Chapter 3- Healthcare Services

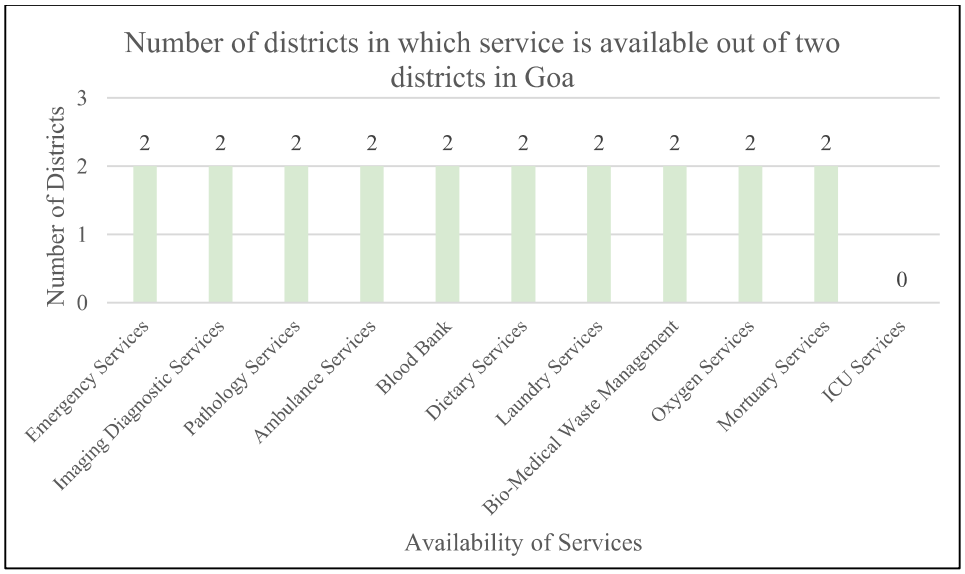
North Goa District Hospital (NGDH), Mapusa and all Community Health Centres (CHCs) in the State could not achieve the required Bed Occupancy Rate as per Indian Public Health Standards, 2012 (IPHS) norms. There were gaps in availability of essential IPD services as per IPHS norms in both the District Hospitals, in all CHCs in the State and the test-checked Sub-District Hospital. ICU services were not available in both the District Hospitals of the State. Auxiliary services in Goa Medical College and Hospital (GMCH) and support and auxiliary services in test-checked hospitals under DHS were not as per norms. Deficiencies were noticed in the availability of required fire safety equipment. The Citizen's charter, meant to enforce accountability of organisations to citizens for the delivery of public services was not in place in GMCH and was deficient in test-checked PHIs under DHS.

3.1 Introduction

The National Health Policy (NHP), 2017 (Para 2.3.2) suggests reinforcing the trust in public healthcare system by making it predictable, efficient, patient centric, affordable and effective, with a comprehensive package of services and products that meet immediate health care needs of most people.

The healthcare services are broadly divided into three categories, namely Line Services, Support Services and Auxiliary Services. The availability of Line and Support Healthcare services in District Hospitals of Goa are shown in **Chart 3.1.**

Chart 3.1: Availability of Line and Support healthcare services in District Hospitals in North Goa District Hospital (NGDH) and South Goa District Hospital (SGDH)



(Source: Information furnished by North Goa District Hospital and South Goa District Hospital)

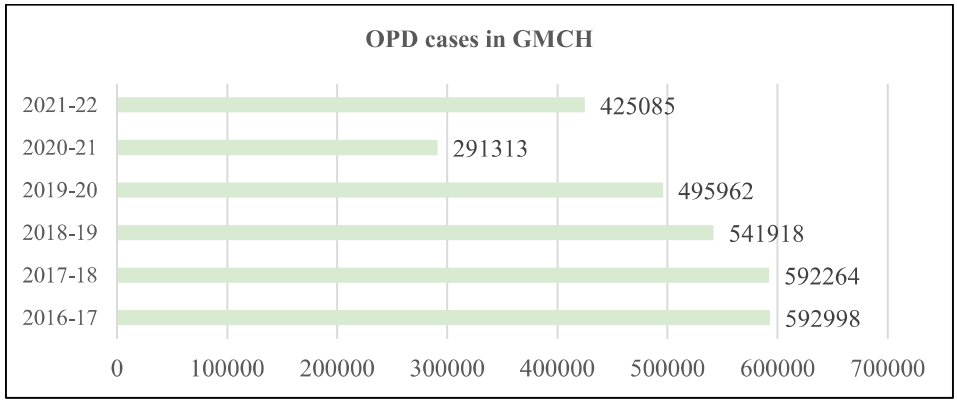
ICU services were not available in both the District Hospitals of Goa. Non-operation of ICU in NGDH, Mapusa has been mentioned in Chapter 5 (Paragraph No. 5.3.2.3) of this report.

