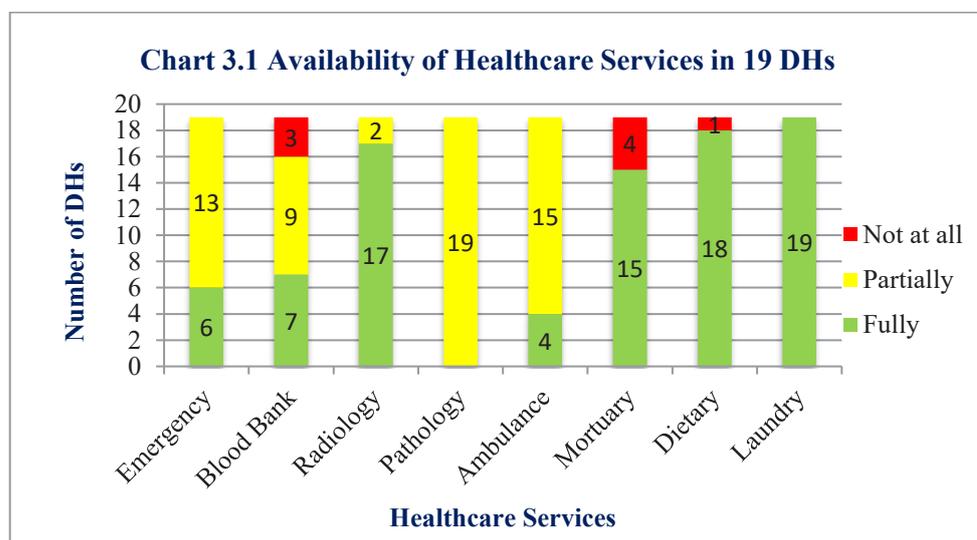
*Deficiencies were also noticed in services such as Emergency, Intensive Care Units and Blood Banks in healthcare facilities.*

*Diagnostic services were not available at many secondary healthcare facilities. A shortage of Basic Life Support ambulances under 108 service was noticed in the State.*

*Deficiencies were noticed in Fire Safety Service and Infection Control Service in healthcare facilities.*

### 3.1 Introduction

Delivery of services plays an important role in providing medical services to patients in Healthcare facilities. High-quality healthcare services involve the right care, at the right time and responding to the patients' needs and preferences. Healthcare Services provided in HCIs are mainly classified into three parts, viz., (a) Line services, (b) Support services and (c) Auxiliary services. Healthcare services available in all 19 District Hospitals are shown in **Chart 3.1:**



(Source: Information provided by all 19 DHs)

As seen from **Chart 3.1**, out of eight healthcare services, Emergency Services were partially available in 13 DHs. Blood Bank service was not available in three DHs. Radiology service was fully available in 17 DH<sup>11</sup> Pathology Services were partially available in 19 DHs. Ambulance services were

<sup>11</sup> X-Ray service was available in all 19 DHs, Ultrasonography service was available in 17 DHs.

partially available in 15 DHs out of 19 DHs. Mortuary service was not available in four District Hospitals (DHs). Dietary service was not available in one District Hospital (DH). Further, laundry services were available fully in all 19 DHs.

## 3.2 Line Services

Line services in a hospital are directly related to timely and quality healthcare of patients. This includes services like Out-Patient Department (OPD), In-Patient Department (IPD), Emergency, Intensive Care Units (ICUs), Maternity and Blood Banks.

### 3.2.1 Out-patient Services

To avail Out-Patient Services in the hospitals, out-patients first register at the outdoor patients department (OPD). After registration, the concerned doctor examines the patient and either prescribe diagnostic tests for evidence-based diagnosis or drugs, as per the diagnosis done during the consultation process.

#### (i) Registration facility for OPD in test-checked MCHs

The registration counter is the first point of contact with the hospital for a patient attendant. National Health Mission Assessor Guidebook (Vol-1) 2013 estimates the average time required for registration to be 3-5 minutes per patient, which roughly works out to about 12-20 patients per hour per counter. The details of available registration counters for OPD patients and the average<sup>12</sup> number of daily OPD patients during 2021-22 in test-checked MCHs are shown in **Table 3.1:**

**Table 3.1: Average daily patient load in test-checked MCHs during 2021-22**

Name of THs	No. of Outdoor Patients registered	Average Daily patients load (Col.2/294)	Numbers of registration counters required (Col.3/120 <sup>13</sup> )	Number of operational registration counters	Short-fall (Col.4-Col.5)	Per counter maximum patient load as per norms	Per counter actual patient load (Col. 3/ Col. 5)
1	2	3	4	5	6	7	8
MCH Ahmedabad	8,86,839	3,016	25	13	12	120	232
GMERS MCH Ahmedabad	3,05,297	1,038	09	04	05	120	260
MCH Jamnagar	6,19,448	2,107	18	06	12	120	351
GMERS MCH Gandhinagar	4,11,369	1,399	12	06	06	120	233
MCH Dahod (Brown Field)	2,95,170	1,004	08	09	-	120	112

(Source: As per information collected from test-checked MCHs)

<sup>12</sup> Annual number of patients divided by 294 days (52 Sundays and 19 Holidays were deducted from total days).

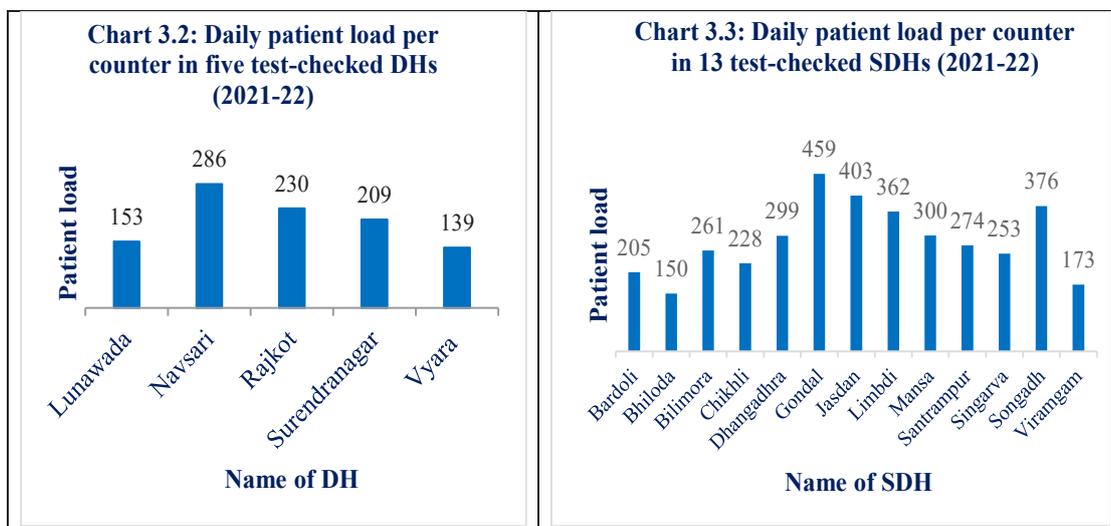
<sup>13</sup> Considering 6 hours in a day for working of registration counter and 20 registrations in one hour.

