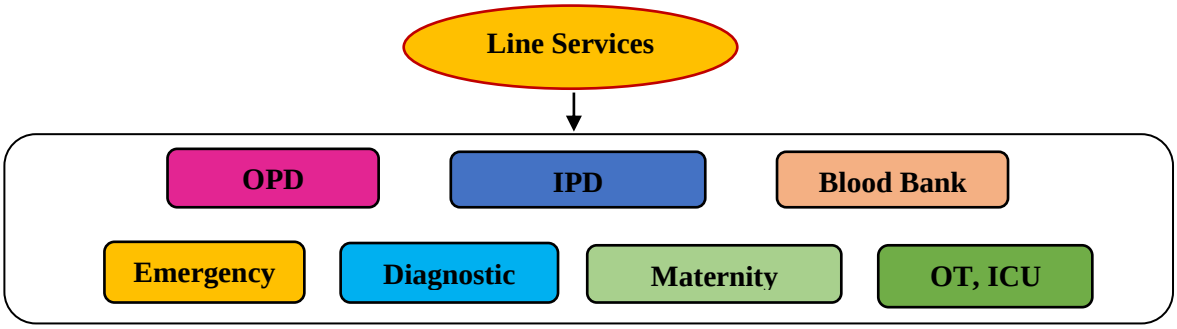
Chapter III: Healthcare services

High-quality healthcare services involve the right care, at the right time, responding to the users' needs and preferences, while minimising harm and wastage of resources. Quality healthcare increases the likelihood of desired health outcomes.

Audit test-checked the records of selected HIs on delivery of timely and quality healthcare services through line services like Out-Patient Department (OPD), In-Patient Department (IPD), Intensive Care Unit (ICU), Operation Theatre (OT), Emergency, Maternity, Blood Bank and Diagnostic services. Details of line services are shown in **Chart 3.1**.

Chart 3.1: Services in Line service



3.1 Line services

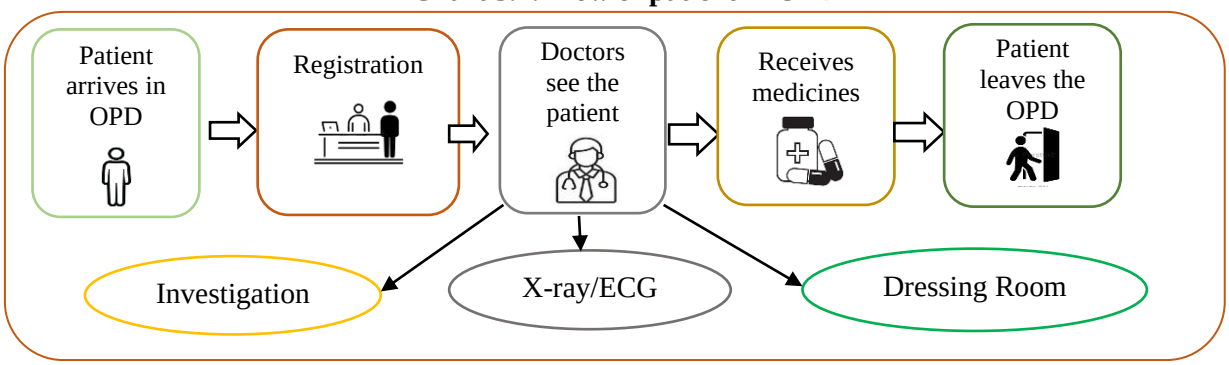
3.1.1 Out-Patient Department (OPD) Services

3.1.1.1 Registration of patients in OPD (Tertiary level)

Registration counter is the first point of contact with the hospital for a patient and is an important component of hospital experience for patients and their attendants.

As specific norms for OPD registration were not mentioned in National Medical Commission (NMC) norms, it was checked on the basis of IPHS norms 2012 for DHs. As per IPHS norms 2012, it is desirable that the registration process is computerised in DHs and able to collect patient information such as age, sex, address, ailment and previous patient information in case of old cases in a quick manner so that unnecessary delay is avoided. Depending on the status of illness of the patient, the doctor also decides whether the patient requires to be admitted as an in-patient. The detailed process flow of OPD is shown in **Chart 3.2**:

Chart 3.2: Flow of patient in OPD



During joint physical inspection of OPD registration area conducted by Audit with hospital authorities, analysis was made against the checklist of NHM Assessor Guidebook 2013 for

DHs as norms for OPD registration area in MCHs was not mentioned in NMC. It was noticed that:

- In RPGMC Kangra, to manage the OPD load, six registration counters (two for female, two for male and one each for senior citizen and divyang patients) were available. However, the OPD registration area was seen to be overcrowded as shown in **Picture 3.1**.
- In IGMC Shimla, to cater to the OPD load, only four registration counters (one for female, two for male and one for senior and *divyang* patients) were available. OPD registration area was found overcrowded with inadequate seating chairs as shown in **Picture 3.2**. Further, the patients along with their attendants were found sitting on ramps and floors as shown in **Picture 3.3**.
- In both the MCHs, there was no provision for online registration, which could have reduced the overcrowding in the registration area. Both the MCHs, being tertiary level institutions and offering specialist care, the provision of online registration is absolutely necessary.

Picture 3.1 and **3.2: Patients' rush at OPD registration counter in RPGMC & IGMC respectively.**

Picture 3.3: Attendants sitting on ramps in IGMC

3.1.1.2 Registration of patients in OPD (Secondary and Primary level)

As per IPHS norms 2012, it is desirable that the registration process is computerised in DHs. In CHs and CHCs, registration counters should be available. In case of PHC, specific norm for counter was not available.

In the three selected districts, Audit noticed that only DHs had computerised registration system while in CHs/CHCs/PHCs, manual registration was followed. In both the registration systems, only details like name of the patient, age and sex were entered. Details of ailment and whether it was a referral case, etc were not maintained. Since registration data did not contain complete information of the patients, the data did not enable any patient analysis.

In the exit conference (January 2023), the Secretary (Health) stated that for online registration in 56 HIs, letter of award has been issued and it was under process to alleviate the crowded registration process.

3.1.1.3 Wait time for registration at registration counters (at all levels)

The 'wait time' for registration at the counters as per the results of survey of 359 patients conducted by Audit in 35 selected HIs at Primary, Secondary and Tertiary levels is tabulated in **Table 3.1**.

Table 3.1: Waiting time for registration

Name of District	Name of Hospital	No. of counters	No. of patients surveyed	Average wait time in minutes (rounded off)
	IGMC, Shimla	4	15	22
	RPGMC, Kangra	6	15	15
Kinnaur	DH Kinnaur	2	16	12
	CH, Chango	1	9	12
	CHC, Pooh & Sangla	1 in each	17	6
	4 PHC	1 in each PHC	40	6
Solan	DH Solan	3	15	16
	CH Kandaghat	1	11	3
	CHC Syri & Dharampur	1 & 2	20	4
	4 PHC	1 in each PHC	26	2
Kangra	DH Kangra	2	15	9
	CH Thural	1	10	5
	CH Shahpur	1	10	10
	CH Jawalamukhi	1	11	5
	CH Baijnath	4	10	2
	CHC Majheen, Bir and Bachhwai	1 in each CHC	30	3
	9 PHC	1 in each PHC	89	4
Total			**359**	

From **Table 3.1**, average waiting time for registration ranged between two minutes to 22 minutes. In DH Solan, the registration counters were overcrowded as shown in **Picture 3.4**. Though it has computerised registration system, it was evident from the overcrowding that the OPD was not equipped to handle the patient load and hence needed to increase the number of counters.

Picture 3.4 : Crowd at OPD registration line in DH Solan

3.1.1.4 Wait time between registration and consultation with the doctor (in selected HIs)

The ‘wait time between registration and consultation with doctor (registration and drug time for Kinnaur District) ' as per the results of survey of 359 patients conducted by Audit in 35 selected HIs at Primary, Secondary and Tertiary levels is tabulated in **Tables 3.2 (A)** and **3.2 (B)**.

Table 3.2 (A): Wait time between registration and consultation with the doctor

Name of District	Name of Hospital	No. of patients surveyed	Average wait time in minutes
	IGMC, Shimla	15	43
	RPGMC, Kangra	15	28
Solan	DH Solan	15	22
	CH Kandaghat	11	7
	CHC Syri & CHC Dharampur	20	7
	4 PHC	26	3
Kangra	DH Kangra	15	10
	CH Thural	10	5
	CH Shahpur	10	10
	CH Jawalamukhi	11	10
	CH Baijnath	10	2.5
	CHC Majheen, Bir and Bachhwai	30	4
	9 PHC	89	6
Total		**277**	

From **Table 3.2 (A)**, it can be seen that average waiting time from registration to consultation ranged between 2.5 minutes to 43 minutes.

For Kinnaur District where the waiting time between registration and receipt of drugs was considered, the average waiting time was 14 to 102 minutes as shown in **Table 3.2 (B)**:

Table 3.2 (B): Wait time between registration and drug time

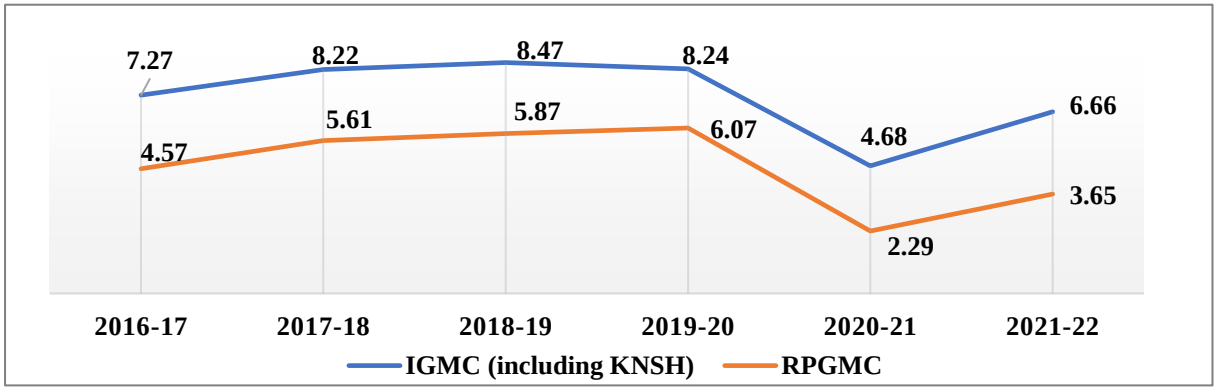
Name of District	Name of Hospital	No. of patients surveyed	Average wait time in minutes
Kinnaur	DH Kinnaur	16	102
	CH, Chango	9	38
	CHC Pooh & CHC Sangla	17	29
	4 PHC	40	14
Total		**82**	

3.1.1.5 Patient load in OPD (Tertiary level)

As per NMC norms, OPD areas of MCHs should have adequate reception and patient waiting halls, consultation rooms, examination rooms and other ancillary facilities commensurate with the clinical speciality departments.

Scrutiny of records revealed that there was substantial patient load in IGMC (including KNSH), Shimla and RPGMC, Kangra, the details of which are given in **Chart 3.3**.

Chart 3.3: Year-wise OPD patients in IGMC (including KNSH) and RPGMC during 2016-22 (in lakhs)



Source: Information provided by the HIs

It can be seen from **Chart 3.3** that the number of OPD patients in both the MCHs increased from 2016-17 to 2019-20 which could be due to non-availability of proper facilities and specialists in lower level HIs which is discussed in Chapter II (Human resources).

During the Covid pandemic period i.e. 2020-21 the number of OPD patients decreased in both the MCHs and the patient load again increased in 2021-22.

In the exit conference (January 2023), the Secretary (Health) stated that increase in patient load was due to the fact that patients directly approached the DHs or MCHs.