Audit findings on the availability and management of healthcare services in the State are discussed in subsequent paragraphs.

3.2 OPD, IPD services and Bed Occupancy Rate (BOR) in GMCH

An Out-Patient Department (OPD) is the part of a hospital designed for the treatment of people with health problems who visit the hospital for diagnosis or treatment, but do not require a bed or to be admitted for overnight care. The number of OPD patients visiting GMCH during 2016-22 in shown in **Chart 3.2.**

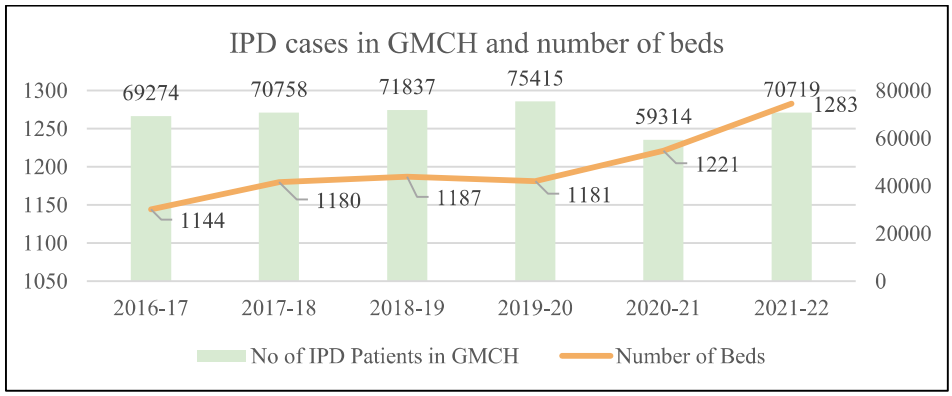
Chart 3.2: OPD cases in GMCH



(Source: Information provided by GMCH)

In-Patient Department (IPD) refers to the areas of the hospital where patients are accommodated after being admitted, based on doctor's/specialist's assessment, from the OPDs, Emergency Services and Ambulatory Care due to their medical condition. The number of patients admitted in the IPD of GMCH during the period 2016-22 ranged from 59,314 to 75,415. The availability of beds in GMCH during 2016-22 and number of IPD patients in GMCH is shown in **Chart 3.3**.

Chart 3.3: IPD cases per year and the availability of beds in GMCH

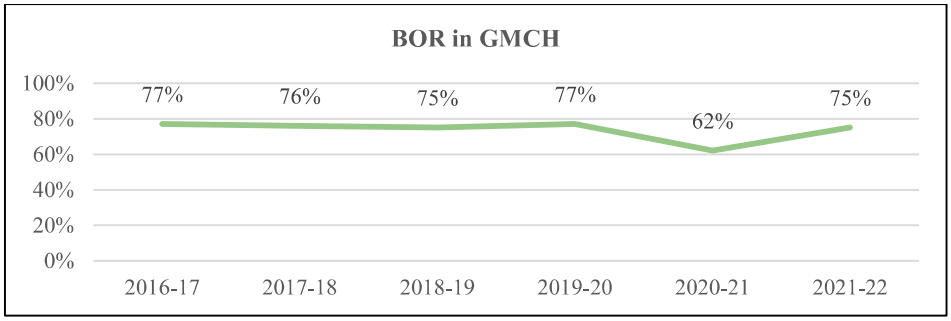


(Source: Information provided by GMCH)

Bed Occupancy Rate (BOR)[1] in hospitals refers to the percentage of hospital beds that are occupied by patients at a given time. BOR reflects the efficiency in the use of available hospital beds and is an indicator of quality of services, infrastructure, trained staff, patient care and satisfaction provided by the facility. As per National Medical Commission, 2020 (NMC) norms, average occupancy of indoor beds shall be a minimum of 75 *per cent* per annum.

The BOR in GMCH during 2016-22 is shown in **Chart 3.4** below.

Chart 3.4: BOR in GMCH during 2016-22



(Source: Information provided by GMCH)

The BOR in GMCH was equal or above the minimum norm of 75 *per cent* (except in 2020-21) during 2016-22.

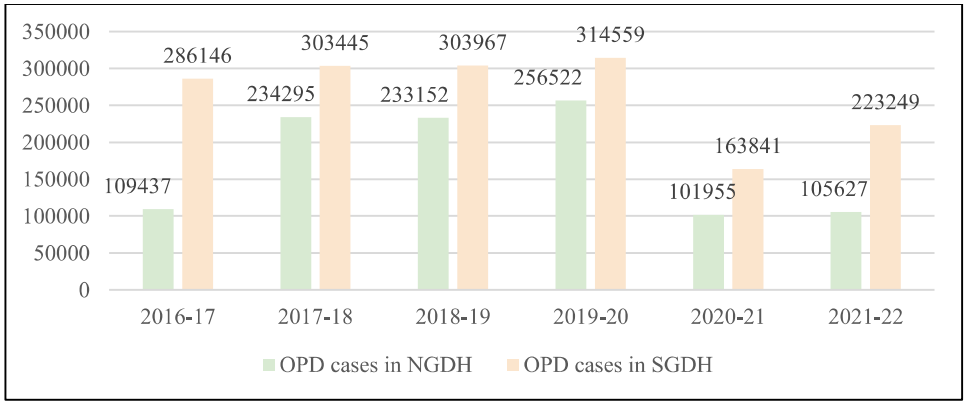
The Dean, GMCH accepted the observation and stated (October 2023) that the BOR was affected in 2020-21 due to COVID-19 pandemic.