Shortage of registration counters ranging from five to 12 was noticed in four MCHs out of five test-checked MCHs during 2021-22.

**(ii) Daily patient load per registration counter in all 19 DHs and in test-checked 13 SDHs**

As per National Health Mission Assessor Guidebook (Vol-1) 2013 norms maximum patients load is 120 patient per counter. The details of available registration counters for OPD patients and average number of daily OPD patients during 2021-22 in all 19 DHs were shown in **Appendix 3.1**.

Further, the average daily patient load per registration counter in test-checked five DHs and 13 test-checked SDHs during 2021-22 are as shown in **Chart 3.2 and 3.3** respectively below:



(Source: As per data collected from test-checked DHs and SDHs)

During 2021-22, the average daily patient load on a registration counter was higher in DHs Navsari and Rajkot. Similarly, the load was higher in SDHs Gondal and Jasdan. Audit observed that only a single registration counter was available in four DHs out of 19 DHs and at all test-checked SDHs.

An Online Registration System (ORS) needs to be established in all DHs/SDHs. However, ORS was not yet implemented in all DHs/SDHs in the State till March 2023.

**(iii) Availability of OPD Services in all 19 DHs**

According to the IPHS 2012, OPD services such as General Medicine, General Surgery, Gynecologist, Pediatrician, Orthopedics, Ophthalmology, ENT, Psychiatry, and Physiotherapy should be provided in DHs.

Information on availability of these nine OPD services as of March 2022 in 19 DHs as shown in **Appendix 3.2** is discussed below:

- All nine services were available at 10 DHs<sup>14</sup>.

<sup>14</sup> 1. Ahwa, 2. Godhara, 3. Mehsana, 4. Nadiad, 5. Navsari, 6. Porbandar, 7. Rajpipla, 8. Vadodara, 9. Veraval and 10. Vyara.

- Only four OPD specialist services were available in two DHs (Chhotaudepur and Lunawada).
- Five OPD specialist services were available in DH Siddhapur.

**(iv) OPD cases per doctor in test-checked DHs**

OPD cases per doctor is an indicator for measuring efficiency of OPD services in a hospital. As per IPHS norms, the minimum number of patients expected to be checked by a doctor is 40 per day.

Information regarding OPD cases registered and number of doctors available in five test-checked DHs during 2021-22 was shown in **Appendix 3.3**. Audit observed that OPD patient load per doctor per day was ranging between 17 and 40.

**(v) Availability of specialist OPD Services in selected SDHs**

As per the IPHS, specialist (having masters in respective branches) OPD services such as General Medicine (GM), General Surgery (GS), Gynecologist (Gyn), Pediatrician (Ped), Orthopedics (Orth), Ophthalmology (Opht.) and ENT should be provided in SDHs.

Audit observed that in test-checked SDHs, OPD specialist services were not continuously available throughout the year in some of the SDHs during the period 2016-22. OPD specialist services for General medicines were available in one SDH<sup>15</sup>, OPD services for General Surgery<sup>16</sup> and Obstetrics & Gynecology<sup>17</sup> were available in five SDHs, and OPD services for Pediatrics<sup>18</sup> and Ophthalmology<sup>19</sup> were available in three and two SDHs respectively for full-time during the period 2016-22. No test-checked SDH could provide the OPD specialist services in respect of ENT and Orthopedics for the entire period during 2016-22. Details of the period for which OPD services were not available in test-checked SDHs during 2016-22 are shown in **Appendix 3.4**.

**(vi) Other basic amenities in OPD premises**

The details of availability of basic amenities in OPD premises in test-checked five DHs and 13 SDHs, 18 CHCs and 36 PHCs are shown in **Table 3.2** below:

**Table 3.2: Details of availability of basic amenities in OPD premises in test-checked DHs/SDHs/CHCs/PHCs during 2021-22**

Details of basic amenities in OPD premises	Numbers of test-checked Public Health Institutions (PHIs) having adequate facilities			
	DHs (05)	SDHs (13)	CHCs (18)	PHCs (36)
Drinking water facility (water purifier)	04	13	15	33
Separate toilet for female	03	12	14	30
Separate toilet for male	03	12	16	32

(Source: Information collected from test-checked DHs/SDHs/CHCs/PHCs)

<sup>15</sup> Bilimora

<sup>16</sup> 1. Bardoli, 2. Chikhali, 3. Mansa, 4. Santrampur and 4. Songadh

<sup>17</sup> 1. Bhiloda, 2. Chikhali, 3. Mansa, 4. Santrampur and 5. Songadh

<sup>18</sup> 1. Chikhali, 2. Mansa and 3. Santrampur

<sup>19</sup> 1. Mansa and 2. Santrampur

RO filtered drinking water was not available at DH Navsari. Separate toilet facility for female and male was not available in DHs Surendranagar and Lunawada and SDHs Dhrangadhra. The MS of DH Navsari accepted that due to shortage of space, RO filtered drinking water was not provided. Adequate basic amenities were not available in two to seven CHCs and three to 14 PHCs out of 18 CHCs and 36 PHCs test-checked by audit.

### **3.2.2 In-Patient Services**

Indoor Patient Department (IPD) refers to the areas of the hospital where patients are admitted, based on the doctor's/specialist's assessment from the Out-Patient Department, Emergency Services and Ambulatory Care.

#### **3.2.2.1 Availability of IPD Services in all DHs**

According to the IPHS, IPD services such as General Medicine, General Surgery, Gynecologist, ENT, Psychiatry, Pediatrician, Orthopedics, and Ophthalmology should be provided in DHs.

Information on availability of these IPD services as of March 2022 in 19 DHs are shown in **Appendix 3.5**. All IPD services were available in 10 DHs.

#### **3.2.2.2 Availability of IPD services in 18 test-checked CHCs**

As per IPHS, CHC should provide specialist services pertaining to General Medicine, General Surgery, Gynecology (and Obstetrics) and Pediatrician. Details of the availability of IPD services in test-checked CHCs during 2016-22 are shown in **Appendix 3.6**.

Audit observed that out of 18 test-checked CHCs-

- In five CHCs<sup>20</sup> none of the IPD services were available during 2016-22.
- In four CHCs<sup>21</sup>, only one IPD service was available for intermittent period during 2016-22.
- In one CHC i.e. CHC Lodhika only one IPD service (Pediatric) was available during 2016-22.
- In one CHC<sup>22</sup>, two IPD services (General Medicine and Pediatric) were available during the period 2016-22.
- In the remaining seven CHCs<sup>23</sup>, IPD services were available for certain period during 2016-22 as shown in **Appendix 3.6**.