3.1.1.6 Patient load in OPD and average consultation time (Secondary level)

As per IPHS norms 2012 for DHs, workload at OPD shall be studied and measures shall be taken to reduce the waiting time for registration, consultation, diagnostics and pharmacy. Specific norms for consultation time were not mentioned in IPHS norms. The number of out-patients attended to in the selected DHs is shown in **Table 3.3**:

Table 3.3: Number of patients attended in OPD in selected DHs

Name of hospital	Year	OPD patients during the year	No. of doctors/ consultants	Average consultation time (min)*
DH Kinnaur	2016-17	67,818	6	9.55
	2017-18	66,103	5	8.17
	2018-19	66,863	6	9.69
	2019-20	62,109	6	10.43
	2020-21	16,819	6	38.53
	2021-22	72,413	10	14.91
DH Solan	2016-17	3,22,476	13	4.35
	2017-18	3,09,902	15	5.23
	2018-19	3,39,919	16	5.08
	2019-20	3,00,820	17	6.10
	2020-21	2,36,769	20	9.12
	2021-22	2,57,306	31	13.01
DH Kangra	2016-17	2,42,775	20	8.90
	2017-18	2,28,972	18	8.49
	2018-19	2,49,585	25	10.82
	2019-20	2,59,732	28	11.64
	2020-21	1,31,399	30	24.66
	2021-22	86,969	26	32.29

***** *Average consultation time= Working minutes (taken as 360 minutes (6 hours))/ (No. of patients/ (300 days* no. of doctors))*

Audit observed that the consultation time in the selected DHs ranged between four minutes to 39 minutes.

Further, in case of other selected HIs (details as per **Appendix 1**) it was observed that in six selected CHs, the consultation time ranged between two minutes and 32 minutes during 2016-22.

3.1.1.7 Availability of basic amenities in OPD (Tertiary level)

As specific norms for basic amenities in OPD were not mentioned in NMC norms, basic amenities in OPD registration area were checked on the basis of IPHS norms 2012 for DHs.

Status of availability of basic amenities in the selected MCHs observed during joint physical inspection is shown in **Table 3.4**.

Table 3.4: Availability of basic amenities in the selected MCHs (as on date of audit)

Name of the amenities/facilities available	IGMC, Shimla	RPGMC, Kangra
Availability of wheelchair or stretcher for easy access to the OPD	Yes	Yes
Seating arrangement	Inadequate	Inadequate
Potable drinking water	Not in registration area	Yes
Availability of ramps with railing	Yes	Yes
Availability of disabled friendly toilet	No	No

Source: Information provided by the Health Insitutions.

Survey of 30 patients (15 in each MCHs) was conducted by Audit and following were the responses of the patients:

- In both the MCHs, 28 out of 30 surveyed patients expressed dissatisfaction about sufficiency of registration counters.
- In both the MCHs, 29 out of 30 patients stated that there was lack of proper facilities for divyang patients.

RPGMC Kangra and IGMC Shimla, being tertiary level institutions and facing increasing OPD patient load, it is desirable that their facilities be upgraded to provide adequate and timely services to the OPD patients.

3.1.1.8 Availability of basic amenities in OPD (Secondary level)

IPHS norms 2012 envisaged that there should be some basic amenities for patients in OPD like potable drinking water, functional and clean toilets with running water, fans/coolers, seating arrangement as per patient load, ramps and wheelchairs in DHs, CHs and CHCs.

Basic amenities available in the selected HIs (DHs, CHs and CHCs) are shown in **Tables 3.5, 3.6** and **3.7** respectively.

Table 3.5: Availability of basic amenities in selected DHs (as on date of audit)

Items	DH Kinnaur	DH Solan	DH Kangra
Water Purifier	2	1	1
Fan	Not required	3	1
Toilet (Female)	2	1	8
Toilet (Male)	6	1	8
Chair/ Bench	73	5	130
Availability of ramp	Yes	Yes	Yes
Availability of wheelchairs	Yes	Yes	Yes

Source: Information provided by the Health Institutions.

As can be seen from **Table 3.5**, adequate basic amenities were available in DH Kinnaur and DH Kangra but in DH Solan, male and female patients' toilets were available with common entrance and available water cooler was not functional as shown in **Pictures 3.5** and **3.6** respectively.

Picture 3.5: Toilets with common entrance for male and female in DH Solan

Picture 3.6: Non-functional water cooler in DH Solan

Table 3.6: Availability of basic amenities in selected CHs (as on date of audit)

Items	CH Chango	CH Kandaghat	CH Shahpur	CH Thural	CH Jawalamukhi	CH Baijnath
Water Purifier	0	1	0	1	0	1
Fan	Not required	4	7	5	1	5
Toilet (Female)	1	1	2	2	0	1
Toilet (Male)	1	1	2	2	0	1
Chair	8	15	2	35	5	10
Availability of ramp	No	Yes	Yes	Yes	No	Yes
Availability of wheelchairs	No	Yes	Yes	Yes	Yes	Yes

Source: Information provided by the Health Institutions.

As can be seen from **Table 3.6**, water purifier was not available in CH Chango, Shahpur and Jawalamukhi. In CH Jawalamukhi, male and female toilet facility was also not available. In CH Chango, ramps and wheelchair were not available. In CH Jawalamukhi ramps were not available.

Table 3.7: Availability of basic amenities in selected CHCs (as on date of audit)

Items	Pooh	Sangla	Syri	Dharampur	Majheen	Bir	Bachhwai
Water Purifier	1	3	0	1	1	2	1
Fan	Not required		1	2	2	6	5
Toilet (Female)	1	5	1	1	1	2	1
Toilet (Male)	1	4	1	1	1	2	1
Chair/ Bench	3	8	12	15	6	14	26
Availability of ramp	No	No	Yes	Yes	No	Yes	Yes
Availability of wheelchairs	Yes	Yes	Yes	Yes	Yes	Yes	No

Source: Information provided by the Health Institutions.

As can be seen from **Table 3.7**, in all the seven selected CHCs, all basic amenities were available except in CHC Syri where water purifier was not available, and patients had to make their own arrangement. Ramps were not available in CHCs Pooh, Sangla and Majheen. Wheelchairs were not available in CHC Bachhwai.

3.1.1.9 Availability of OPD services in selected HIs (Tertiary level)

There were 36 departments (June 2022) in RPGMC, Kangra and 25 departments (September 2022) in IGMC, Shimla {including Kamla Nehru State Hospital for Mother and Child (KNSH)}. Out of the above, 18 departments in RPGMC and 25 departments in IGMC (including KNSH) had OPD available as on date of audit.

3.1.1.10 Availability of OPD services (Secondary level and Primary level)

As per IPHS norms 2012, there should be 14[1] OPD services in DHs, 12[2] OPD services in CHs and six[3] OPD services in CHCs. To ascertain the availability of OPD services in selected HIs, audit scrutinised the records related to the availability of specialised doctors and necessary infrastructure.

i. Status of availability/non-availability of OPD services in all DHs as of March 2023 is given in **Table 3.8**:

Table 3.8: Availability of important OPD services in all DHs in the State (as of March 2023)

Name of Service	Bilaspur	Chamba	Kangra	Kinnaur	Kullu	Hamirpur	Lahaul & Spiti	Shimla	Solan	Sirmaur	Una	Mandi
General Medicine	×	✓	×	×	✓	✓	×	✓	✓	✓	✓	✓
General Surgery	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓
Obstetrics & Gynaecology	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓
Pediatrics	✓	✓	✓	×	✓	✓	×	✓	✓	✓	✓	✓
Ophthalmic	✓	✓	✓	×	✓	✓	×	✓	✓	✓	✓	✓
ENT	✓	✓	✓	×	✓	✓	×	✓	✓	✓	✓	✓
Skin & VD	✓	✓	✓	×	✓	✓	×	✓	✓	✓	✓	×
Psychiatry	×	✓	×	×	×	✓	×	×	×	✓	✓	✓
Orthopedics	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dental	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neonatology	×	×	×	×	×	✓	×	×	×	✓	×	×
Social Service	×	✓	×	✓	×	✓	×	×	×	×	✓	×

Source: Information provided by the Health Institutions.
✓- Service available, ×- Service not available

As can be seen from **Table 3.8**:

a. In DH Hamirpur, all the OPD services are available, whereas in DH Lahaul & Spiti only two OPD services were available.

b. In the remaining DHs, six to 12 OPD services were available.

c. Dental OPD is available in all DHs and Neonatology OPD is available only in DH Hamirpur and Sirmaur while OPD for General Medicine was not available in Bilaspur, Kangra, Kinnaur and Lahaul & Spiti.

ii. Status of non-availability of OPD services in selected DHs is detailed in **Table 3.9**.

[1] General, Medical, Surgical, Ophthalmic, ENT, Dental, Obstetrics & Gynaecology, Post-partum unit, Pediatrics, Dermatology, Psychiatry, Neonatology, Orthopedics and Social Service.
[2] General, ENT, Medicine, Eye, Pediatrics, Surgical, Dental, Obstetrics & Gynaecology, Orthopedics, Neonatology, Social Service, General and Post-partum unit.
[3] General Medicine, Pediatrics, Surgical, Dental, Obstetrics & Gynaecology and Family Welfare.

Table 3.9: Period of non-availability of OPD services in selected DHs

DHs (services not available out of 14)	Name of OPD services	Period of non-availability of OPD services	No. of years	Reasons
Kinnaur (12)	ENT	April 2016 to October 2021	5.5	Due to non-posting of specialist.
	General Medicine	April 2016 to March 2019	3	
	Eye	April 2016 to March 2018	2	
	Paediatric	April 2016 to October 2021	5.5	
	Surgical	April 2016 to March 2018	2	
	Obstetrics	April 2016 to March 2018	2	
	Post-partum	April 2016 to March 2018	2	
	Dermatology (Skin)	April 2016 to October 2021	5.5	
	Psychiatry	April 2016 to October 2021	5.5	
	Neonatology	April 2016 to October 2021	5.5	
	Orthopaedic	April 2016 to October 2021	5.5	
	Social service department	April 2016 to October 2021	5.5	
Solan (4)	Eye	January 2016 to July 2016	0.5	
	Post-Partum Unit	April 2016 to December 2021	5.8	
	Psychiatry	January 2016 to June 2019, 19/11/2021 to 07/02/2021 and 16/05/2021 to till December 2021 (Date of reply)	3.5	
	Social service department	April 2016 to December 2021	5.8	
Kangra (4)	Psychiatry	November 2021 to December 2021	2 months	Due to transfer of specialist to Kangra
	Neonatology	April 2016 to December 2021	5.8	No such post in DH Kangra
	Orthopaedic	April 2016 to December 2021	5.8	
	Social service department	April 2016 to December 2021	5.8	

Source: Information provided by the Health Institutions.

It can be seen from **Table 3.9** that in the selected DHs, a number of OPD services ranging between four and 12 out of 14 were not available. In absence of these OPD services at the district level, patients had to visit tertiary HIs leading to increase in OPD patient load and overcrowding as discussed in **Para 3.1.1.5**.

Further, it was observed that:

- In the selected CHs, out of 12 OPD services, one to nine OPD services were available in CHs as per details given in **Appendix 2** as of March 2023.
- In the selected CHCs, none of them had four OPD services namely Medicine, Paediatrics, General Surgery and Obstetrics & Gynaecology. In three[4] out of seven CHCs, dental OPD was not available as per details given in **Appendix 2** as of March 2023.
- In all the selected PHCs, only one Medical officer was available.

In reply, in charge of the HIs (October- December 2021) attributed the non-availability of services to shortage of human resources in the respective HIs.

Due to non-availability of OPD services, patients either had to be referred out of the district or to tertiary/private hospitals, entailing increasing patient load on the tertiary level

[4] CHC Pooh, Majheen and Bachhwai.

institutions. Additional financial burden was borne by the patients on private treatment as commented in **Para 2.2.3.4**.

During the exit conference (January 2023), the Secretary (Health) attributed the gaps in OPD services in DHs and CHs to shortage of specialists.

3.1.1.11 Delay in operationalisation of new OPD block at IGMC, Shimla

For construction of a new OPD block at IGMC Shimla, Administrative Approval (A/A) was accorded during December 2019 for ₹ 103.18 crore. After incurring expenditure of ₹ 90 crore, the work was completed and the new OPD block was inaugurated in January 2022 as shown in **Picture 3.7**. However, audit noticed that the new OPD block had not been put to use (September 2022) as approval from National Green Tribunal was awaited. Further, there was also a land dispute at the site as shown in **Picture-3.8** which delayed the operationalisation of the new OPD block**.**

Picture 3.7: Newly constructed OPD block at IGMC, Shimla.