3.3 OPD, IPD services and BOR in PHIs under DHS

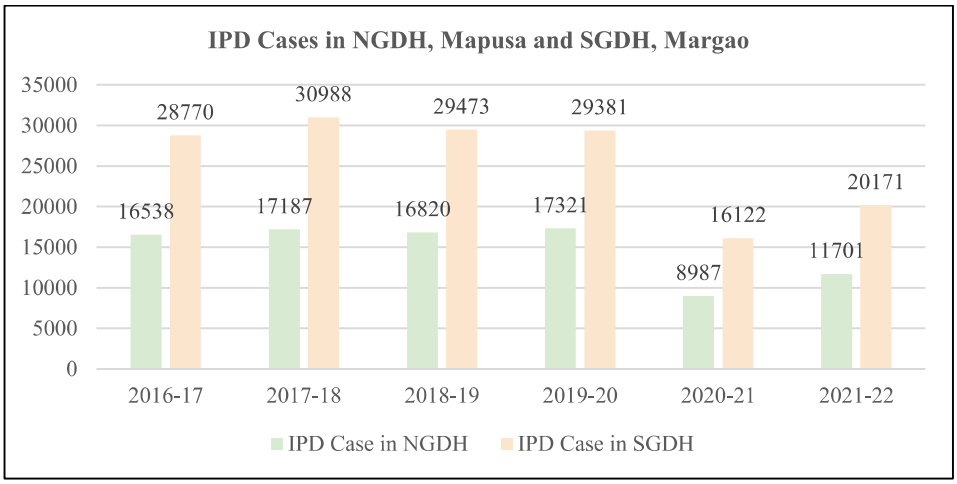
3.3.1 OPD and IPD services in District Hospitals and CHCs

The district hospital is the apex healthcare institution in secondary level of public healthcare. There are two district hospitals in Goa. The OPD cases, IPD cases in district hospitals during the period 2016-22 is shown in **Chart 3.5 below:**

Chart 3.5 A: OPD and IPD cases in District Hospitals



[1] BOR = (Number of occupied beds × 100) / (total number of functional beds × 365)