<sup>20</sup> 1. Amodara, 2. Jodiya, 3. Kukarmunda, 4. Sanathali and 5. Virpur

<sup>21</sup> 1. Anklachh (Pediatrician), 2. Balasinor (General Surgery), 3. Limzar, (Obstetrics and Gynecology) and 4. Thangadh (General Surgery)

<sup>22</sup> Nardipur

<sup>23</sup> 1. Sadra, 2. Valod, 3. Medhasan, 4. Kalawad, 5. Dholka, 6. Dhandhuka and 7. Wadhwan

- **Bed Occupancy Rate in test-checked MCHs**

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

As per NMC’s norms, the average occupancy of indoor beds shall be a minimum of 75 *per cent* per annum. Details of BOR in test-checked MCHs during 2016-22 are shown in **Table 3.3** below:

**Table 3.3: Statement showing the Bed Occupancy Rate in test-checked MCHs during 2016-22**

Year	Bed Occupancy Rate				
	MCH Ahmedabad	MCH Jamnagar	GMERS MCH Ahmedabad	GMERS MCH Gandhinagar	Brown Field MCH Dahod
2016-17	92	94	84	72	NA <sup>24</sup>
2017-18	83	94	70	74	79
2018-19	88	98	75	77	97
2019-20	95	102	70	82	89
2020-21	83	78	88	54	81
2021-22	87	86	70	52	83

(Source: Information provided by test-checked MCHs)

In GMERS MCH Gandhinagar, it was seen that during the period 2020-22, BOR was much lower than 75 *per cent* per annum. In GMERS MCH Ahmedabad, it was slightly below the norms in 2017-18, 2019-20 and 2021-22.

The ACS, HFWD during the exit conference (June 2023) stated that necessary steps would be taken for improvement of BOR in MCHs.

- **BOR at test-checked DHs**

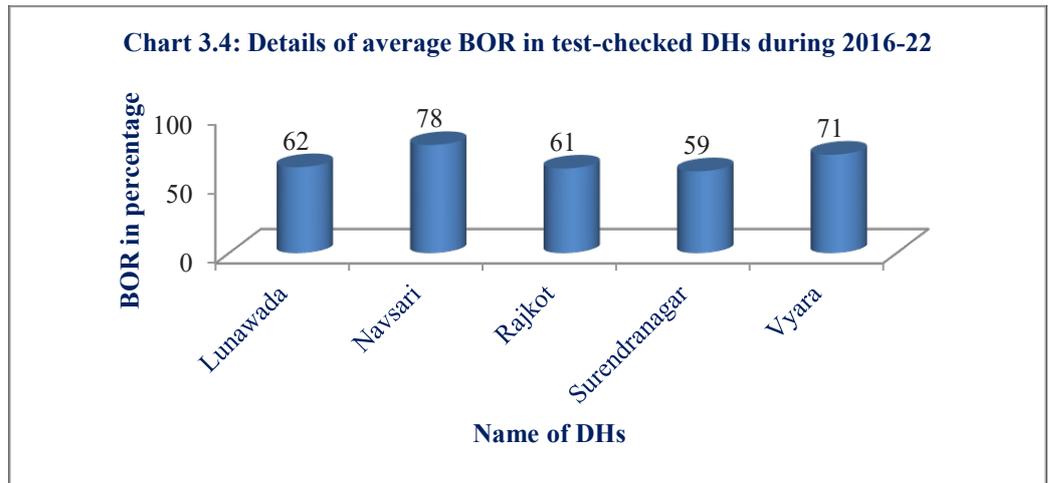
As per NITI Aayog’s Report on best practices in the performance of District Hospitals, a high BOR is an indicator of the health system under pressure. The report states that hospitals cannot operate at 100 *per cent* occupancy, as spare bed capacity is needed to accommodate variations in demand. Lack of available beds increases delays in emergency departments, causes patients to be placed in clinically inappropriate wards and increase the rate of hospital-acquired infections. This also puts staff under pressure to free up beds which can pose a risk to patient safety.

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

As per IPHS, the BOR of district hospitals should be at least 80 *per cent*.

<sup>24</sup> Not applicable as Brown Field MCH Dahod was fully operational from 2017-18.

Details of average BOR in test-checked DHs for the period 2016-22 are shown in **Chart 3.4**:



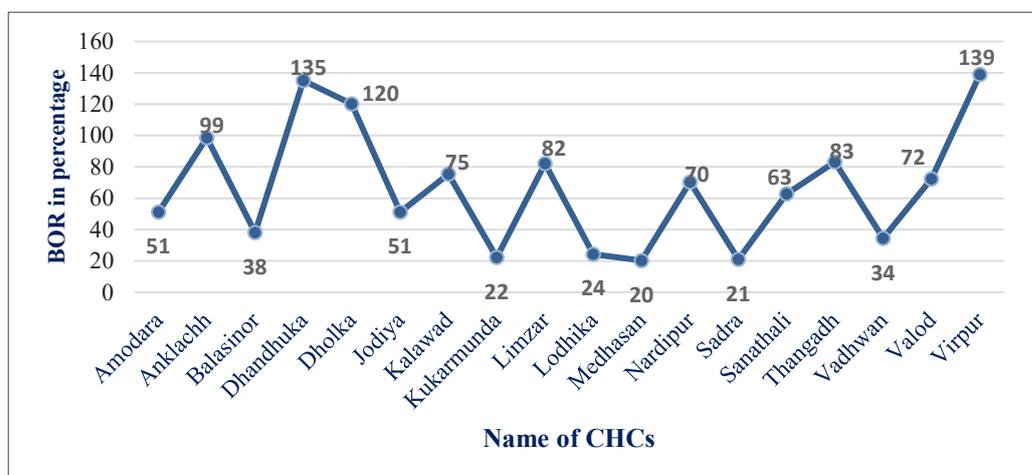
(Source: Information provided by test-checked DHs)

As per above chart, the productivity of all test-checked DHs was below the norm of 80 per cent during the period 2016-22.

- **BOR in test-checked CHCs**

The average BOR in the test-checked CHCs during 2016-22 was as per **Chart 3.5** below:

**Chart 3.5: Average BOR (in per cent) in test-checked CHCs during 2016-22**



(Source: Information provided by test-checked CHCs)

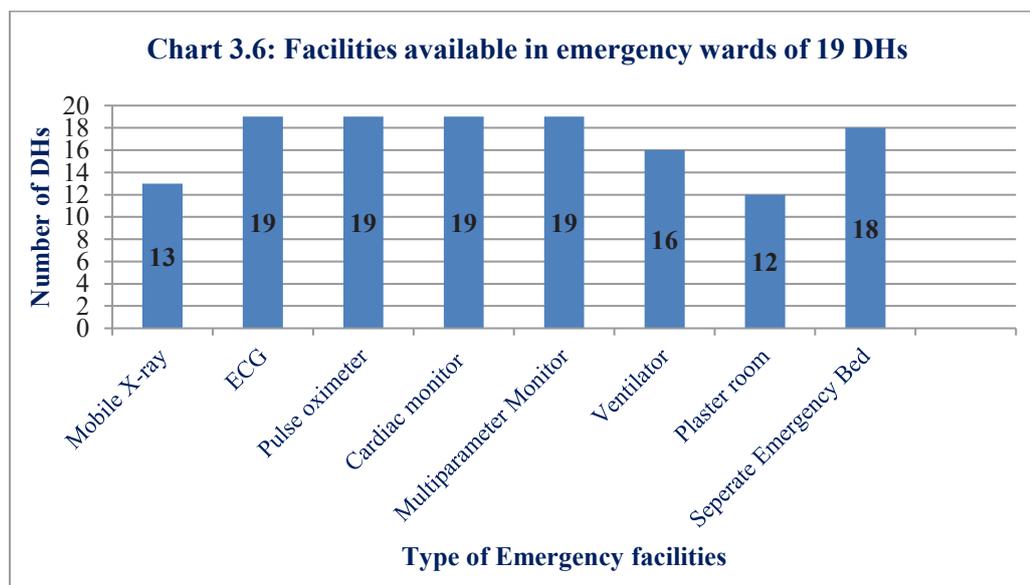
The average BOR of 12 CHCs, out of 18 test-checked CHCs remained low against the norm of 80 per cent during the period 2016-22. Superintendents of the CHCs replied that the high BOR in three CHCs was mainly due to less number of functional beds and admit and discharge of the multiple patients on the same day. The IPD cases admitted in CHCs are mostly acute anaemic ANC women came for administration of IV fluid with Iron and Sucrose. So, multiple IPD patients discharge on the same day after administration of the same.