Picture 3.8: Showing disputed private land within the OPD campus.

During the exit conference the Department stated that the matter was sub-judice and appropriate action will be taken after decision of the court. The reply is not tenable as the Department should have ensured availability of land and all clearances before taking up execution of the work.

Assistant Controller (F& A) IGMC Shimla stated (January 2024) that the new OPD block has been made functional w.e.f March 2023 after a delay of 13 months.

3.1.1.12 Non-operationalisation of geriatric OPD clinic in RPGMC, Kangra

The Government released ₹ 5.86 crore between November 2016 and February 2017 for setting up a geriatric OPD clinic in RPGMC Kangra. However, due to indecision[5] by the Department and land dispute at the site, the work could not be started as of June 2022 as confirmed by the Department.

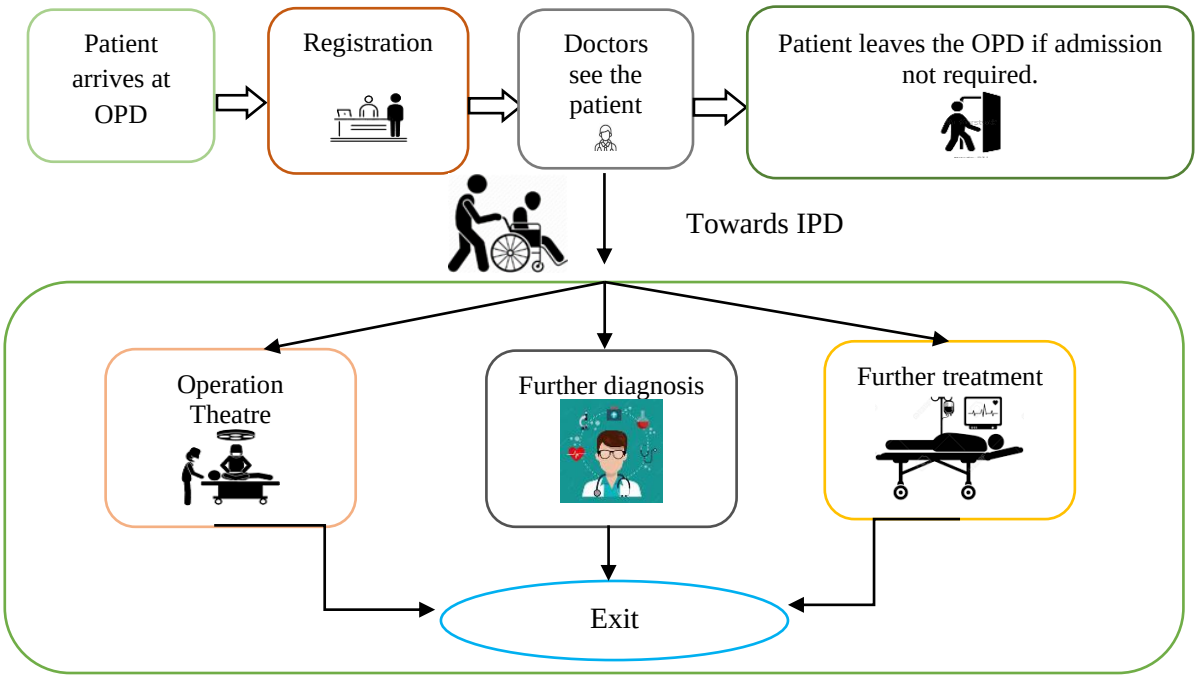
Thus, due to non-ensuring of availability of land, senior citizens were deprived of OPD services in RPGMC Kangra.

[5] The initial approval (November 2016) was accorded for construction of a geriatric centre. During a meeting in June 2017, it was suggested to club the geriatric centre, skill centre and bone bank together due to space constraints. Finally, work for the geriatric centre was proposed to be initiated (October 2020) which could not be started due to a court case.

3.1.2 In-patient Department (IPD) Services

IPD refers to the areas of the hospital, where patients are accommodated after being admitted, based on doctor's/specialist's recommendation, from OPD, Emergency Services and Ambulatory Care. In-patients require a higher level of care through nursing services, availability of drugs/ diagnostic facilities, observation by doctors etc. **Chart 3.4** shows the procedure for patient flow in the IPD.

Chart 3.4: Patient flow in the IPD



3.1.2.1 Availability of IPD Services (Tertiary Level)

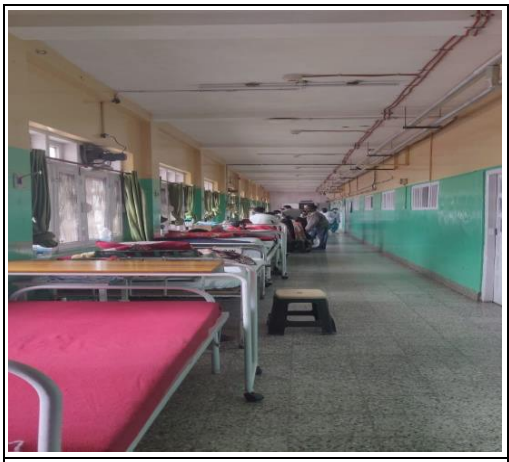
As per NMC norms (October 2020), MCHs shall have 24 departments. It was noticed that except Physical Medicine and Rehabilitation in RPGMC Kangra and Dentistry, Physical Medicine and Rehabilitation in IGMC Shimla all the other required departments were available in both the selected MCHs.

Joint physical verification of a few of the IPD wards was conducted and following points were noticed:

- In IGMC Shimla, the number of patients were more than the functional beds in Urology and Cardiothoracic Vascular Surgical (CTVS) wards which indicated that number of beds available were not adequate as discussed in **Para 5.2.1**. Male and female patients were kept in the same ward as separate wards were not available, thereby compromising the privacy of the patients.
- In RPGMC, Kangra, double occupancy was seen on 17 beds in Medicine male ward, showing high patient occupancy rate.
- Proper ventilation and illumination were not available in Children's ward and Medicine female ward of IGMC Shimla. In RPGMC, Kangra, proper ventilation was not available

as installed A.C. units in Male/ Female surgery, Children's ward, Female orthopaedic, Male medicine ward were insufficient, leading to a suffocating and humid environment.

- In IGMC Shimla, it was seen that beds were placed in corridors leading towards Male Ortho and Female medicine ward, which was causing hindrances for smooth flow of stretchers and staff as shown in **Pictures 3.9** and **3.10**.



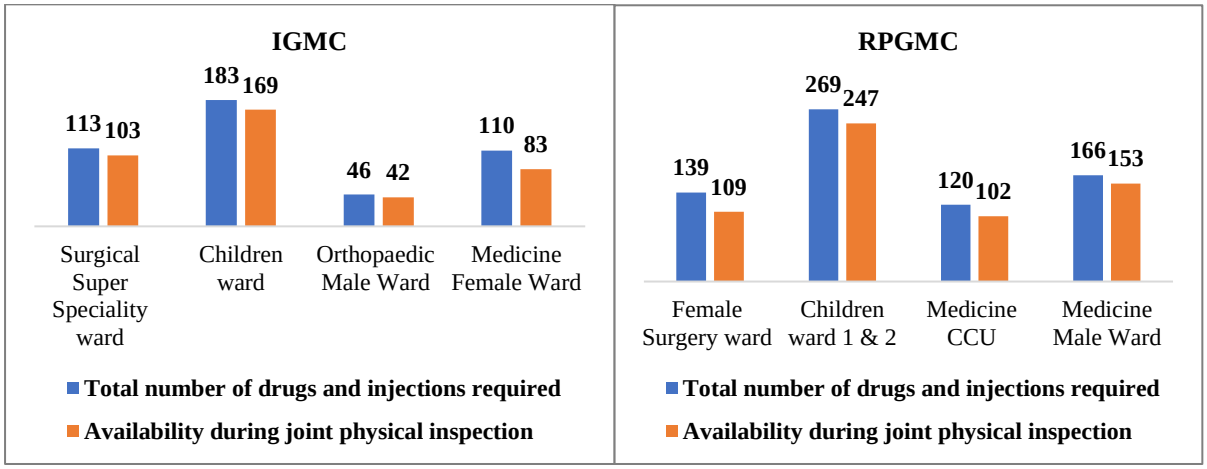
Picture 3.9: Male Ortho ward in IGMC

Picture 3.10: Female Medicine ward in IGMC

3.1.2.2 Availability of essential drugs and injections in IPD wards (Tertiary level)

Basic drugs and injections required in the wards should be kept available to ensure prompt treatment of the patients. The position of availability of basic drugs and injections in the ward as observed during joint physical inspection was as detailed in **Chart 3.5**:

Chart 3.5: Availability of basic drugs and injections



It was observed that though the shortage in availability of drugs and injections in the wards was not significant, however, none of the wards had all drugs and injections available as per requirement.

3.1.2.3 IPD patient load (Tertiary level)

The number of in-patients who were provided medical care and services in the selected MCHs during 2016-2022 are shown in **Table 3.10**.

Table 3.10: Number of in-patients in selected Medical College Hospitals

Year	IPD load in (IGMC+ KNSH)	Increase (+)/ Decrease (-) (*per cent*)	IPD load in RPGMC	Increase (+)/ Decrease (-) (*per cent*)
2016-17	47,804	-	2,21,914	-
2017-18	41,531	(-)13.12	2,47,478	+11.52
2018-19	49,899	+20.15	2,38,443	(-)3.65
2019-20	52,032	+4.27	2,44,796	2.66
2020-21	39,949	(-)23.22	1,58,132	(-)35.40
2021-22	74,541	+86.59	1,85,787	+17.49

Source: Information provided by the HIs

In IGMC Shimla and Kamla Nehru State Hospital (KNSH, Maternity wing), during 2017-18, there was an overall decrease in IPD patients by about 13.12 *per cent*. There was increase in number of in-patients by 20.15 *per cent* and 4.27 *per cent* during 2018-19 and 2019-20 respectively. However, there was decrease in number of in-patients by 23.22 *per cent* during the period 2020-21. Again, in 2021-22, there was increase in the number of in-patients by 86.59 *per cent* in IGMC.

In RPGMC Kangra, percentage increase in number of in-patients during 2017-18, 2019-20 and 2021-22 were 11.52, 2.66 and 17.49 respectively. However, percentage decrease in number of in-patients during 2018-19 and 2020-21 were 3.65 and 35.40 respectively. The substantial number of IPD load in the MCHs was due to non-availability of essential services and manpower at primary and secondary HIs as discussed in succeeding chapters.

3.1.2.4 Availability of IPD services (Secondary level)

As per IPHS norms 2012, in the HIs (DHs, CHs and CHCs), the IPD beds shall be categorised as General Medicine ward, ENT ward, Paediatric ward, General Surgery ward, Ophthalmology ward, Accident & Trauma ward etc.

Status of availability of in-patient services in selected DHs and CHs is detailed in **Table 3.11**.

Table 3.11: Availability of important IPD services in selected DHs and CHs (as of March 2023)

Services	DH Kinnaur	CH Chango	DH Solan	CH Kandaghat	DH Kangra	CH Thural	CH Jawalamukhi	CH Shahpur	CH Baijnath
General Medicine	×	×	✓	×	×	✓	✓	×	✓
ENT	×	×	✓	×	✓	×	×	×	✓
General surgery	✓	×	✓	×	✓	×	×	✓	✓
Ophthalmology	×	×	✓	×	✓	×	×	✓	✓
Orthopaedics	✓	×	✓	×	×	×	×	×	×
Accident & trauma	×	×	✓	×	✓	×	×	×	×
Paediatrics	×	×	✓	×	✓	×	×	✓	✓
Obstetrics & Gynaecology	✓	×	✓	×	✓	✓	✓	✓	✓
Burn ward	×	NA*	✓	NA*	✓	NA*	NA*	NA*	NA*

*Source: Information provided by the Health Institutions, * NA-Not Applicable as per IPHS norms 2012*

As can be seen from **Table 3.11**:

- All IPD services were available in DH Solan.
- In DH Kinnaur, General Medicine, ENT, Ophthalmology, Paediatrics, Accident & Trauma and Burn Ward IPD services were not available.
- In DH Kangra, General Medicine and Orthopaedic IPD services were not available.