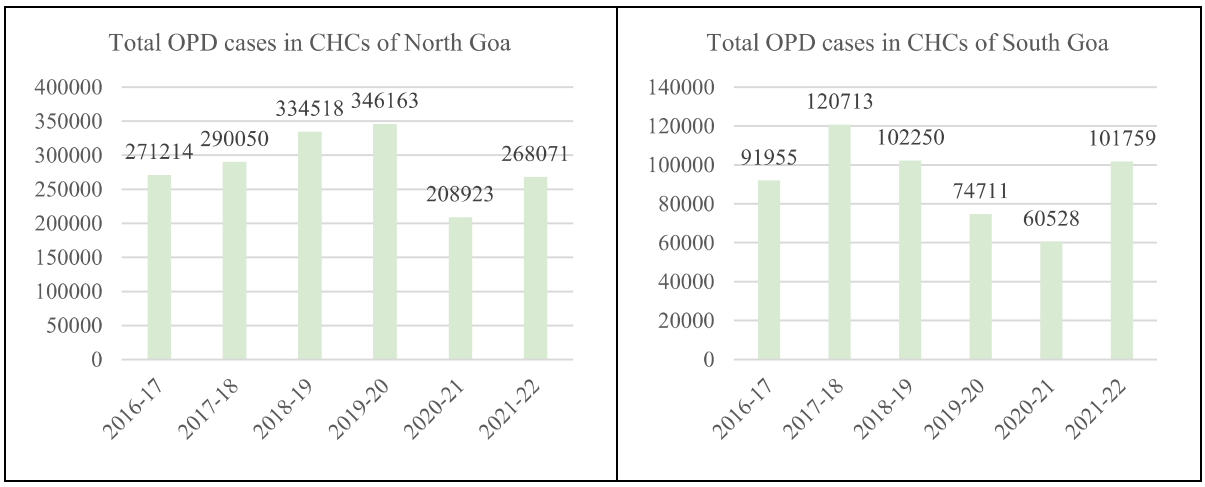


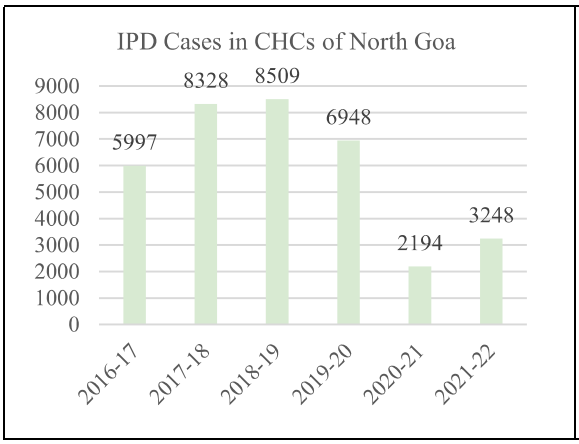
(Source: Information furnished by NGDH and SGDH)

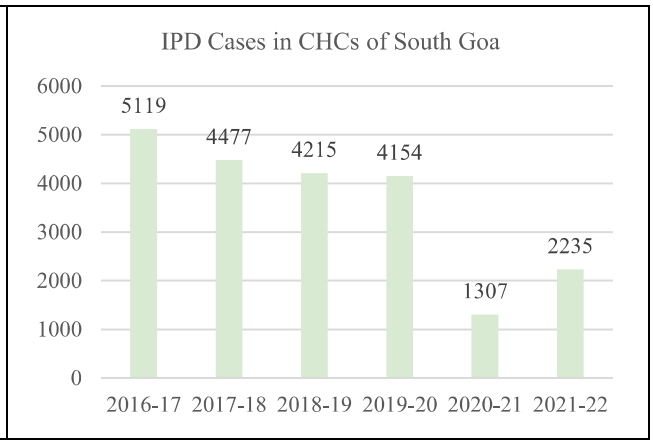
Details of patient per day per Registration Counter and OPD cases per day per doctor in NGDH, Mapusa are shown in **Appendix 3.1**.

The Community Health Centre constitute the secondary level of healthcare and are designed to provide referral as well as specialist healthcare to the rural population. The district wise IPD and OPD cases in CHCs during the period 2016-22 is shown in **Chart 3.6** below.

Chart 3.6: District wise OPD and IPD cases in CHCs







(Source: Information provided by DHS)

Details of patient per day per Registration Counter and OPD cases per day per doctor in test checked CHCs are shown in **Appendix 3.1**.

(i) Availability of beds in DH/Sub-District Hospital (SDH)/CHC/PHC as on 31 March 2022

Table 3.1: District wise availability of beds at the DH/SDH/CHC/PHC as on 31 March 2022

District wise availability of beds at the DH/SDH/CHC/PHC as on 31 March 2022		
Hospital/Health care centre	**District**	
	North Goa	**South Goa**
District Hospital	250	350
Sub-District Hospital	303* (both SDH are in South Goa District)	
CHC	146	90
PHC	46	179

(Source: Information furnished by DHS)

***SDH Ponda-183 beds and SDH Chicalim-120 beds**

(ii) BOR in NGDH[2], Mapusa and CHCs

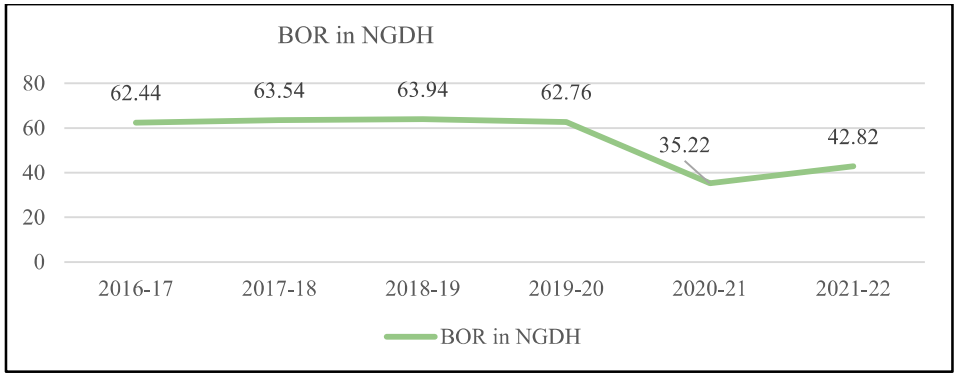
As per NITI Aayog's report on best practices in the performance of District Hospitals, a high BOR is an indicator of health system under pressure. The report states that hospitals cannot operate at 100 *per cent* occupancy, as spare bed capacity is needed to accommodate variations in demand. Lack of available beds increases delays in emergency departments, causes patients to be placed on clinically inappropriate wards and increases 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 health care 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. Further, IPHS stipulates BOR of at least 80 *per cent* and

[2] BOR for SGDH, Margao could not be calculated for want of complete details of midnight count of patients.