**Recommendation 3: State Government may take effective steps to provide maximum OPD/IPD services as per Indian Public Health Services.**

### 3.2.3 Emergency Services

As per IPHS, 24x7 operational emergency with a dedicated emergency room shall be available in DHs with adequate manpower and equipment. Emergency Services should have mobile X-ray, laboratory and plaster room facilities. Besides, separate emergency beds may be provided.

Details of availability of various facilities in emergency wards in all DHs during 2021-22 are shown in **Chart 3.6** below:



(Source: Information provided by all DHs)

Audit observed that Plaster room was not available in seven DHs, Mobile X-ray was not available in six DHs and Ventilator was not available in three DHs.

### 3.2.4 Availability of Critical Care Units

As per NMC Regulations, 2020, there shall be well equipped and updated Intensive Care Unit (ICU), Intensive Coronary Care Unit (ICCU), Surgery Intensive Care Unit (SICU), Pediatric Intensive Care Unit (PICU), Neonatal Intensive Care Unit (NICU) and Obstetric High Dependency Unit (HDU)/ICU in MCHs with the minimum number of beds. The availability of beds in critical care units in test-checked MCHs as of March 2022 is shown in **Table 3.4** below:

**Table 3.4: Statement showing the availability of beds in Critical Care Units in test-checked MCHs as of March 2022**

Name of Critical Care Unit	Norms of functional beds for 250 MBBS seats	Number of Functional beds		Norms of functional beds for 200 MBBS seats	Number of Functional beds		
		MCH Ahmedabad (250 MBBS seats)	MCH Jamnagar (250 MBBS seats)		GMERS MCH Ahmedabad (200 MBBS seats)	GMERS MCH Gandhinagar (200 MBBS seats)	Brown Field MCH Dahod (200 MBBS seats)
ICU	20	56	14	15	08	05	12
ICCU	20	08	18	15	00	08	06
SICU	20	08	10	15	06	05	06
PICU	20	30	15	15	07	05	05
NICU	20	120	50	15	25	22	12
Obstetric HDU/ICU	20	06	06	15	05	14	04
<b>Total</b>	<b>120</b>	<b>228</b>	<b>113</b>	<b>90</b>	<b>51</b>	<b>59</b>	<b>45</b>

(Source: Information collected from test-checked MCHs)

Audit observed a shortage of Critical Care Unit beds in two GMERS MCHs and one Brown Field MCH as the number of beds was less than the norms prescribed for various Critical Care Units under NMC Regulation 2020.

**(i) Intensive Care Units in Test-checked DHs**

Intensive care services in DHs are essential for providing minimum assured services as per the IPHS for DHs having more than 100 beds. IPHS prescribes keeping five to 10 *per cent* of total beds for critical care divided between ICU and High Dependency Ward. The comparison of the availability of total beds *vis-a-vis* ICU beds at the test-checked DHs during 2021-22 are shown in **Table 3.5** below:

**Table 3.5: Comparison of availability of ICU beds in test-checked DHs during 2021-22**

Name of District Hospital	Total sanctioned beds	ICU beds	Percentage of beds kept for ICU
Lunawada	100	08	08
Navsari	230	10	04
Rajkot	115	05 (CCU) <sup>25</sup>	04
Surendranagar	150	09	06
Vyara	156	19	12

(Source: Information collected from test-checked DHs)

Audit observed that the ICU ward at DH Rajkot and Navsari were less than the norms prescribed for ICUs under IPHS.

**(ii) Intensive Care Units in Test-checked SDHs**

As per IPHS norms, at least four bedded ICUs should be available in SDH and about 10 *per cent* of total beds should be kept for ICU and High Dependency Wards for critical care of patients. Audit observed that out of 13 test-checked

<sup>25</sup> Cardiac Care Unit

SDHs, ICU wards were available at only two SDHs (Limbd, and Viramgam), which were kept unused as observed during joint field visit (March-July 2022) of these two SDHs.

Audit observed that the new hospital building for SDH Viramgam was constructed and handed over for hospital use since February 2022. However, the ICU ward (five beds) and ICCU ward (three beds) provided with all required equipment/beds, etc. was not put to use (July 2022) as the post of Anesthetist was vacant, as shown in **Picture 3.1** and **Picture 3.2**:



### 3.2.5 Operation Theatre

#### (i) Operation Theatre in selected MCHs

As per NMC Regulations, 2020, 10 Operation Theatres<sup>26</sup> are required in MCH having an intake capacity of 200 MBBS students and 11 Operation Theatres<sup>27</sup> are required in MCH having an intake capacity of 250 MBBS students. The details of the operation units available at test-checked MCHs are shown in **Table 3.6**.

**Table 3.6: Number of available operation units in the test-checked MCHs**

Name of MCH	Number of MBBS Seats	General Surgery	ENT	Gynaecology	Paediatrics	Ophthalmic	Orthopaedic	Septic
MCH Ahmedabad	250	11	02	06	03	NA*	07	01
MCH Jamnagar	250	01	02	02	00	02	04	00
GMERS Ahmedabad	200	03	02	04	00	02	02	00
GMERS Gandhinagar	200	01	01	01	00	01	01	00
Brown Field MCH Dahod	200	03	01	03	01	02	02	01

\*Available as a separate Eye Hospital

(Source: Information collected from test-checked MCHs)

<sup>26</sup> Four operation units may be provided for General Surgery, one for ENT; one for Orthopedics; one for Ophthalmology and two for Obstetrics and Gynecology and one for Septic cases.

<sup>27</sup> Five operation units may be provided for General Surgery, one for ENT; one for Orthopedics; one for Ophthalmology and two for Obstetrics and Gynecology and one for Septic cases.

It was noticed that Operation Theatres for Pediatrics was not available in three MCHs (MCH Jamnagar, GMERS Ahmedabad and GMERS Gandhinagar). Further, Operation Theatres for General Surgery were short in four MCHs (MCH Jamnagar, GMERS Ahmedabad, GMERS Gandhinagar and Brown Field MCH Dahod).

Septic operation unit was not available in three MCHs (MCH Jamnagar, GMERS Ahmedabad and GMERS Gandhinagar).