No IPD service was available in CH Chango and CH Kandaghat while in the other selected CHs, two to six IPD services were available.

Similarly, in four[6] out of seven selected CHCs, only one (General Medicine) in-patient service was available and in remaining three[7] CHCs, IPD services were not available as of March 2023.

Due to non-availability of in-patient services, HIs failed to provide comprehensive healthcare services to the people.

(i) Impact of shortage of specialists/paramedical staff on OPD/IPD services/Bed occupancy rate

HIs-wise impact of shortage of specialists on OPD & IPD services is discussed below:

- As discussed in Chapter II **Para 2.2.3.1,** the shortfall in availability of specialists in DHs, when compared with IPHS norms 2012 ranged (March 2023) between 25 *per cent* (Shimla) to 94 *per cent* (Lahaul & Spiti) with the exception of DH Solan where there was an excess of 11 *per cent*. This shortage led to non-functioning of certain OPD departments in all DHs and IPD departments in the selected DHs as discussed in **Para 3.1.1.10** and **Para 3.1.2.4** respectively. Further, shortage of specialists could have impacted Bed Occupancy Rate (BOR) in Health Institutions.
- As discussed in Chapter II **Para 2.2.3.3** (**Map 2.11**), in all the CHs in the State, the shortfall in availability of specialists against IPHS norms 2012 ranged (March 2023) from seven *per cent* (Shimla district) to 100 *per cent* (Lahaul & Spiti and Kinnaur districts). This shortage led to non-functioning of certain OPD departments and IPD departments as discussed in **Para 3.1.1.10** and **Para 3.1.2.4** respectively.
- As discussed in Chapter II **Para 2.2.3.3** (**Map 2.12**), in all the CHCs in the State, the shortfall in availability of specialists against IPHS norms 2012 ranged (March 2023) from 70 *per cent* (Solan district) to 100 *per cent* (Lahaul & Spiti, Kinnaur, Chamba, Bilaspur, Kullu and Mandi districts). This shortage led to non-functioning of certain OPD departments and IPD departments in CHCs as discussed in **Para 3.1.1.10** and **Para 3.1.2.4** respectively.
- In the selected HIs, due to non-availability of radiologists (CH Jawalamukhi, CH Shahpur, CH Jaisinghpur and CH Baijnath), radiographers (CH Chango, PHC Spillow and PHC Ribba) and perfusionists (RPGMC, Kangra), the ultrasound, X-ray and heart lung machines were lying idle as discussed in **Para 2.2.5.4** and **Para 2.2.1.3** respectively.

(ii) Impact of shortage of equipment on healthcare services

HIs-wise impact of shortage of equipment on healthcare services is discussed below:

- As discussed in Chapter IV **Para 4.9.1.1, s**hortage of types of equipment in the test checked DHs ranged between 38 and 46 *per cent* in 14 departments which led to healthcare services being affected in the selected HIs.

[6] CHCs Sangla, Pooh, Syri and Dharampur.
[7] CHCs Bachhwai, Majheen, and Bir.

- As discussed in Chapter IV **Para 4.9.1.2,** shortage of types of equipment in the test checked CHs ranged between 48 and 99 *per cent* in 12 departments which led to healthcare services being affected in the selected HIs.

Thus, the shortage of specialists and equipment at all levels of HIs led to non-availability of essential OPD and IPD services, as a result of which patients requiring treatment were either referred to higher HIs or availed treatment from private facilities.

3.1.2.5 Evaluation of In-patient services through Outcome Indicators (DHs, CHs and CHCs)

Patient services provided in IPD can be evaluated through certain outcome indicators (OIs) like Bed Occupancy Rate (BOR), Average Length of Stay (ALoS), Leave Against Medical Advice (LAMA) and Referral Out Rate (ROR) etc. The detail about these ratios is shown in **Table 3.12**:

Table 3.12: Calculation of quality indicators

Type	Quality indicator	Numerator	Denominator
Productivity of hospital	BOR (in *per cent*)	Total patient bed days in a month	Total number of functional beds x number of days in a month
Efficiency of hospital	ROR (in *per cent*)	Total number of cases referred to other facility	Total number of admissions
Clinical care capability of hospital	ALoS (in days)	Total patient bed days	Total number of admissions
Service quality of a hospital	LAMA (in *per cent*)	Total number of LAMA and absconding cases	Total number of admissions

Audit evaluated the four outcome indicators in the selected HIs and the findings are discussed below:

(i) Bed Occupancy Rate (BOR)

Bed Occupancy Rate (BOR) is used to examine how effectively the hospital's in-patient capacity is being utilised for in-patient care. As per IPHS norms 2012, in DHs, the hospital bed occupancy rate should be at least 80 *per cent*. In case of CHs and CHCs, no norms are prescribed in IPHS norms 2012 for BOR. BOR of the selected HIs upto CHCs level is given in **Table 3.13**:

Table 3.13: BOR (in *per cent*) of selected HIs in IPD services

District	HI	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Kinnaur	DH Kinnaur	32.19	22.71	17.10	14.72	13.47	22.58
	CHC Sangla	-	6.70	5.61	5.01	6.23	7.40
	CHC Pooh	0.14	0.41	0.23	0.14	0.27	3.29
Solan	DH Solan	83.28	211.54	178.02	178.51	112.56	66.74
	CH Kandaghat	50.36	42.32	56.90	65.48	42.22	27.32
	CHC Syri	0.36	0.91	0.55	0.64	2.65	2.25
	CHC Dharampur	8.19	4.97	5.17	5.11	5.14	47.67
Kangra	DH Kangra	47.57	32.87	36.80	33.08	13.14	9.66
	CH Thural	41.76	42.76	45.82	23.29	11.95	30.56
	CH Jawalamukhi	66.59	81.40	101.77	81.33	25.97	45.86
	CH Shahpur	81.04	90.90	69.29	72.38	44.68	24.04
	CH Baijnath	69.86	57.84	46.60	46.79	21.79	10.82

Source: Information provided by the Health Institutions.

As can be seen from **Table 3.13**:

- In the selected DHs, BOR was more than 100 *per cent* in DH Solan during 2017-21 which indicates that there was shortage of beds.
- In the selected CHs having IPD services, BOR was ranging between 11 *per cent* and 102 *per cent*.
- In the selected CHCs having IPD services, BOR was less than nine *per cent* except for 48 *per cent* in 2021-22 in CHC Dharampur.

Non-availability of required services in the selected HIs was one of the reasons for low BOR in DHs, CHs and CHCs. The department may relook into the requirement vis-à-vis distribution of beds across the HIs for optimum utilisation of the services.

(ii) Average Length of Stay (ALoS)

Average Length of Stay (ALoS) is an indicator of clinical care capability and to determine effectiveness of interventions. ALoS is the time between the admission and discharge/death of the patient and is expressed in number of days. ALoS in respect of the selected HIs are shown in **Table 3.14**.

Table 3.14: ALoS (in days) in respect of selected HIs

District	Year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Kinnaur	DH Kinnaur	3	3	3	3	3	3
	CHC Sangla	NA	1.5	1.5	1.5	1.5	2
	CHC Pooh	1	1	1	1	1	1
Solan	DH Solan	3	3	3	3	3	3
	CH Kandaghat	1	1	2	2	2	2
	CHC Syri	1.33	2	2	2	2	2
	CHC Dharampur	0.26	0.15	0.16	0.13	0.24	2
Kangra	DH Kangra	4.59	3.93	3.97	3.68	5.33	2
	CH Thural	0.64	0.75	0.85	0.87	0.91	2
	CH Jawalamukhi	1.5	1.5	1.5	1.5	1.5	2
	CH Shahpur	3	3	3	3	3	2
	CH Baijnath	4.5	4.5	4.5	4	4	2

Source: Information provided by the Health Institutions..

In all the selected HIs (DHs, CHs and CHCs), ALoS within which patients were either discharged after full treatment or they were referred to higher level hospital ranged between one day to five days.

(iii) Leave Against Medical Advice (LAMA)

To measure service quality of HIs, LAMA rate and Absconding Rate are evaluated. LAMA is the term used for a patient who leaves the hospital against the advice of the doctor and Absconding Rate refers to patients who leave the hospital without informing the hospital authorities. Scarce data is available on various aspects of the problems like type of cases, reasons where patients leave etc. LAMA cases in the selected districts are shown in **Table 3.15**:

Table 3.15: LAMA rate in selected HIs (in *per cent*)

District	HIs	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Kinnaur	DH Kinnaur	0.05	0	0.18	0.26	0	0.40
	CHC Sangla	0	0	0	0	0	0
	CHC Pooh	0	0	0	0	0	0
Solan	DH Solan	0.63	0.22	0.37	0.36	0.39	0.92
	CH Kandaghat	0.22	0.65	0.82	1.05	1.23	1.47
	CHC Syri	0	0	0	0	0	0
	CHC Dharampur	0	0	0	0	0	0.38
Kangra	DH Kangra	0.11	0.10	1.31	1.57	0.54	1.48
	CH Thural	0.14	0.08	0.13	0.03	0.06	0.05
	CH Jawalamukhi	0.97	0.50	0.61	0.39	0.24	0.30
	CH Shahpur	0.47	0.45	0.08	0.45	0.43	1.37
	CH Baijnath	2	3.34	3.97	1.37	1.09	2.11

Source: Information provided by the *Health Institutions.*

In four of the selected HIs, there were no instances of LAMA cases. LAMA cases remained below four *per cent* in the remaining selected HIs which indicated that the doctor's advice has been well accepted by the patients.

(iv) Referral Out Rate (ROR)

Referral to higher level HIs denotes that the facilities for treatments were not available in the HIs. Referral Out Rate (ROR) in selected HIs are as per **Table 3.16.**

Table 3.16: ROR (in *per cent*) in selected HIs

District	Year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Kinnaur	DH Kinnaur	1.46	3.88	7.50	5.94	3.98	3.24
	CHC Sangla	NA	15.34	20.51	26.23	22.77	11.48
	CHC Pooh	0	0	0	0	0	16.67
Solan	DH Solan	6.11	2.62	3.09	3.18	3.64	8.24
	CH Kandaghat	3.88	4.40	4.04	2.30	1.95	5.21
	CHC Syri	33.33	0	0	0	6.90	0
	CHC Dharampur	0.72	2.07	0.85	1.05	1.07	3.26
Kangra	DH Kangra	4.09	4.91	5.14	6.49	10.42	9.77
	CH Thural	2.27	2.40	3.47	1.87	4.41	2.05
	CH Jawalamukhi	7.86	7.54	4.78	4.64	6.37	4.90
	CH Shahpur	7.03	7.75	8.86	7.83	7.30	8.05
	CH Baijnath	4.79	4.94	6.17	4.22	11.32	16.62

Source: Information provided by the Health Institutions.

It can be seen from **Table 3.16** that:

- The highest ROR was in DH Kangra at DHs level, which could be due to shortage of specialists as discussed in **Para 2.2.3.1** and non-availability of five OPD services as discussed in **Para 3.1.1.10**. ROR was also high in DH, Solan (8.24) in 2021-22, whereas in DH Kinnaur (2016-22) and DH Solan (2016-21), ROR was relatively low.
- In case of CHs and CHCs, ROR was relatively low in all the selected CHs and CHCs except for CHC Sangla where for consecutive four years ROR was high ranging between 11 *per cent* and 26 *per cent*, which could be due to non-availability of four OPD services as discussed in **Para 3.1.1.10**.

3.1.3 Emergency Services

Emergency services in HIs are provided by Emergency ward or Emergency Room (ER) which is a medical treatment facility specialising in acute care of patients who come in emergency. Due to the unplanned nature of patient attendance, the department provides initial treatment to a broad spectrum of ailments and injuries, some of which may be life threatening and require immediate medical attention. Therefore, IPHS norms 2012 envisage 24x7 operational emergency with dedicated emergency room in every HI up to PHC level.

3.1.3.1 Availability of Emergency services (Tertiary Level)

The number of patients admitted, referred from other hospitals and referred to other hospitals in emergency by the two tertiary level medical hospitals during 2016-17 to 2020-21 is detailed in **Table 3.17**.