60 *per cent* for DH and CHC respectively. The BOR in NGDH, Mapusa during the period 2016-22 is shown in **Chart 3.7 below.**

Chart 3.7: BOR in NGDH, Mapusa during 2016-22

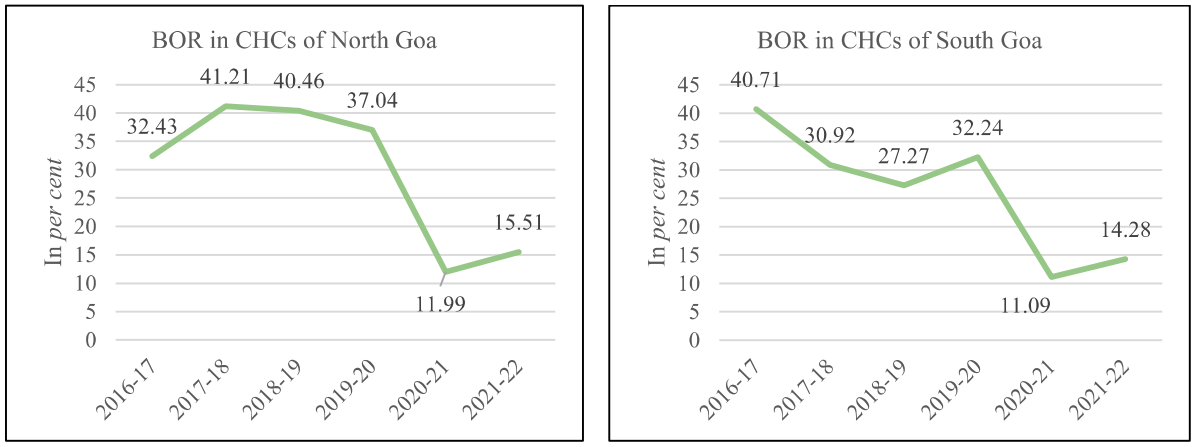


(Source: Information furnished by NGDH, Mapusa)

As per above chart, the BOR in NGDH, Mapusa ranged between 35.22 and 63.94 *per cent* during the period 2016-22, which was less than the prescribed minimum of 80 *per cent* during the period 2016-22, which indicates low productivity of the hospital in providing quality health care services to the citizens.

The district wise BOR in CHCs during the period 2016-22 is shown in **Chart 3.8** below:

Chart 3.8: BOR in CHCs



(Source: Information furnished by DHS)

As per the above chart, the BOR in CHCs ranged between 11.99 and 41.21 *per cent* in North Goa and 11.09 to 40.71 *per cent* in South Goa during the period 2016-22, which was way below the prescribed minimum of 60 *per cent* as per IPHS. This indicated low productivity of the hospitals in providing quality health care services to the citizens.

3.3.2 Availability of OPD Services as per IPHS norms

IPHS stipulates the list of essential OPD services to be available in hospitals and health centres. Test check of selected PHIs revealed that essential services stipulated in IPHS norms were not available in few CHCs as given in **Table 3.2 (A) and 3.2 (B).**

Table 3.2 (A): Details of OPD services available in DHs/SDH as on 31 March 2022

Name of the essential OPD Services as per IPHS norms	As per IPHS Guidelines for DH	NGDH Mapusa	SGDH Margao	As per IPHS Guidelines for SDH	SDH Chicalim
Paediatrics	Essential	Yes	Yes	Essential	Yes
Gynaecology	Essential			Essential	Yes
Ophthalmology	Essential			Essential	Yes
ENT	Essential			Essential	Yes
General Orthopaedic	Essential			Essential	Yes #
Psychiatry	Essential			Desirable	No

(Source: Information from test checked hospitals)
 # Available from 2021-22

Table 3.2 (B): Details of OPD services available in CHCs as on 31 March 2022

Name of the essential OPD Services as per IPHS norms	As per IPHS Guidelines for CHC	CHC Pernem	CHC Canacona	CHC Valpoi	CHC Sanquelim	CHC Bicholim	CHC Curchorem
Paediatrics	Essential	No	Yes	Yes	Yes	Yes	Yes
Gynaecology	Essential	Yes	Yes	Yes	Yes	Yes	Yes
Ophthalmology	Eye Specialist services (one for every 5 CHCs).	No	No	Yes	Yes	Yes	Yes
ENT	Not Required	No	No	Yes	Yes	No	No
General Orthopaedic	Not Required	No	No	Yes	No	No	No
Psychiatry	Not Required	No	Yes	Yes	No	Yes	Yes

(Source: Information from hospitals)

As seen from the above table, all the essential services as per IPHS norms were available in NGDH, Mapusa and SGDH, Margao and CHCs except CHC Pernem where OPD services related to Paediatrics was not available.

The Director, DHS regarding non-availability of Paediatrics services informed (February 2024) that the Paediatrician from District Hospital, Mapusa visits the CHC, Pernem on a fortnightly basis.