- **Infrastructure of OTs in test-checked MCHs**

As per NMC norms each Operation Theatre (OT) Unit shall consist of (i) a pre-operative room (one bed per OT unit), (ii) a post-operative recovery room (two beds per OT unit), (iii) nurse room, (iv) observation gallery for students, etc.

The audit observed the following in five test-checked MCHs as of August 2022-

- Pre-operative beds- one against a norm of two beds in Ophthalmology OT (MCH Jamnagar)
- Post-operative beds- 13 against a norm of 22 (MCH Jamnagar), five instead of norms of eight beds in one OT<sup>28</sup> (GMERS MCH Ahmedabad)
- Nurse room was not available in Ophthalmology OT (MCH Jamnagar)
- Observation gallery for students was not available in any OT of MCH Ahmedabad and of MCH Jamnagar and in one OT (Gynecology) (GMERS Gandhinagar)

- (ii) **Operation Theatre in test-checked DHs**

IPHS Guidelines prescribe one OT for elective major surgery, one OT for emergency services and one OT for ophthalmology/ENT for DHs having bed strength of 101 to 200, whereas two OTs for elective major surgery have been prescribed for hospitals have bed strength of 201 to 300. The availability of OTs in test-checked DHs during 2021-22 was shown in **Table 3.7** below:

**Table 3.7: Details of availability of Operation Theatres in test-checked DHs during 2021-22**

Name of District Hospital	Total sanctioned beds	Number of OTs required	Number of OTs available
Lunawada	100	03	01
Navsari	230	04	06
Rajkot	115	03	03
Surendranagar	150	03	03
Vyara	156	03	03

(Source: Information collected from test-checked DHs)

<sup>28</sup> Gynecology

There was shortfall of two OTs in DH Lunawada out of five test-checked DHs in the State as of 2021-22.

- *Availability of essential equipment for OTs in test-checked DHs*

Audit checked the availability of essential equipment such as Auto Clave HP Horizontal, Auto Clave HP Vertical, Operation Table Hydraulic Major and Minor *etc.* prescribed in IPHS for OTs in five test-checked DHs during 2021-22 and observed significant shortages, as shown in **Table 3.8** below:

**Table 3.8: Details of availability of essential equipment in test-checked DHs during 2021-22**

Name of District Hospital	Number of essential equipment required as per IPHS	Number of essential equipment available	Percentage of equipment available
Lunawada	21	11	52
Navsari	22	11	50
Rajkot	21	09	43
Surendranagar	21	13	62
Vyara	21	08	38

(Source: Information collected from test-checked DHs)

As evident from the above table, the number of essential equipment in OTs was less than required in respect of five test-checked DHs. The Medical Superintendents of DHs stated that the works of non-available equipment were done with other alternate equipment.

- *Average surgeries per Surgeon<sup>29</sup> per annum in test-checked DHs*

Details of numbers of Surgeon available and numbers of surgeries carried out by them during 2021-22 in test-checked DHs are shown in **Table 3.9** below:

**Table 3.9: Details of average surgeries per Surgeon per annum in test-checked DHs during 2021-22**

Particular	DH Lunawada	DH Navsari	DH Rajkot	DH Surendranagar	DH Vyara
Number of Surgeon available during 2021-22	02	05	04	05	08
Number of Surgeries done during 2021-22	543	1,619	2,354	382	1,429
Average surgeries per Surgeon per annum	272	324	589	76	179

(Source: Information provided by test-checked DHs)

As seen from the above table, average surgeries per Surgeon per annum was higher at DH Lunawada, DH Rajkot and Navsari, whereas, it was low at DH Surendranagar.

<sup>29</sup> Surgeon includes General Surgeon, ENT, Gynecologist, Orthopedics and Ophthalmologist

- **Availability of surgical procedure in test-checked DHs**

Audit analysed the availability (as of March 2022) of 12 surgical procedures (Removal of Foreign Bodies, Wiring, Plating, Grafting and Pinning, Hernia, Hydrocele, Appendicectomy, Hemorrhoids and Fistula, Cranial cavity, Tracheostomy, Urethra and Fibroadenoma excision of breast) in the five test-checked District Hospitals (**Appendix 3.7**) which revealed the following:

- None of the above stated 12 surgical procedures were performed in DH Lunawada.
- The Cranial Cavity surgical procedure was not performed in any of the test-checked DHs.
- Urethra surgical procedure was performed in one DH (Vyara).
- Wiring, Plating and Grafting and Pinning surgical procedure were not performed in two DHs (Rajkot and Surendranagar).

### 3.2.6 Blood Bank/Blood Storage Unit

- **Availability of Blood Bank in all 19 DHs**

As per IPHS 2012 guidelines, DHs are required to have Blood Bank as essential service.

Details of availability of Blood Bank services in all 19 DHs are shown in **Appendix 3.8**. Audit observed that out of 19 DHs, Blood Banks were available in seven DHs<sup>30</sup> whereas in nine DHs<sup>31</sup>, Blood Storage Unit was available. However, in three DHs (Botad, Navsari and Veraval) neither Blood Bank nor BSU was available.

- **Availability of Blood Storage Unit in test-checked SDH**

Further, as per IPHS 2012 norms for SDHs envisaged the availability of 'Blood Storage Unit' (BSUs) in each SDH.

Audit observed that out of 13 test-checked SDHs, Blood Storage Unit was available in 12 SDHs. However, BSU was not available in SDH Bilimora.

The CoH during the exit conference (June 2023) agreed with audit observations and stated that the matter would be looked into, and necessary action taken.

**Recommendation 4: State Government may ensure to make Emergency/Operation Theatre/Blood Bank services available in all secondary healthcare facilities with the required manpower and equipment.**

<sup>30</sup> 1. Godhara, 2. Jam Khambhaliya, 3. Morbi, 4. Nadiad, 5. Porbandar, 6. Siddhpur and 7. Surendranagar

<sup>31</sup> 1. Ahwa, 2. Chhotaudepur, 3. Lunavada, 4. Mehsana, 5. Petlad, 6. Rajkot, 7. Rajpipla, 8. Vadodara and 9. Vyara

### 3.2.7 Maternity Services

Maternity service means the healthcare service provided in relation to pregnancy, labor and childbirth, and the postpartum period. Details of availability of beds for Maternal and Childcare services in all 19 DHs as of March 2022 are shown in **Appendix 3.9**. Audit observed that Childcare beds in Special Newborn Care Unit (SNCU) were not available in two DHs (Botad and Lunawada).

- **Antenatal Care (ANC) in Sub-Centres**

ANC registration in rural areas is the primary responsibility of Sub-Centres (SCs). Audit observed in test-checked 36 SCs that out of 17,095 ANC registrations, 14,586 (85 *per cent*) registration made in 1<sup>st</sup> trimester i.e., before or at the 12<sup>th</sup> week of pregnancy and 13,416 (78 *per cent*) provided four ANC check-ups during the period 2016-22. Further, 14,397 (84 *per cent*) of registered pregnant women were administered two doses of Tetanus Toxoid (TT).