Table 3.17: Patients admitted, referred from other hospitals and referred to other hospitals

Year	Name of the institution	Patients admitted directly	Patients referred from other HIs	Patients died	Patients referred to higher HIs of other State
2016-17	IGMC	27,832	540	N/A	80
	RPGMC	32,356	205	119	127
2017-18	IGMC	32,592	140	N/A	100
	RPGMC	33,804	180	71	122
2018-19	IGMC	30,969	1,610	N/A	112
	RPGMC	30,381	120	123	121
2019-20	IGMC	44,106	415	84	132
	RPGMC	32,868	61	147	81
2020-21	IGMC	37,376	108	96	62
	RPGMC	18,189	48	75	80

Source: Information provided by the Health Institutions; N/A- Data not available.

From **Table 3.17** it can be seen that:

- In both MCHs, the number of patients admitted in emergency department during 2016-21 shows a mixed trend.

In IGMC, the number of patients referred to higher hospitals showed an increasing trend during 2016-20 and decreased in 2020-21 and there was an increase in number of death cases in emergency department from 2019-20 to 2020-21.

The Sr.MS, IGMC stated (May 2022) that due to less availability of ventilators, family opinion or further management, the patients were referred to higher hospitals.

- In RPGMC, the trend for referral cases was decreasing marginally throughout the period 2016-21.

3.1.3.2 Availability of emergency services (Secondary level and Primary level)

In all the DHs in the State, emergency service was available as of March 2023. In the selected HIs Audit observed that emergency services were available in all the DHs, CHs and CHCs except in CH Chango and CHC Majheen. In case of PHC, emergency service was not

available in any of the selected institutions. Due to absence of emergency services in the HIs, patients had to move to some other HIs having emergency service.

- In DHs, Emergency ward should have dedicated triage[8], resuscitation and observation area and screens shall be available for privacy. Out of the selected DHs, only DH Kinnaur and DH Kangra have this facility.
- It was also envisaged that separate provision for examination of rape/sexual assault victims should be made available in the emergency department in DHs. Separate provision was available only in DH Kinnaur and DH Kangra.

3.1.3.3 Emergency Cases (Secondary level and Primary level)

Despite availability of emergency services (except for CH, Chango and CHC, Majheen), emergency cases were referred to higher level HIs either due to lack of proper facility or for further investigation/expert opinion. The number of emergency cases referred to higher HIs is shown in **Table 3.18**.

Table 3.18: Emergency cases referred to higher HIs during 2016-21

District	Hospital	Patients Admitted	Patients referred	Percentage of patients referred
Kinnaur	DH Kinnaur	2,013	390	19.37
	CH Chango	Service not available		
	CHC Pooh	628	46	7.32
	CHC Sangla	1,176 (except 2016-17)	29	2.47
Solan	DH Solan	1,38,889	1,750	1.26
	CH Kandaghat	8,863	323	3.64
	CHC Syri	5,546	283	5.10
	CHC Dharampur	63,881	2,598	4.07
Kangra	DH Kangra	1,86,455	4,463	2.39
	CH Thural	16,183	839	5.18
	CH Jawalamukhi	12,209	396	3.24
	CH Shahpur	40,398	647	1.60
	CH Baijnath	34,564	801	2.32
	CHC Bachhwai	143	143	100
	CHC Majheen	Service not available		
	CHC Bir	401	73	18.20

Source: Information provided by the Health Institutions.

From **Table 3.18** it can be seen that:

- In DH Kinnaur, 19.37 *per cent* emergency cases were referred to higher HIs which could be due to shortage of specialists as discussed in **Para 2.2.3.1** and non-availability of six IPD services as discussed in **Para 3.1.2.4**.
- In CHC Bachhwai, 100 *per cent* emergency cases were referred to higher HIs which could be due to upgrading erstwhile PHC to CHC without providing additional infrastructure and additional equipment as discussed in **Para 2.2.6**. Also, IPD services were not available as discussed in **Para 3.1.2.4**.

[8] In the Emergency Department "triage" refers to the methods used to assess patients' severity of injury or illness within a short time after their arrival, assign priorities, and transfer of each patient to the appropriate place for treatment.

- In CHC Bir, 18.20 *per cent* emergency patients were referred to higher HIs which could be due non availability of IPD services as discussed in **Para 3.1.2.4**.

3.1.3.4 Trauma Centres in the State

Under Centrally Sponsored Scheme (CSS) 'Capacity Building for Developing Trauma Care Facilities in Government Hospitals located on National Highways,' GoI provided assistance to State Governments for construction of Trauma Centers for immediate emergency care to victims of accidents on National Highways. GoI sanctioned (October 2015) funds of ₹ 30.04 crore (Central share: ₹ 27.04 crore and State share: ₹ 3.00 crore) for establishment and strengthening of trauma care facilities in five hospitals in the State located at Kangra, Chamba, Hamirpur, Mandi and Rampur. Of these, only the trauma center at Nerchowk, Mandi, was operational.

Further, Level III[9] Trauma Centres were also sanctioned by the GoI under NHM for ₹ 8.29 crore during December 2019 at CHC Nalagarh, CHC Kotkhai and DH Una. These Trauma Centers were also not made operational[10] (July 2022) as commented in Chapter VII.

In the exit conference (January 2023), the Secretary (Health) stated that of these Trauma centers only one (Nerchowk, Mandi) was made operational and the remaining were under execution.

The Government in its reply (January 2024) stated that the construction work of Trauma Centre Level-II at RPGMC Kangra had been completed and machinery and equipment worth ₹ 4.09 crore was purchased. The process for purchase of balance was under progress and the patients were being treated in casualty ward. The civil work of Trauma Centre at RKGMC Hamirpur was under construction and some equipment have been purchased and remaining were being purchased. The machinery and equipment for Trauma Centre at Pt. JLNGMC Chamba has been purchased and the patients are treated in casualty ward. For Trauma Centre at IGMC Shimla, construction work has been completed, procurement of machinery is under process and the Trauma Centre will be made functional as soon as approval of the NGT is received.

3.1.3.5 Trauma centre (Tertiary Level)

For developing trauma care facility in IGMC Shimla located on the National Highway, the Government sanctioned (August 2021) funds of ₹ 30.90 crore in different phases. As of June 2022, the construction work had been substantially completed after incurring an expenditure of ₹ 28.00 crore. It was also observed that approval from National Green Tribunal (NGT) was awaited. Further ₹ 3.01 crore were incurred for purchase of machinery and equipment, which was lying unutilised.

During joint physical inspection of Emergency services conducted by Audit, against the checklist of NHM Assessor Guidebook 2013 (DHs)[11], it was noticed that:

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[9] Does not have full availability of specialists but has resources for emergency resuscitation, surgery and intensive care for trauma patients.

[10] The non-functioning of these trauma centers in the State was also reported in Para 2.2 of the Report of the Comptroller and Auditor General of India on Compliance Audit of Social, General and Economic Sectors for the year ended 31 March 2020.

[11] As norms for MCHs were not available in NMC guidelines.

- In IGMC Shimla, the emergency ward was not easily accessible as the entrance was shared with OPD registration as shown in **Picture 3.11**. Private vehicles were parked near the emergency entrance causing hindrance to ambulance and patients coming in their own cars**.**
- In both the MCHs, male and female patients were treated together in the same ward, thereby privacy of the patients was not ensured as shown in **Picture 3.12** (IGMC).
- Beds were not fitted with centralised oxygen supply in IGMC as shown in **Picture 3.13**, while in RPGMC, Kangra, only two beds were found fitted with centralised oxygen supply.
- Dedicated triage system was not available in both the MCHs.
- In both the MCHs, no defined emergency protocol was in place.
- In both MCHs, multiparameter monitor and ventilator were not available in the emergency ward.
- New trauma centres were being set-up/constructed in both the MCHs but were not operational. In RPGMC, equipment like cardiac monitors with defibrillator, beds and ventilators were uninstalled and lying idle in the newly constructed trauma centre as shown in **Picture 3.14.**

Picture 3.11: Emergency Services adjacent to OPD Block at IGMC, Shimla

Picture 3.12: Male and female patients treated together in emergency ward at IGMC, Shimla

Picture 3.13: Emergency ward beds without centralised oxygen supply at IGMC, Shimla

Picture 3.14: Uninstalled and idle equipment of Trauma Centre at RPGMC, Kangra.

3.1.3.6 Trauma Care Centre (Secondary level)

Road traffic deaths and injuries are unpredictable and preventable. 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. Kinnaur district, being highly vulnerable to landslides and where road accidents are very frequent, the trauma care centre should be available 24x7 to cater to the emergency patients within the Golden hour.

It was observed that trauma care centre was not available in DH Kinnaur as of December 2022. In the absence of a functional trauma care centre, patients with serious injuries were referred out to facilities in other districts. As per HMIS data, during 2016-22 there were 3,926[12] cases of accidents and burns in Kinnaur district and the patients had to be rushed to Shimla/Rampur (80-200 km away) / other districts for treatment. Similarly, in Solan and Kangra, full-fledged trauma centre was not available, and these patients were being treated in emergency wards of the hospitals.

3.1.4 Super Speciality services (Operation Theatre, Intensive Care Unit)

3.1.4.1 ICU services (Tertiary level)

As per NMC norms, MCHs should have eight[13] ICU wards. In both the selected MCHs, only five[14] ICUs wards were available. Further, IPHS norms 2012 for DHs stipulates that the number of beds in the ICU may be restricted to five *per cent* of the total bed strength initially but should be expanded to 10 *per cent* gradually. In IGMC, the total operational beds were 873 and the total ICU beds were 26, which is only 2.98 *per cent* of the total bed strength. In RPGMC, the total operational beds were 866 and the total ICU beds were 66, which is 7.62 *per cent* of the total bed strength.

During joint physical inspection of ICU services conducted by Audit, it was noticed that:

- General ICU at IGMC Shimla had six ICU beds equipped with all necessary instruments and equipment and was in close proximity to OT and Blood Bank. Portable X-ray and USG were available on call basis from other departments.
- In Cardiac Care Unit (Medicine), 2-D Echo machine was not working, and 3-D portable machine was available on call basis. Instruments for measuring room temperature and humidity were not available. Seepage and dampness were noticed on the walls as shown in **Picture 3.15,** thereby compromising the hygiene of the ward.

[12] For the year 2016-17, only death cases related to accidental/trauma/burns were available in HMIS and the same has been considered.

[13] Intensive Care Unit (ICU), Intensive Coronary Care Unit (ICCU), Intensive Respiratory Care unit (IRCU), Paediatric Intensive Care (PICU), Neonatal Intensive Care Unit (NICU), Critical Care Burns Unit, Post-op Surgical Critical Care Unit, Obstetric HDU/ICU.

[14] The following were not available in (i) IGMC- PICU, NICU and CCU (Burns) (ii) RPGMC- IRCU, CCU (Burns) and HDU.

Picture 3.15: Seepage and dampness of the wall of CCU at IGMC Shimla.

3.1.4.2 ICU services (Secondary level)

As per IPHS norms 2012, Intensive Care Units in DHs is an essential service with minimum four beds and in case of CH, ICU service is desirable with minimum four beds.

In all the DHs in the State, ICU service was available as of March 2023 except in DH Chamba, Kangra, Solan and Lahaul & Spiti. In the selected CHs, none of the hospitals had ICU.

Due to absence of ICU facility in DHs and CHs, there was every likelihood of critical patients being referred to other HIs where facilities were available, thereby delaying critical cases.

3.1.4.3 Operation Theatre (Tertiary level)

During joint physical inspection of OTs conducted by Audit, it was noticed that:

- In both MCHs, OTs had preparation room, pre-operative room, post-operative rooms and nurse duty rooms.
- In RPGMC Kangra, Central oxygen supply was available in the OT.
- In RPGMC Kangra, OTs were closely located to blood bank, ICU and Radiology but were not in close proximity to Pathology department. In IGMC Shimla, OTs were in close proximity to OPD, pre and post-operative room but ICU, radiology, pathology and blood banks were not in close proximity to OTs.
- In the medicine store of IGMC Shimla (Main OT), 42 consumables and 40 drugs were indented (June 2022), out of which six consumables and 18 drugs were not supplied by the medicine store of the MCH. Dampness of the wall of the main OT medicine store was noticed and drugs were stored in direct sunlight as shown in **Pictures 3.16** and **3.17** respectively**.**
- In IGMC Shimla, changing room and patients waiting area of main OT was found to be without proper ventilation and illumination.