3.3.3 Availability of In-Patient Services in test-checked hospitals

IPHS prescribes IPD services to be provided by public healthcare facilities. The IPD services relating to Orthopaedics, ENT, Psychiatry, Physiotherapy, Burn, and Dialysis are not prescribed for CHCs. Test check of five selected PHIs

revealed that IPHS prescribed services were not provided as given in **Table 3.3** below:

Table 3.3: Details of IPD services available in all DHs/SDH and test checked CHCs as on 31 March 2022

Name of Unit	GM	GS	Pdt	Orth	Ophth.	ENT	Psy	Act	Phy	Bur	Dia
NGDH, Mapusa	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
SGDH, Margao	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
SDH, Chicalim	Yes	No	No	No	No	No	No	No	No	No	No
CHC, Pernem	Yes	No	No	*NA	No	*NA	*NA	No	*NA	*NA	*NA
CHC, Canacona	Yes	No	Yes	*NA	No	*NA	*NA	No	*NA	*NA	*NA

GM: General medicine, **GS**: General surgery, **Pdt:** Paediatrics, **Orth:** Orthopaedics, **Ophth:** Ophthalmology, **ENT:** Ear Nose & Throat, **Psy:** Psychiatry, **Act:** Accident and Trauma ward, **Phy**: Physiotherapy, **Bur**: Burn ward and **Dia**: Dialysis.

(Source: Information furnished by test checked units)
NA- not required as per IPHS norms, hence not available.
**NA- not required as per IPHS norms).*

As per the above table:

- Out of the 11 prescribed services for NGDH, Mapusa and SGDH, Margao three and four services were not available respectively.
- Out of the 11 prescribed services for SDH, Chicalim, 10 were not available.
- Out of the five prescribed services for CHCs, four were not available in CHC, Pernem and three were not available in CHC, Canacona.

The Secretary, Health in the exit meeting (February 2023) stated that corrective measures would be taken as per recommendations of Audit.

Recommendation 3: The State Government may ensure the availability of line services as per IPHS norms and strive to increase productivity of hospitals/health centres.

3.3.4 Availability of Maternity and Childcare services

Antenatal care (ANC) during foetal growth, Intra-Partum Care (IPC) for safe delivery and Post Natal Care (PNC) of the mother and the new-born especially during the critical 48 hours post-delivery are the major components of facility based maternity services. Details of Maternity and Childcare Services alongwith availability of beds in both North Goa and South Goa Districts are given in **Appendix 3.2**. Audit observed the following in the test-checked units under DHS.

3.3.4.1 Non-availability of Special Newborn Care Units (SNCU) and Newborn Stabilisation Unit (NBSU)

SNCU and NBSU are special newborn units to reduce fatality among sick children born within the hospital or outside, including home deliveries within first 28 days of life. As per IPHS norms, there should be a SNCU in DH and NBSU in SDH and CHC for providing 24 hours of service to the sick newborns. Further, side laboratory for Bilirubin testing was required for the SNCU. As per Maternal and Newborn Health (MNH) toolkit, four trained medical officers in sick newborn care are required in SNCU at DHs and one trained medical officer/ paediatrician is required in NBSU at SDHs and CHCs.

Audit observed the following in the test checked PHIs under DHS:

- The SNCU in NGDH, Mapusa had 10 beds against the requirement of 12 as per IPHS[3] norms.
- NBSU was not available in SDH, Chicalim and the two CHCs (CHCs, Pernem and Canacona) due to non-availability of full time paediatrician as per requirement.
- In NGDH, Mapusa, neither the side laboratory for testing Bilirubin near the SNCU was available nor 24x7 testing of Bilirubin was available in the diagnostic ward until May 2022.
- In NGDH, Mapusa, only two medical officers were posted against the requirement of four medical officers in SNCU. Further, these two medical officers were not trained in sick newborn care.

The Director, DHS (February 2023) cited shortage of manpower as the reason for non-availability of SNCU and NBSU in test-checked PHIs.

The reply is not tenable as the deficiencies identified by audit were not limited to manpower shortage alone and these remain un-addressed.

3.4 Gaps in Support Services

3.4.1 Diagnostic Services

NHP, 2017 recommends providing free diagnostic services in public hospitals for accessibility and financial protection of patients at secondary and tertiary care levels. Audit found shortage in services as per IPHS norms in test-checked PHIs as given in **Table 3.4** below:

Table 3.4: Non availability of Radiology Services in test-checked PHIs during May to July 2022

PHI	X-ray Services	Ultrasonography	Remarks
SDH, Chicalim	Available	Available	Available but not functional
CHC, Pernem	Available	Not Available	Radiologist not available
CHC, Canacona	Available	Not Available	

(Source: Information provided by test-checked PHIs)

[3] Annexure VI of IPHS 2012 for District Hospitals

The above CHCs cited shortage of manpower as the reason for non-availability of required Radiology services.