## 3.3 Establishment of new Medical Colleges in the State

- **All India Institute of Medical Sciences, Rajkot**

All India Institute of Medical Sciences (AIIMS) Rajkot was established at Rajkot in December 2020. Patient care services on an Outdoor patient (OP) basis were started by 11 Departments<sup>32</sup> since December 2021. Indoor patient care for general, specialty and super-specialty was not started till May 2023. The MBBS course with 50 annual seats was started from 2020-21. Out-Patients services to 45,128 patients (4,083 persons in 2021-22 and 41,045 persons in 2022-23) were provided broadly by 11 Departments.

- **Other Medical Colleges**

One Medical College and Hospital (MCH) was established by GMERS during 2017-18 at Vadnagar (District Mehsana).

## 3.4 Support Services

IPHS and National Health Mission Assessor Guides 2013 prescribed basic support services i.e., Diagnostics, Radiology, Dietary and Ambulance, *etc.* in healthcare facilities.

### 3.4.1 Diagnostic Services

- **Radiology Services**

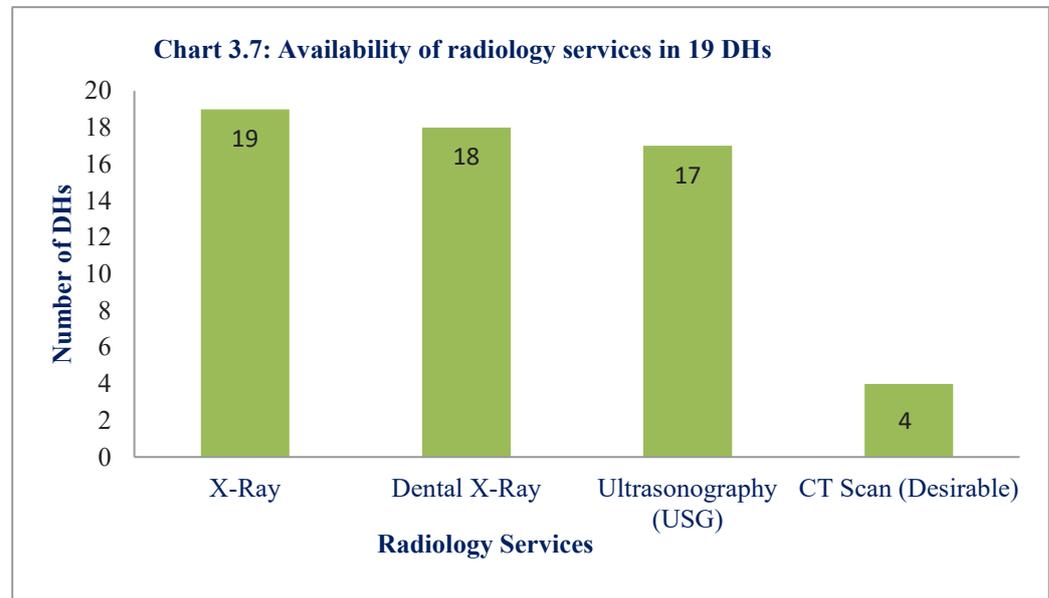
Indian Public Health Standards (IPHS) 2012 prescribed four services for the DH (X-ray, Dental X-ray, Ultrasonography as essential services and CT scan

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<sup>32</sup> Dentistry, Dermatology, ENT, General Medicine, General surgery, Obstetrics, Ophthalmology, Orthopedics, Pediatrics, Psychiatrics and Pulmonary Medicine.

as desirable service) and three services for SDH (X-ray, Dental X-ray and Ultrasonography).

Details of the availability of radiology services in all 19 DHs in the State are shown in **Chart 3.7** below:



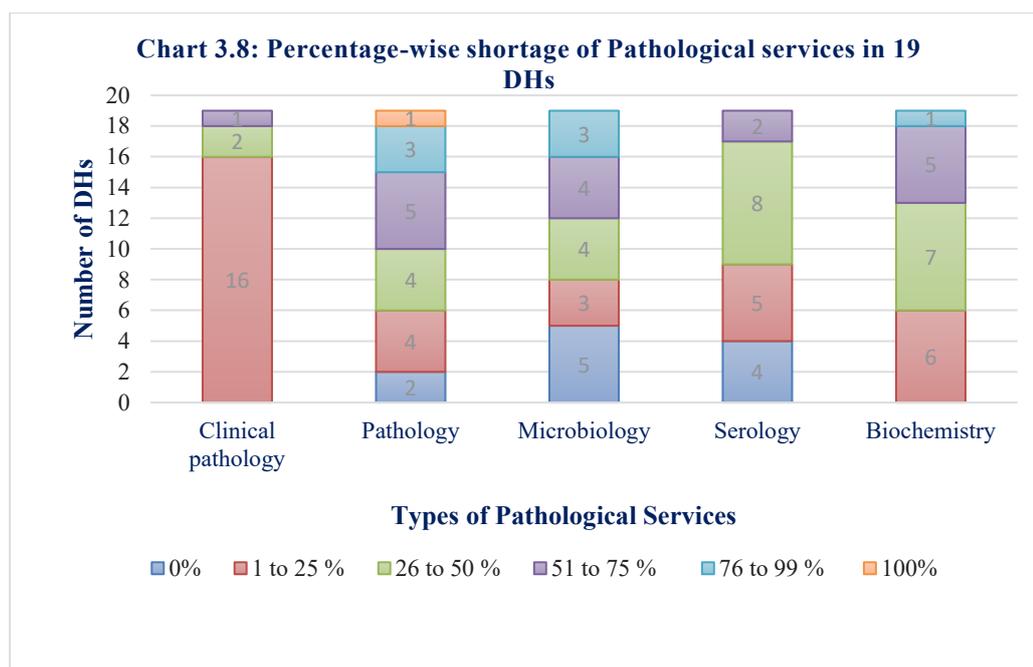
(Source: Information provided by all DHs)

Audit observed that out of 19 DHs, X-Ray facilities were available in all 19 DHs, Dental X-Ray were available in 18 DHs and Ultrasonography facility was available in 16 DHs. CT scan was available at four DHs<sup>33</sup>. However, it was functioning at only two DHs (DH Nadiad and DH Porbandar). The CoH during the exit conference (June 2023) stated that there was a shortage of Radiologist Doctors in the State and hence, Ultrasonography service could not be provided. It was further stated that Ultrasonography service had been provided through outsourcing.

- **Pathology Services**

IPHS prescribed 72 types of pathological investigations for DHs. Details of the availability of pathological services in all DHs in the State are given in **Appendix 3.10**. Audit analysis showing percentage-wise shortage of pathological services in all DHs are given in **Chart 3.8** below:

<sup>33</sup> 1. Morbi, 2. Nadiad, 3. Porbandar and 4. Surendranagar



(Source: Information collected from all DHs)

**Recommendation 5: State Government may ensure to provide all Radiology and Pathology services to patients as per norms prescribed under Indian Public Health Standards.**

### 3.4.2 Ambulance Services

- **Availability of Ambulance Service – 108 in the State**

As per the NHM Guidelines, one Basic Life Support (BLS) ambulance for one lakh population and one Advance Life Support (ALS) ambulance for five lakh population should be available.