Picture 3.16: Dampness on the wall of main OT medicine store IGMC, Shimla

Picture 3.17: Drugs stored in direct sun light at IGMC, Shimla

3.1.4.4 Operation Theatre (Secondary level)

One of the essential services that is being offered in Secondary level HIs (DHs, CHs and CHCs) is Operation Theatre (OT). IPHS norms 2012 prescribe OT for elective major surgery, emergency services and Ophthalmology/ENT for DHs/CHs (two to four as per need) and in case of CHC, one operation theatre should be available. Details of major and minor operations carried out in the selected DHs is shown in **Table 3.19**:

Table 3.19: Number of operations carried out in selected DHs

Year	DH Kinnaur					DH Solan					DH Kangra				
	Major	Minor	Total	No. of surgeons	Surgery per surgeon per year	Major	Minor	Total	No. of surgeons	Surgery per surgeon per year	Major	Minor	Total	No. of surgeons	Surgery per surgeon per year
2016-17	18	547	565	1	565	1,445	700	2,145	9	238	841	121	962	1	962
2017-18	1	591	592	1	592	975	1,061	2,036	10	204	619	32	651	1	651
2018-19	67	998	1,065	2	533	1,410	1,120	2,530	8	316	519	33	552	1	552
2019-20	291	992	1,283	2	642	1,023	806	1,829	9	203	261	21	282	1	282
2020-21	834	832	1,666	2	833	652	224	876	8	110	2	0	2	1	2
2021-22	1,039	920	1,959	3	653	511	316	827	11	75	30	2	32	1	32

Source: Information provided by the Health Institutions.

As can be seen from **Table 3.19**:

- Major operations were carried out in all the selected DHs.
- During 2016-22, number of surgeries per doctor per year in the selected DHs ranged between 533 and 833 for DH Kinnaur, between 75 and 316 for DH Solan and between two and 962 for DH Kangra.

Further it was noticed that in DH Kinnaur, major operations were conducted without the services of a regular anaesthetist during August 2016 to April 2018 as mentioned in **Para 2.2.3.5**.

Table 3.20: Number of operations carried out in selected CHs

Year	Chango		Kandaghat		Shahpur		Baijnath		Jawalamukhi		Thural	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
2016-17	0	0	0	0	0	0	2	12	0	505	0	0
2017-18	0	0	0	0	0	0	3	30	0	437	0	0
2018-19	0	0	0	0	0	0	2	56	0	574	0	0
2019-20	0	0	0	0	0	0	10	37	0	634	0	0
2020-21	0	0	0	0	0	0	7	18	0	572	12	14
2021-22	0	0	0	8	0	0	7	0	0	0	18	0
Total	**0**	**0**	**0**	**8**	**0**	**0**	**31**	**153**	**0**	**2,722**	**30**	**14**

Source: Information provided by the Health Institutions.

In two out of the six selected CHs, 31 and 30 major operations were conducted in CH Baijnath and CH Thural respectively during 2016-22 and in the other four CHs, no major operations were conducted. In four[15] out of the six selected CHs, 2,897 minor surgeries were conducted during 2016-22. In the other two CHs (Shahpur and Chango), no operations were conducted.

Among the selected CHCs, OT was available in CHC Syri, however it was non-functional due to non-posting of staff. The patients requiring OT services were referred to DH, Solan.

3.1.5 Maternity services

Maternal health refers to the health of women during pregnancy, childbirth and the postpartum period, whereas pre-natal health refers to health of women from 22 completed weeks of gestation until seven completed days after birth. New-born health is the baby's first month of life. A healthy start during the prenatal period influences infancy, childhood and adulthood.

From the time of the launch of the National Rural Health Mission in 2005, Community Processes have been at the heart of the outcomes of the Mission. The Accredited Social Health Activist (ASHA) programme was introduced as a key component of the Community Processes Intervention. Over the past years, the ASHA programme has emerged as the largest community health worker programme in India and is considered a critical contributor to enabling people's participation in health. Maternity services are being provided through HSCs, PHCs, CHCs, CHs and DHs.

3.1.5.1 Availability of ASHA workers in the state

The Community Processes guidelines issued by NRHM (June 2013) encompassing ASHA provides population as a criterion[16] for selection of ASHA worker in the State. As per population of the State for the year 2022 (78,53,169 as of 31/03/2022[17]) there should be 7,853 ASHAs in the State.

It was noticed that there were 7,848 ASHAs in the State as of March 2022, which shows that one ASHA was available for a population of 1,000. In the eight selected BMOs, against the population of 7,50,712, 794 ASHAs were available as on 31/03/2021 which shows that one ASHA was available for a population of 946.

3.1.5.2 Training in the State and selected BMOs

Capacity building of ASHA is critical in enhancing their effectiveness. It was envisaged that training will help to equip them with necessary knowledge and skills, resulting in achievement of the schemes objectives.

Audit noticed that against the target of 27,724 number of ASHAs to be trained in the State, 26,414 ASHAs were trained, which was more than 95 *per cent* of the target. The details are given in **Table 3.21**.

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15 CH Kandaghat-eight, CH Baijnath-153, CH Thural-14 and CH Jawalamukhi-2,722.

16 The general norm will be 'One ASHA per 1000 population'. In tribal, hilly, desert areas, the norm could be relaxed to one ASHA per habitation, depending on workload etc.

17 Projected population of Himachal Pradesh in 2022 as per Directory of HIs by GoHP (2022).

Table 3.21: Details of training imparted to ASHAs

Year	No. of ASHAs targeted to be trained during the year	No. of ASHAs trained during the year
2016-17	7,301	7,040
2017-18	6,258	5,967
2018-19	5,848	5,457
2019-20	4,712	4,379
2020-21	3,512	3,479
2021-22	93	92
Total	**27,724**	**26,414 (95.27 *per cent*)**

Similarly, in the eight selected Block Medical Officers, against the target of 3,271 number of ASHAs to be trained, 3,252 (99.42) ASHAs were trained with a marginal shortfall of 19 (0.58 *per cent*). Thus, the training coverage of ASHAs in the State was commendable.

3.1.5.3 Activities conducted by ASHAs

ASHA is a health activist in the community who will create awareness on health and its social determinants and mobilise the community towards local health planning and increased utilisation and accountability of the existing health services. She would be a promoter of good health practices.

Details of the main activities carried out by ASHAs during 2020-21 in the eight selected BMOs is shown in **Table 3.22**.

Table 3.22: Details of the main activities carried out by ASHAs during 2020-21

Activities of Asha	Name of Block Medical Office							
Name of Activities	**Dharampur**	**Syri**	**Thural**	**Mahakal**	**Jawalamukhi**	**Shahpur**	**Pooh**	**Sangla**
Nos. of ASHA workers	141	47	91	110	180	162	31	40
Nos. of ANCs	2,574	284	278	549	282	605	251	277
Nos. of Deliveries reported (institutional)	482	251	171	757	263	589	210	277
Nos. of full immunisations 1st year	1,949	484	903	1,167	1,902	1,580	310	136
Nos. of full immunisations 2nd year	1,825	514	749	1,147	1,871	1,627	352	130
No. of beneficiaries covered under MAA[18]	0	36	154	229	32	599	96	44
No. of beneficiaries covered under VHND[19]	883	374	1,068	995	0	613	297	300
Total	**7,854**	**1,990**	**3,414**	**4,954**	**4,530**	**5,775**	**1,547**	**1,204**

In Himachal Pradesh, the ASHA worker was provided honorarium @ ₹ 1,250/- per month upto June 2019 which was revised to ₹ 1,500/- in July 2019, ₹ 2,750/- in April 2021 and ₹ 4,700/- in April 2022.

3.1.5.4 Maternity services (Tertiary level)

Kamla Nehru State Hospital (Mother and Child) under IGMC Shimla had 247 beds and RPGMC Kangra had 102 beds, with another 200 bedded new Mother & Child Hospital block

[18] MAA- Mother's Absolute Affection Programme- Programme to improve the nutrition of the children by refocusing on breastfeeding and Infant Young Child Feeding Practices.

[19] VHND- Village Health and Nutrition Day -monthly day to provide ANC etc. to women and vaccine etc. to children.

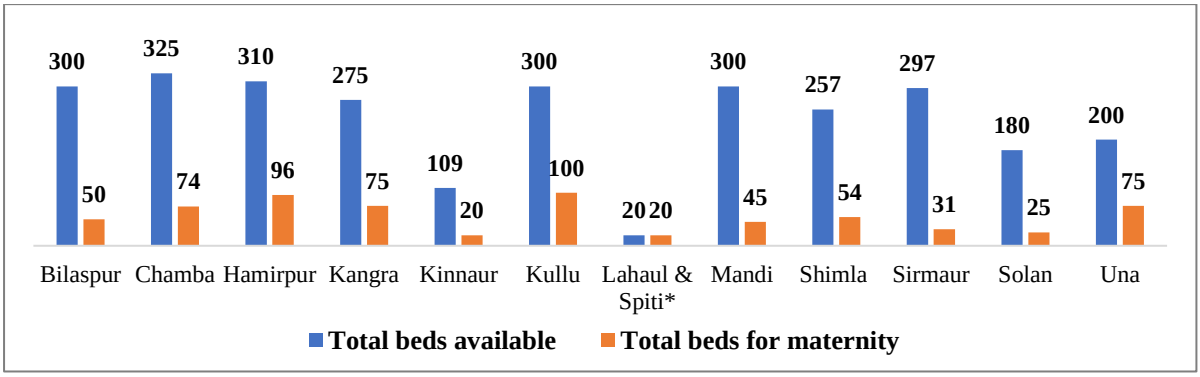
under construction. The only gynaecologist posted in KNSH (IGMC) Shimla, was transferred during May 2019 to DH Mandi. During the above period, services of a gynaecologist from IGMC were availed. In RPGMC Kangra, there was no shortage of manpower.

It was observed that there were 118 (Shimla-48, Kangra-70) maternal deaths and 396 neonatal deaths in Shimla, (data for Kangra not available) during 2016-21. In both the hospitals, review for the reasons of death was conducted.

3.1.5.5 Maternity services (Secondary level)

1. Availability of maternity beds against total available beds in all district hospitals in the State is shown in **Chart 3.6**.

Chart 3.6: Availability of maternity beds against total available beds in all district hospitals as of March 2022



**In DH Lahaul & Spiti, no beds have been earmarked for maternity ward.*

It can be seen from **Chart 3.6** that:

- Availability of maternity beds against total beds in the DHs ranged between 10 to 38 *per cent*.
- In DH Kinnaur, minimum 20 beds were available whereas in DH Kullu maximum 100 beds were available.

2. Audit observed that there was shortage of gynaecologists in the selected HIs as detailed in **Table 3.23**.

Table 3.23: Availability of Gynaecologists in selected HIs

Name of hospital	Sanctioned bed strength	Total deliveries (2016-21)	Gynaecologist as per IPHS norms 2012	Gynaecologist available				
				2016-17	2017-18	2018-19	2019-20	2020-21
DH Kinnaur	125	1,684	2	0	0	1	1	1
DH Solan	200	12,786	3	1	2	2	1	1
DH Kangra	300	3,868	4	2	0	1	1	2
CH, Chango	10	3	1	0	0	0	0	0
CH Kandaghat	50	179	1	0	0	0	0	0
CH Thural	100	210	1	0	0	0	0	0
CH Jawalamukhi	100	2,617	1	0	0	0	0	0
CH Shahpur	100	1,758	1	0	0	1	1	1
CH Baijnath	100	686	1	0	0	0	0	0

Source: Information provided by the Health Institutions, HMIS data and Hospital Records

From **Table 3.23**, it can be seen that though gynaecologists were available in the selected DHs and one CH (Shahpur) out of the six selected CHs, availability was not in line with IPHS norms during all the years. Gynaecologist was not available in any of the selected CHCs.