3.4.2 Dietary Services

IPHS prescribes that dietary service of a hospital is an important therapeutic tool. Normal, diabetic, semi-solid and liquid diet shall be available in hospitals. Quality and quantity of diet shall be checked on regular basis in secondary care.

Details of availability of dietary services in test-checked units is as given in **Table 3.5** below:

Table 3.5: Details of availability of dietary services in test-checked units as on 31 March 2022

Particulars	DH, Mapusa	SDH, Chicalim	CHC, Pernem	CHC, Canacona
Availability of dietary service in the hospital	Available	Available	Available	Available
Commercial Gas cylinders are used in kitchen[4]	Yes	No	No	No
Food supplied to the patients was patient specific.	Yes	Yes	No	Yes
Diet chart for patients was prepared	Yes	Yes	No	Yes

(Source: Information furnished by test checked units)

As per the above table:

- In three out of four PHIs, commercial gas cylinders were not being used.
- In one out of four PHIs, food supplied to the patients was not patient specific.
- In one out of four PHIs, diet chart for patients was not prepared.

3.4.3 Ambulance Services

As per the National Health Mission (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.

Details of availability of ambulance services in test-checked units as per IPHS norms is as given in **Table 3.6** below:

Table 3.6: Details of availability of ambulance services in test-checked units during May to July 2022

Name of the Hospital/health centre	Ambulances available	
	ALS	BLS
NGDH, Mapusa	0	2
SDH, Chicalim	0	2
CHC, Pernem	1[5]	2
CHC, Canacona	1	4[6]

(Source: Information furnished by test-checked units)

[4] Contravention of the provisions the Liquified petroleum Gas (Regulation of supply and Distribution) order 2000 read with the provision of the LPG marketing Discipline Guideline 2001.

[5] Out of order since June 2021.

[6] One out of four was out of order.

Audit noticed the following regarding the functioning of the ambulances in the test-checked units.

- In NGDH, Mapusa and SDH Chicalim, technician for operating BLS ambulance was not deployed.
- In CHC, Pernem, one ALS ambulance was available but was not functional since August 2020. In CHC, Canacona, BLS Ambulance was used for office purposes and for carrying dietary items.

Apart from the above, the State operates Emergency Medical Services (108-Ambulance Service) in Public Private Partnership (PPP) mode.

Operationalisation of 108 services for management of emergency response services

The Government of Goa entered into an MoU with GVK EMRI in 2008 to manage the emergency response services in the State. The year wise availability of 108 Ambulances in Goa for the years 2016-22 is shown in **Table 3.7** below:

Table 3.7: Availability of 108 services during 2016-22

Type of service	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
108 ALS Ambulances	15	25	37	39	39	41
108 BLS Ambulances	17	11	3	5	5	2
Neo natal Ambulances	2	2	2	2	2	2
Cardiac Care Ambulances	0	5	5	5	5	5
Bike Ambulances	0	20	32	35	35	35
Drop Back Van	4	4	4	4	4	1
Hearse Van	0	0	0	10	10	6
Total	**38**	**67**	**83**	**100**	**100**	**92**

(Source: Information furnished by DHS)

Population wise requirement of ALS and BLS ambulances and availability of the same in the State is shown in **Table 3.8** below:

Table 3.8: Availability of ALS and BLS ambulance against NHM norms

Year	Projected population[7] of the State	No. of ALS ambulances required as per NHM	No. of BLS ambulances required as per NHM	No of ALS ambulances available	No of BLS ambulances	Shortage (-) / excess of BLS	Excess of ALS
2016-17	1521000	3	15	15	17	2	12
2017-18	1531000	3	15	25	11	(-)4	22
2018-19	1540000	3	15	37	3	(-)12	34
2019-20	1549000	3	15	39	5	(-)10	36
2020-21	1559000	3	16	39	5	(-)11	36
2021-22	1567000	3	16	41	2	(-)14	38

(Source: Information furnished by DHS)

[7] As per projected population as on 1st March 2017 to 2022 for Goa *i.e.,* given by National Commission on Population by MoHFW in the Report of the Technical Group on Population projections.

From the table above, considering the total number of BLS and ALS ambulances, more than adequate number of ambulances as per NHM were available in the State.

Further, as per the MoU of 2008, Emergency Management and Research Institute (EMRI) was to achieve an average response time of 35 minutes in rural areas and 25 minutes in urban areas. The MoU was subsequently renewed (January 2019) and the average response was modified as equal to or less than 20 minutes in urban areas and 30 minutes in rural areas. It was observed that the average response time during 2017-22 ranged between 11.00 minutes and 16.27 minutes[8], which was within the timelines as per the MoU.