A Memorandum of Understanding (MOU) was entered (August 2010) between the Government of Gujarat and GVK- Emergency Management and Research Institute (EMRI), Secunderabad (renamed as EMRI Green Health Services) to provide a comprehensive ‘Emergency Response Service’ to those in Medical, Police or Fire emergencies, through a single toll-free number – 108 on Public Private Partnership (PPP) mode.

Analysis of information provided by EMRI Green Health Services on the availability of 108 ambulance services revealed a consistent shortage of BLS ambulances during 2016-22 against the requirement shown in **Table 3.10:**

**Table 3.10: Availability of ALS and BLS ambulances under 108 ambulance services in the State**

Year	The population of the State (in lakh)	BLS ambulances required as per norms	ALS ambulances required as per norms	Availability		Shortage of BLS ambulances against the requirement	Shortage/ Excess (-) of ALS ambulances against the requirement
				BLS ambulances	ALS ambulances		
2016-17	670.26	670	134	453	132	217	02
2017-18	681.99	682	136	453	132	229	04
2018-19	693.92	694	139	451	136	243	03
2019-20	706.07	706	141	486	136	220	05
2020-21	718.42	718	144	456	166	262	-22
2021-22	731.00	731	146	633	167	98	-21

(Source: Information provided by EMRI Green Health Services)

The above table shows that there was a shortage of BLS ambulances against the requirements as per the requirement.

- *Response time in providing emergency services by 108 Ambulance service.*

As per provision of the MoU, GVK EMRI shall make efforts to achieve average response time of equal to or less than 20 minutes in urban areas and 30 minutes in rural areas from the call to site.

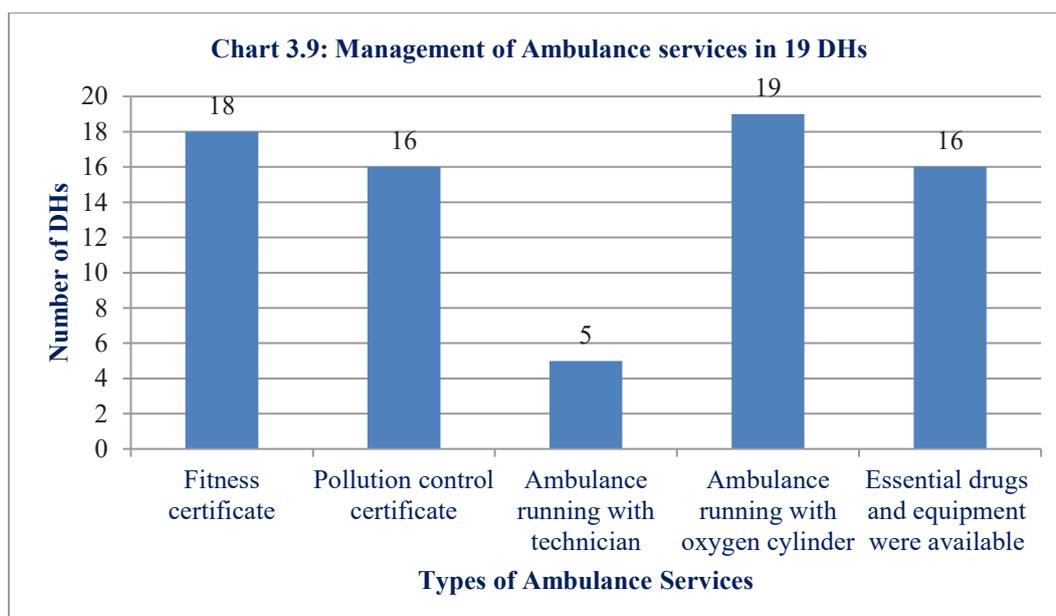
Audit analysis of 2,67,760 cases (three-month data from January 2021 to March 2021 provided by GVK EMRI revealed that in 11,910 cases (urban areas) and 30,987 cases (rural areas), the response time was more than the stipulated time of 20 minutes in urban areas and 30 minutes in rural areas respectively.

- *Availability of Ambulances in all 19 DHs and 18 test-checked CHCs and 36 PHCs*

As per the IPHS, DHs are required to have three running ambulances with well-equipped BLS.

Details of availability of Ambulance Services in all DHs as of March 2022 are shown in **Appendix 3.11**. There was a shortage of one ambulance in five DHs.

Further, audit observations on management of ambulance services in all DHs are shown in **Chart 3.9** below:



(Source: Information provided by 19 DHs)

- **Availability of Ambulances in test-checked CHCs and PHCs**

IPHS provides a round-the-clock ambulance service with a basic life support system in a CHC. As per IPHS Guidelines, it is desirable that the PHC has ambulance facilities for the transport of patients for timely and assured referral to functional FRUs in case of complications during pregnancy and childbirth. Serviceability and availability of equipment and drugs in ambulances are required to be checked daily. Audit observed that Ambulance service was available in 16 test-checked CHCs and eight PHCs, out of 18 test-checked CHCs and 36 test-checked PHCs respectively.

- The ambulance with basic life support was available in four CHCs<sup>34</sup> and two PHCs<sup>35</sup>.
- None of the available ambulances had been provided with technician as required under IPHS.
- Oxygen cylinders were available in 10 out of 16 ambulances of CHCs and two out of eight ambulances of PHCs.
- Serviceability and availability of equipment and drugs in the ambulance were not checked daily by any of the test-checked CHCs and PHCs except two CHCs and two PHCs.
- The ambulances lacked the drugs and equipment that are required to be available in each ambulance except at two CHCs and three PHCs.
- In CHC Dholka, ambulance service was not available, though a regular ambulance driver was available.

<sup>34</sup> 1. Jodiya, 2. Kalawad, 3. Vadhwan and 4. Valod.

<sup>35</sup> 1. Pithad and 2. Rancharda.

### 3.4.3 *Dietary Services at DHs*

The IPHS stipulates that healthy and nutritious food should be provided.

Audit observed that:

- Dietary services were being provided either outsourced or inhouse in 18 DHs out of 19 DHs.
- Dedicated kitchen was available in 13 DHs.
- Dietician was available in two DHs (Morbi and Vyara).
- Diet register was maintained by 17 DHs.
- Food checked by hospital management in 16 DHs.

### 3.4.4 *Mortuary Services*

#### • *Mortuary Services in DHs*

As per IPHS, facility for keeping dead bodies and conducting autopsy are required in DHs. A separate room for dead body storage shall be provided with at least two deep freezers for preserving the body.

The availability of mortuary and related facilities in all DHs was shown in **Appendix 3.12**. Out of 19 DHs, Mortuary Service was not available in four DHs<sup>36</sup>.

## 3.5 **Auxiliary Service**

### 3.5.1 *Fire Safety system*

As per IPHS 2012, Hospital Management Policy should emphasise on hospital buildings with fire protection features. Further, National Building Code of India 2016, Part-4 Fire and Life Safety requires that fire extinguishers must be installed in every hospital, so that in case of any fire in the hospital premises, the safety of the patients/ attendants/ visitors and the hospital staff may be ensured.