Hence, it was evident that the deliveries were being conducted in the five CHs without availability of regular gynaecologists. Though two maternal deaths (DH Solan-one, DH Kangra-one) and 37[20] neonatal deaths were noticed during 2016-21, no death review was conducted for maternal and neonatal deaths. It also transpires that complicated pregnancy cases were either referred to private hospitals or to other districts for treatment.

In the exit conference (January 2023), the Secretary (Health) stated that non-availability of gynaecologist in Kinnaur district was due to difficult topology. Area based incentives are being planned to encourage doctors to choose these areas. Further, regarding providing of specialists in CHs, it was stated that the government is planning for identification of blocks for posting of specialists.

3.1.5.6 Labour room services (Secondary and primary)

Labour room is usually a furnished room in HIs where both labour and deliveries take place. IPHS norms 2012 envisage that HIs (DHs/CHs/CHCs/PHCs) should have labour room at all levels. Details of availability of labour rooms in the selected districts are shown in **Table 3.24**.

Table 3.24: Availability of labour room in selected districts as on date of audit

Total Number HIs	Kinnaur District				Solan District				Kangra District			
	DH	CH	CHCs	PHCs	DH	CH	CHCs	PHCs	DH	CH	CHCs	PHCs
	1	1	4	23	1	5	7	38	1	21	23	89
HIs having Labour room	1	0	4	1	1	5	7	6	1	18	14	5

Source: Information provided by the Health Institutions.

From **Table 3.24**, it can be seen that labour rooms were available in all the selected DHs, in 23 out of 27 CHs, 25 out of 34 CHCs and 12 out of 150 PHCs. In Kinnaur district, CH Chango, which was the only CH in the district, did not have a labour room. Thus, in the HIs where labour rooms were not available, patients had to move to other HIs where the facility was available.

3.1.5.7 Antenatal Care Facility

As per the Maternal Health Division, Ministry of Health and Family Welfare, all pregnant women (PW) are required to be registered with the nearest healthcare facility and minimum four Antenatal Care (ANC) check-ups are needed to be conducted. All the registered pregnant women should be given Iron Folic Acid (IFA) tablets and Calcium tablets compulsorily. A total of 180 IFA tablets (earlier 100) have been prescribed for six months during pregnancy and are to be continued for six months post-partum.

The position of ANC registration and services provided in the State during 2016-22 is shown in **Table 3.25**.

[20] DH Solan-10, Kinnaur-nine, Kangra-11, CH Baijnath-three, CH Shahpur-three, CH Jawalamukhi-one

Table 3.25: Position of ANC registration and services provided in the State

Year	Total pregnant women registered for ANC	Not registered within first trimester	Not received three*ANC check-ups	Pregnant women who did not receive TT1***	Pregnant women who did not receive TT2	Pregnant women who did not receive 100/ 180** IFA tablets
2016-17	1,21,493	20,096	21,028	41,438	16,968	15,868
2017-18	1,18,966	17,675	59,506	38,066	64,740	49,669
2018-19	1,12,553	14,327	23,998	33,763	39,640	22,627
2019-20	1,10,694	13,835	24,644	39,886	44,717	16,777
2020-21	1,11,417	13,524	25,538	30,511	37,372	16,574
2021-22	1,06,340	13,852	20,945	28,017	34,361	17,486
Total (*per cent*)	**6,81,463**	**93,309 (13.69)**	**1,75,659 (25.78)**	**2,11,681 (31.06)**	**2,37,798 (34.89)**	**1,39,001 (20.39)**

Source: HMIS data
**2017-18 onwards pregnant women are supposed to get four or more ANC check-ups*
***2017-18 onwards pregnant women are supposed to receive 180 IFA.*
**** Tetanus Toxoid*

It can be seen from **Table 3.25** that:

- The number of pregnant mothers who were not registered within the first trimester was 13.69 *per cent* of the total registered pregnant mothers in the State.
- The number of mothers who did not receive three or more ANC check-ups was 25.78 *per cent* of the total registered pregnant mothers in the State.
- Total number of registered mothers showed a decreasing trend in the districts from 2016-17 onwards except in 2020-21.
- The number of pregnant women who did not receive TT1 was 31.06 *per cent* of the total registered pregnant women in the State.
- The number of pregnant women who did not receive TT2 was 34.89 *per cent* of the total registered pregnant women in the State.
- Out of total registered pregnant women, 20.39 *per cent* did not receive 100/180 IFA tablets.

The position of ANC registration and services provided in the selected districts during 2016-17 to 2021-22 are detailed below in **Table 3.26**.

Table 3.26: Position of ANC registration and services provided in the selected districts

Year	Total pregnant women registered for ANC	Not registered within first trimester	Not received three*ANC check-ups	Pregnant women who did not receive TT1	Pregnant women who did not receive TT2	Pregnant women who did not receive 100/180** IFA tablets
2016-17	38,961	5,579	5,674	12,040	4,515	4,643
2017-18	38,024	4,768	19,120	11,059	19,838	15,740
2018-19	36,793	5,112	8,177	10,036	11,879	8,969
2019-20	35,743	5,392	9,428	8,839	10,607	4,553
2020-21	35,969	5,659	9,369	8,702	10,996	6,833
2021-22	34,538	6,313	8,904	8,257	9,944	7,354
Total (*per cent*)	**2,20,028**	**32,823 (14.92)**	**60,672 (27.57)**	**58,933 (26.78)**	**67,779 (30.80)**	**48,092 (21.86)**

*Source: HMIS data, *2017-18 onwards pregnant women are supposed to get four or more ANC check-ups, **2017-18 onwards pregnant women are supposed to receive 180 IFA,*
**** Tetanus Toxoid*

It can be seen from **Table 3.26** that:

- The number of pregnant women who were not registered within the first trimester was 14.92 *per cent* of the total registered pregnant women in the selected districts.
- The number of women who had not received three or more ANC check-ups was 27.57 *per cent* of the total registered pregnant women.
- Total number of registered mothers showed a decreasing trend in the districts from 2016-17 onwards upto to 2021-22 except marginal increase in 2020-21.
- The number of pregnant women who did not receive TT1 was 26.78 *per cent* of the total registered pregnant women in the selected districts.
- The number of pregnant women who did not receive TT2 was 30.80 *per cent* of the total registered pregnant women in the selected districts.
- Out of registered pregnant women, 21.86 *per cent* did not receive 100/180 IFA tablets.

Based on the above data, audit noticed that the district health authority was not able to keep track of all pregnant women who were registered for ANC to ensure that they received the stipulated quantum of ANC, timely check-ups and TT and IFA tablets at required intervals.

In the exit conference (January 2023), regarding shortfall in ANC check-up, the Secretary (Health) stated that the position will be checked and detailed reply will be furnished. Further, it was stated that Iron Folic Acid Tablets are now abundantly available and issued which was constrained earlier due to unavailable stock.

3.1.5.8 Preparation of Partographs (MCHs, DHs)

A partograph consists of a graphic representation of the process of labour. It enables the birth attendant to identify and manage complications of labour promptly or to take a decision to refer the patient to a higher medical facility, if required. Overall quality of care as provided by the health centres during labour is also monitored through the partograph.

In the selected MCHs, in RPGMC Kangra, 6,280 (73.90 *per cent*) partographs were plotted against 8,498 deliveries during 2020-21 (2016-20 data not provided by the MCH) and in KNSH Shimla, 32,927 (94.01 *per cent*) partographs were plotted against 35,023 deliveries during 2016-21.

The position of plotting of partograph in the selected DHs is mentioned in **Table 3.27**:

Table 3.27: Position of partographs plotted in selected districts

Year	DH Kinnaur		DH Solan		DH Kangra	
	Total deliveries	Partograph plotted (Nos./ *per cent*)	Total deliveries	Partograph plotted (Nos./ *per cent*)	Total deliveries	Partograph plotted (Nos./ *per cent*)
2016-17	494	324 (65.59)	2,947	589 (19.98)	1,381	1,381 (100)
2017-18	429	363 (84.62)	2,694	805 (29.88)	937	937 (100)
2018-19	347	300 (86.46)	2,510	1,373 (54.70)	562	562 (100)
2019-20	328	313 (95.43)	3,430	1,238 (36.09)	746	746 (100)
2020-21	165	160 (96.97)	2,081	1,058 (50.84)	225	225 (100)
Total	**1,763**	**1,460 (82.81)**	**13,662**	**5,063 (37.05)**	**3,851**	**3,851 (100)**

Source: Information provided by the Health Institutions.

It can be seen from **Table 3.27** that in DH Kangra, 100 *per cent* partographs were plotted while in DH Solan and DH Kinnaur, partographs plotted were in the range of 37 *per cent* to 83 *per cent*.

3.1.5.9 Deliveries through Caesarean section (C-section)

Caesarean or C-section delivery is the use of surgery to deliver babies. NHM Guidelines on "Engaging General Surgeons for Performing Caesarean Sections and Managing Obstetric Complications" stated that around eight to 10 *per cent* of total delivery cases require C-Section.

The statement showing C-section deliveries as per NFHS-5 in the State of Himachal Pradesh is given in **Table 3.28**:

Table 3.28: Status of Caesarean delivery (C-section) in the State

Indicators	2015-16	2019-20
C-section delivery *(per cent)*	21	16.7
Private health facility c-section deliveries (*per cent*)	51.4	44.4
Public health facility c-section deliveries (*per cent*)	17.4	16.4

Source: NFHS 5 survey report

As observed from **Table 3.28**, the percentage of C-section deliveries has reduced from 21 *per cent* in 2015-16 to 16.7 *per cent* in 2019-20 which is a positive indicator. The percentage of C-section deliveries was higher in private health facilities compared to public health facilities of the State.

In the selected MCHs, in RPGMC Kangra, 13,760 (30.23 *per cent*) C-section deliveries were conducted against 45,511 total deliveries during 2016-21 and in KNSH Shimla, 11,138 (31.80 *per cent*) C-section deliveries were conducted against 35,023 total deliveries during 2016-21. Status of C-Section deliveries in the selected DHs is shown in **Table 3.29**.

Table 3.29: C-section deliveries against total IDs in selected DHs

Year	DH Kinnaur		DH Solan		DH Kangra	
	Institutional deliveries	C-section deliveries (*per cent*)	Institutional deliveries	C-section deliveries (*per cent*)	Institutional deliveries	C-section deliveries (*per cent*)
2016-17	494	95 (19.23)	2,947	621 (21.07)	1381	201 (14.55)
2017-18	429	39 (9.09)	2,694	422 (15.66)	937	141 (15.05)
2018-19	347	68 (19.60)	2,510	643 (25.62)	562	110 (19.57)
2019-20	328	59 (17.99)	3,430	509 (14.84)	746	131 (17.56)
2020-21	165	16 (9.70)	2,081	531 (25.52)	225	46 (20.44)

Source: Information provided by the Health Institutions..

As can be seen from **Table 3.29**, C-Section deliveries in the selected DHs ranged between nine *per cent* and 26 *per cent*. In DH Kinnaur, C-Section deliveries were conducted without the services of a regular anaesthesiologist during August 2016 to April 2018. In DH Kangra and DH Kinnaur, C-section deliveries were conducted without any gynaecologist in 2017-18.

C-section deliveries without specialists are very risky as they may lead to life threatening complications for both mother and child.

3.1.5.10 Status of Still birth rate

Still birth rate is a key indicator of the absence of quality care during pregnancy and childbirth. Still births should be as few as possible.

In the selected MCHs, in RPGMC Kangra, 711 (1.56 *per cent*) still births against 45,511 deliveries during 2016-21 and in KNSH Shimla, 581 (1.66 *per cent*) still births against 35,023 deliveries during 2016-21 were reported. Still births status in the selected districts is given in **Table 3.30**:

Table 3.30: Still birth status in the selected Districts

Year	District Kinnaur		District Solan		District Kangra	
	Total no. of deliveries	Total No. of still birth (*per cent*)	Total no. of deliveries	Total No. of still birth (*per cent*)	Total no. of deliveries	Total No. of still birth (*per cent*)
2016-17	614	14 (2.28)	6,473	78 (1.21)	17,337	342 (1.97)
2017-18	463	4 (0.86)	6,662	82 (1.23)	17,218	325 (1.89)
2018-19	420	11 (2.62)	7,324	90 (1.23)	17,155	244 (1.42)
2019-20	424	2 (0.47)	8,510	79 (0.93)	17,916	244 (1.36)
2020-21	291	9 (3.09)	8,730	121 (1.39)	18,184	248 (1.36)
2021-22	299	2 (0.66)	9,184	119 (1.29)	16838	203 (1.20)

Source: HMIS data

As can be seen from **Table 3.30**, the rate of still births ranged between 0.47 *per cent* and 3.09 *per cent* in the selected districts. The still birth rate shows a mixed trend in Kinnaur and Solan district whereas in Kangra district, it was on a decreasing trend.