Further, the distribution of cases *vis-à-vis* response time is detailed in **Table 3.9** below:

Table 3.9 - Response time of 108 Ambulances during 2017-22

Sl. No.	Response time range (in minutes)	No. of cases	*Percentage of cases*
1	0-15	183009	*72.76*
2	15-30	55632	*22.12*
3	30-60	11465	*4.56*
4	60-120	1230	*0.49*
5	120-240	172	*0.07*
6	240-360	0	*0*
7	More than 360	0	*0*
	Total Cases	**251508**	

(Source: Information furnished by DHS)

As per above, in 94.88 *per cent* of the cases, the response time of 108 ambulances was less than or equal to 30 minutes[9].

Recommendation 4: The State Government may address the gaps in availability of diagnostics, maternity and dietary services in PHIs as per IPHS norms.

3.5 Gaps in Auxiliary services in GMCH and test-checked units under DHS

3.5.1 Public Safety and Disaster Management

Hospitals can be prepared for disasters by increasing their resilience and reducing their vulnerability by strengthening both structural and operational aspects of the hospital, such that they achieve a reasonable degree of safety.

[8] Annual average response time during 2017, 2018, 2019, 2020, 2021 and 2022 was 12.46, 11.07, 11.00, 13.45, 15.00 and 16.27 minutes respectively.

[9] DHS informed that bifurcation of urban and rural cases is not available in the system.

Therefore, preparing for expected and unexpected threats in advance is the best way to ensure that damages are as minimal as possible.

(a) ***Part of Academic block in GMCH in dilapidated condition:***

During Joint Inspection (July 2022) of the Academic Block, Audit noticed that exterior wall and windows of the East and West side of the academic block were badly damaged and in precarious condition.

The Dean, GMCH accepted the audit observation and stated (February 2023) that new lecture halls for students and academic block was constructed and shifted to the new block. Further, it was also stated (October 2023) that the part of the Academic Block in dilapidated condition was left unused and the rest of the building was stable as per the report submitted by Goa College of Engineering.

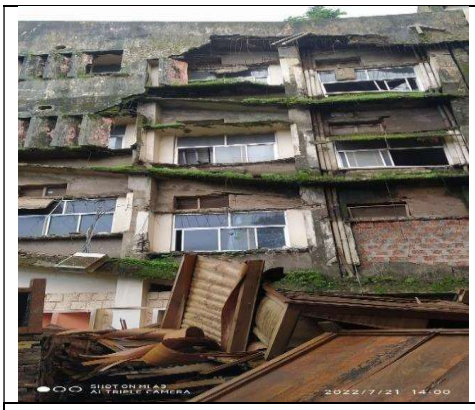


Photo No 3.1: East side of Academic Block

Photo No.3.2: West side of Academic Block

(b) ***Fire Fighting Services:***

IPHS prescribes that building structure and internal structure of hospital should be equipped with fire protection measures. Further, in every hospital, firefighting equipment such as fire extinguishers, sand buckets, *etc*., should be available and maintained for use in case of an incident. During joint inspection (May 2022 to December 2022) with departmental authorities, following were noticed by Audit in the test-checked units:

- In NGDH, Mapusa, fire pumps were non-functional, and the fire pump room located in the basement floor was found fully flooded with water due to leakage in the Water Tank. External hose boxes were in dilapidated condition. Fire alarm panel was found non-functional. Wall mounted illuminated signages with battery backup were found to be non-functional. Portable fire extinguishers were not in operable range.
- In CHC, Canacona, directional fire exit sign, emergency lighting, manually operated electric fire alarm system, first aid firefighting extinguishers and hose reel were not available.
- In SDH, Chicalim, fire safety alarm panel was not found to be installed.
- In TB Hospital, Margao, firefighting equipment was not installed.

3.5.2 Hospital Infection Control

Kayakalp guidelines issued by MoH&FW, GoI stipulate the constitution of Hospital Infection Control Committee (HICC) in public healthcare facilities which should meet at least once in a month[10] and review the progress made for meeting the criteria for cleanliness and infection control.

Out of the required 72 meetings to be held during 2016-22 of the HICC, only 14, one and 50 meetings were held in NGDH, Mapusa, SDH, Chicalim and CHC, Canacona respectively. CHC, Pernem did not furnish any data in this regard.

No reply in this regard was furnished by the Department.

3.5.3 Citizen's Charter

National Health Mission Assessors' Guidebook and IPHS prescribe the requirement to display the Citizen's Charter at a suitable place in the hospital so that the patients are aware of their rights.

During joint inspection (June 2022) at GMCH, it was found that citizen's charter was not displayed in the hospital premises.

Citizen's charter was displayed in all other test-checked PHIs; however, it was written in English and not in the local language (Konkani) and did not specify information such as responsibilities of the users and information about services available to BPL patients.

After being pointed out by the Audit, the Citizen's Charter has been displayed in GMCH premises (October 2023).

Recommendation 5: The State Government may make efforts to address deficiencies in auxiliary services in PHIs as per norms.

[10] For 2016-22 required number of meetings was 12 X 6 = 72