#### • *Availability of fire safety system in DHs*

Audit observed that Fire No Objection Certificate was not obtained by three DHs<sup>37</sup>. The details of the availability of firefighting system in all DHs as of March 2022 are shown in **Appendix 3.13**.

#### • *Availability of fire safety system in test-checked 18 CHCs and 36 PHCs*

The details of the availability of fire extinguishers and other items in test-checked 18 CHCs and 36 PHCs as of March 2022 are shown in **Table 3.11** below:

<sup>36</sup> 1. Ahwa, 2. Chhotaudepur, 3. Rajkot and 4. Vadodara

<sup>37</sup> 1. Mehsana, 2. Morbi and 3. Siddhpur

**Table 3.11: Details of availability of fire equipment**

Equipment/ compliance	statutory	Number of CHCs, where fire safety systems are available	Number of PHCs, where fire safety systems are available
Smoke detector		03	00
Fire Alarm		03	01
Extinguishers		18	36
Fire Hydrants		00	00
Sand buckets		01	03
Underground backup water for fire		01	00
Evacuation signage		05	07
Fire extinguisher in power back up area		04	00

(Source: Joint Physical verification of test-checked CHCs and PHCs)

Audit observed that:

- As per the hospital safety guidelines for Fire Fighting, the underground static water tank should remain full at all times to meet any contingency. However, in 17 test-checked CHCs and 36 test-checked PHCs, the underground static water tank was not constructed for meeting the fire emergency.
- Fire hydrants<sup>38</sup> intended to provide water to the firemen were not installed in any of the test-checked CHCs and PHCs.
- Illuminated signage for the fire exit was not available in 13 CHCs and 29 PHCs.
- In 14 test-checked CHCs and in all 36 test-checked PHCs, fire extinguishers were not installed at the power backup area.

### 3.5.2 Infection Control

Infection control practices are important in maintaining a safe environment for both patients and staff in the hospitals by reducing the risk of potential spread of hospital-associated infections.

- **Standard Operating Procedure**

It is required under NHM Assessor’s Guidebooks for DHs and SDHs to frame a schedule of procedures (checklist for infection control) to be followed by the health care facilities known as Standard Operating Procedures (SOPs) and a Hospital Infection Control Committee (HICC) requires to be in place. Details of the availability of SOP and HICC in the test-checked DHs and SDHs during 2016-22 are shown in **Table 3.12** below:

<sup>38</sup> Fire hydrant installation consists of a system of pipe work connected directly to the water supply main to provide water to each and every hydrant outlet and is intended to provide water to the firemen.

**Table 3.12: Availability of SOPs and Hospital Infection Control Committee in the test-checked 05 DHs and 13 SDHs**

Year	SOPs available		Hospital Infection Control Committee available	
	DHs	SDHs	DHs	SDHs
2016-17	03	06	03	07
2017-18	03	07	03	09
2018-19	03	08	03	09
2019-20	03	08	03	09
2020-21	03	09	04	09
2021-22	03	09	04	09

(Source: Information collected from test-checked DHs and SDHs)

Audit observed that SOPs for infection control were available in three out of five test-checked DHs and nine out of 13 test-checked SDHs during 2021-22. Further, Hospital Infection Control Committees were formed in four out of five test-checked DHs and nine out of 13 test-checked SDHs during 2021-22.

- **Bio-Medical Waste Service**

Bio-Medical Waste (BMW) is generated during procedures related to diagnosis, treatment and immunisation in the hospitals and its management is an integral part of infection control within the hospital premises. The Bio-Medical Waste Management Rules, 2016 (BMWM Rules) framed by GoI *inter alia* stipulate the procedures for collection, handling, transportation, disposal, and monitoring of the BMW. Details of availability of various BMW management services in all DHs as of March 2022 are shown in **Appendix 3.14**. Audit observed that bar code system was not implemented by 10 DHs<sup>39</sup> and training to workers handling BMW was not provided by three DHs<sup>40</sup>.

- **Pest and Rodent Control**

Controlling the spread of infection through rodents and pests in the hospitals is an important component of infection control practices as per NHM Assessor's Guidebook. The details of pest and rodent control done in all the DHs and test-checked 13 SDHs are shown in **Appendix 3.15 and Appendix 3.16** respectively.

As seen from the **Appendix 3.15**, pest and rodent control was not carried out at ten DHs<sup>41</sup> during 2016-22. In test-checked SDHs (**Appendix 3.16**), pest and rodent control work was not done in five SDHs (Bhiloda, Dhrangadhra, Jasdan, Santrampur and Songadh), whereas in the remaining SDHs, it was done one to four times during 2016-22.

<sup>39</sup> 1. Botad, 2. Jam-Khambhaliya, 3. Lunawada, 4. Mehsana, 5. Morbi, 6. Petlad, 7. Porbandar, 8. Rajpipla, 9. Veraval and 10. Vyara

<sup>40</sup> 1. Botad 2. Lunawada and 3. Veraval

<sup>41</sup> 1. Botad, 2. Chhotaudepur, 3. Godhara, 4. Lunawada, 5. Mehsana, 6. Petlad, 7. Rajpipla, 8. Siddhapur, 9. Surendranagar and 10. Veraval.

- **Disinfection and Sterilisation**

As per Hospital Infection Control Guidelines of the ICMR, disinfection and sterilisation help prevent the build-up of bacteria/viruses, *etc.* on the medical tools, linen and consumables and reduce the chances of spread of infection in patients and staff of hospitals. NHM Assessor’s Guidebook recommends Boiling, Autoclaving, Chemical Sterilisation and High-Level Disinfection (HLD) for disinfection/sterilisation in the DHs and SDHs.

Availability of the methods of disinfection and sterilisation in all DHs and the test-checked SDHs are shown **Appendix 3.17** and **Appendix 3.18** respectively. Audit observed that all required methods of disinfection and sterilisation were available only in five DHs<sup>42</sup>.

**Recommendation 6: State Government may take effective steps to improve all Auxiliary Services in all Government Healthcare facilities.**

### 3.5.3 Citizen’s Charter

NHM Assessor’s Guidebook prescribes the requirement to display the Citizen’s Charter at a suitable place in the healthcare facilities towards facilitating patients’ rights, services available, user fees charged, if any, and a grievance redressal system. Citizens’ Charter should always be in the local language.

Audit observed in test-checked CHCs/PHCs that Citizen’s Charter was not available in four CHCs<sup>43</sup> and nine PHCs<sup>44</sup>. Further, where Citizen’s Charter was available, patients’ rights were not displayed in nine CHCs (50 *per cent*) and 19 PHCs (53 *per cent*). Out of 36 test-checked Sub-Centres, Citizen’s Charter was not available in 31 (86 *per cent*) Sub-Centres

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<sup>42</sup> 1. Chhotaudepur, 2. Nadiad, 3. Surendranagar, 4. Vadodara and 5. Vyara.

<sup>43</sup> 1. Kukarmunda, 2. Lodhika, 3. Nardipur and 4. Virpur.

<sup>44</sup> 1. Akru, 2. Bar, 3. Dhanaj, 4. Guthli, 5. Janod, 6. Morthala, 7. Navagam Than, 8. Sadagvan and 9. Sathamba.