3.1.5.11 Discharge within 48 hours of delivery

As per Janani Shishu Suraksha Karyakaram (JSSK) Guidelines, the first 48 hours after delivery are vital for detecting any complications and its immediate management. Care of the mother and baby (including immunisation) are essential immediately after delivery and at least upto 48 hours. During this period, the mother may be advised for extra calories, fluids and adequate rest which is required for well-being of the baby and herself.

The position of number of women discharged within 48 hours in all the selected HIs (*per cent*) up to CHC level is shown in **Table 3.31**:

Table 3.31: *Per cent* of pregnant women discharged within 48 hours in selected HIs

District	Hospital	2016-17	2017-18	2018-19	2019-20	2020-21
Kinnaur	DH Kinnaur	15.23	14.76	14	9.90	16.88
	CH Chango	0	0	0	100	0
	CHC Pooh	44.44	11.11	60	66.67	100
	CHC Sangla	0	12.50	50	44.44	4.17
Solan	DH Solan	72.82	84.15	73.45	72.93	73.22
	CH Kandaghat	76	72.22	100	85.29	53.13
	CHC Syri	100	100	100	0	22.22
	CHC Dharampur	85.96	80.95	91.18	64.18	100
Kangra	DH Kangra	14.64	0	0	0	0
	CH Thural	0	34.62	16	47.37	66.67
	CH Jawalamukhi	58.84	67.06	60.09	26.89	38.39
	CH Shahpur	0	17.56	0	0	0
	CH Baijnath	0	0	0	0	37.84
	CHC Bachhwai	0	0	0	0	0
	CHC Majheen	0	0	0	0	0
	CHC Bir	0	0	0	15	0

Source: HMIS data of test-checked hospitals

It can be seen from **Table 3.31** that in seven instances all women were discharged within 48 hours. This trend was mainly observed in CHC Syri (three instances) followed by CH Kandaghat, CHC Dharampur, CHC Pooh and CH Chango (one instance each).

In the exit conference (January 2023), the Secretary (Health) stated that due to non-availability of adequate beds in HIs, mothers had to be discharged from hospital after delivery.

3.1.6 Blood Bank services

As per IPHS norms 2012, Blood Bank is one of the essential services which is to be provided in DHs/CHs. Blood Bank shall be in close proximity to the pathology department and at an accessible distance to OT, ICU, emergency and accident departments. Blood Banks should follow all existing guidelines and fulfil all requirements as per the various Acts pertaining to setting up of the Blood Bank.

In Himachal Pradesh, 25 Public Blood Banks were available.

3.1.6.1 Blood Bank services (Tertiary level)

As per NMC norms, there shall be a well-equipped air-conditioned Blood Bank capable of providing component therapy. The Blood bank and Blood transfusion services should conform to the guidelines of the National AIDS Control Organisation.

During joint physical inspection of Blood Banks (RPGMC Kangra, IGMC Shimla and KNSH Shimla) conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH), it was noticed that:

- All the three Blood Banks were having authorisation for blood storage.
- Blood Bank in RPGMC was approachable by road and the other two blood banks were not directly approachable by road. They were approachable through stairs only.
- In none of the Blood Banks, information regarding number of blood units available was displayed, as required in IPHS norms.
- In RPGMC, Kangra, two refrigerators (-80 degree), another normal refrigerator as shown in **Picture 3.18** and some essential equipment like Elisa machine as shown in **Picture 3.19** were non-functional from June 2021, which were essential for maintaining quality & condition of the blood collected.
- All three Blood Bank authorities confirmed that they were adhering to NACO guidelines[21].
- Different components of blood need different storage conditions and temperature requirements for therapeutic efficacy, however, in KNSH Blood Bank, component-wise storage facility was not available.

[21] National AIDS Control Organization guidelines for collection, testing, storing and distribution of blood and its components.

	
Picture 3.18: One of the non-functional refrigerators at RPGMC, Kangra	**Picture 3.19: Non-functional Elisa machine at RPGMC, Kangra**

3.1.6.2 Blood Bank services (secondary level)

In all the DHs in the State, blood bank service was available as of March 2023 except in DH Lahaul & Spiti. This was also confirmed during the audit of selected DHs.

3.1.7 Diagnostic services

Diagnostic service is required to provide effective diagnosis of the disease suffered by the patient, measure the quantum of medicines to be provided, quantify the extent of cure effected, identify the medical sensitivities of the patient to avoid wrong medication resulting in adverse effects and extend the research and development capabilities of the medical process.

3.1.7.1 Availability of Radiology services (Tertiary level)

As per NMC norms, Medical College Hospital should have facilities for conventional, static and portable X-rays, Fluoroscopy, Contrast studies, Ultra-sonography, Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) facility.

During joint physical inspection of Radiology services conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH), it was noticed that:

- In IGMC, Shimla, quality assurance test of various X-ray machines was not conducted by due dates as required in E-licensing of Radiation Applications System Guidelines, 2016.
- In both the MCHs, it was noticed that the waiting period of the OPD patients for MRI service was around 90 days. For CT scan, the waiting period was 30 days in RPGMC Kangra and 40 days in IGMC Shimla indicating high patient load for these tests. For in-patients and emergency patients, both the services were available within one or two days.
- The Radiology department of IGMC Shimla did not have sufficient power backup as two out of four Ultrasonography machines were not working during power outage.
- One 1000 mA (as shown in **Picture 3.20)** and one 800 mA static X-Ray machine, each at IGMC, Shimla and RPGMC, Kangra were found non-functional.

Picture 3.20: Non-functional 1000 mA X-ray machine at IGMC Shimla

In the exit conference (January 2023), the Secretary (Health) stated that to reduce the waiting time for MRI and CT scan services action will be taken for purchase of new machines.

The Government in its reply (January 2024) had stated that a CT scan machine at Dr RPGMC Kangra has been installed and made functional and an MRI machine was likely to be installed. Further, CT Scan machine has been installed at AIMSS Chamiana and it will reduce the waiting time. The proposal for replacement of old MRI machine in IGMC Shimla has been initiated.

3.1.7.2 Availability of Radiology services (Secondary level)

IPHS norms 2012 prescribe radiology services for DHs/CHs (essential ones like X-ray, Dental X-ray and Ultrasonography) and CT scan and Mammography desirable for DHs. In case of CHC, X-ray service should be available. Adequate availability of functional radiology equipment, skilled human resources and consumables are the key requirements for the delivery of quality radiology services.

1. The details of availability of radiology services in all the DHs in the State as of March 2023 are given in **Table 3.32**.

Table 3.32: Availability of radiology services in the DHs

Name of Test/Diagnostic Service	Name of District Hospital											
	Bilaspur	Chamba	Kangra	Kinnaur	Kullu	Hamirpur	Lahaul & Spiti	Shimla	Solan	Sirmaur	Una	Mandi
X-ray	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dental X-ray	✓	✓	✓	×	✓	✓	×	✓	×	✓	✓	✓
Ultrasonography	×	✓	✓	×	✓	✓	✓	✓	✓	✓	×	✓
CT scan	✓	✓	✓	×	✓	✓	×	✓	✓	✓	✓	✓
Barium Swallow, Barium meal, Barium enema, IVP	×	✓	×	×	×	×	×	×	×	✓	×	×
MMR (Chest)	×	×	×	×	×	×	×	×	×	×	×	×
Hysterosalpingo-graphy (HSG)	×	×	✓	×	✓	×	×	×	×	×	×	×

Source: Information provided by the Health Institutions.

It can be seen from **Table 3.32** that:

- X-ray service was available in all DHs in the State.
- Dental X-ray service was available in all DHs in the State except in DH Kinnaur, Lahaul & Spiti and Solan.

- Ultrasonography service was available in all DHs in the State except in DH Bilaspur, Kinnaur and Una.
- CT Scan service was available in all DHs in the State except in DHs Kinnaur and Lahaul & Spiti.
- Barium Swallow, Barium meal, Barium enema and IVP service was available only in DHs Chamba and Sirmaur.
- MMR service was not available in any of the DHs in the State.
- HSG service was available only in DHs Kangra and Kullu in the State.

Among the services checked, most of the services were not available in DH Kinnaur (only X-ray available) followed by DH Lahaul & Spiti (only two of the services available).

2. The details of availability of radiology services in the selected HIs are given in **Table 3.33**.

Table 3.33: Availability of essential Radiology services in selected HIs as on date of audit

HIs	X-ray (essential for CH/CHC)	Dental X-ray (essential for CH)	Ultrasonography (essential for CH)
CH Chango	×	×	×
CH Kandaghat	✓	×	✓
CH Thural	✓	✓	✓
CH Jawalamukhi	✓	×	✓
CH Shahpur	✓	✓	✓
CH Baijnath	✓	✓	✓
CHC Pooh	✓	×	×
CHC Sangla	✓	✓	×
CHC Syri	✓	✓	×
CHC Dharampur	✓	✓	×
CHC Bachhwai	×	×	×
CHC Majheen	×	×	×
CHC Bir	×	✓	×

Source: Information provided by the Health Institutions.

It can be seen from **Table 3.33** that:

- Out of the six selected CHs, X-ray service was available in all CHs except in CH Chango, Dental X-ray service was available in three CHs and Ultrasonography was available in five CHs. Further, regular service was not provided in three CHs[22] due to non-deployment of a regular Radiologist as commented in **Para 2.2.5.4**.
- In CH Thural, it was noticed that a new Ultrasound machine was installed in March 2021. The old Ultrasound machine was lying unutilised, and no action was taken for its transfer to other HIs (June 2022).
- In the seven selected CHCs, Ultrasonography was not available in any of the CHCs, X-ray was available in four out of seven CHCs and Dental X-ray was available in four out

[22] Baijnath, Shahpur, Jawalamukhi

of seven CHCs. In CHC Sangla, Dental X-Ray was received during August 2020, but was not put to use due to non-availability of sensor, laptop and printers.

- None of the services were available in CHCs Bachhwai, Majheen and Bir in Kangra district (except dental X-ray in CHC Bir). Out of the selected 17 PHCs, X-ray service was available only in PHC (Sultanpur).

Thus, due to non-availability of X-ray service in one selected CH, three selected CHCs and 16 selected PHCs; dental X-ray in three DHs, three selected CHs, three selected CHCs, ultrasonography in three DHs, one selected CH and all selected CHCs resulted in denial of radiology services and patients had to go to other HIs for availing the service.

3.1.7.3 Outsourcing of X-ray Lab on PPP mode

An agreement for outsourcing of X-Ray Image based Transmission and Reporting of Radiology Images was executed between MD, NHM and a firm (M/s Krsnaa Diagnostics Pvt Ltd) in May 2018 for all the districts. The services were outsourced for a period of five years i.e. from 17/05/2018 to 16/05/2023 for the entire State.

During audit, it was noticed that outsourcing of X-ray services was done in seven selected HIs[23] during May 2018 to March 2022 even where Radiographers and X-ray machines were available. The Government had to incur extra expenditure for payment of X-ray charges, which could have been avoided. However, it was observed that in places where X-ray services could not be ensured in-house, outsourcing services were not provided as discussed below:

- In CHC Pooh, an X-ray machine was available, but X-ray service was not provided in the hospital as a radiographer was not posted from September 2015 to October 2020 and no outsourcing was done for this period. Patients in this area had to travel to other HIs having X-ray services.
- In CH Chango, an X-Ray machine was available, but neither was a radiographer posted nor was any outsourcing done. Resultantly, no X-ray facility was provided.
- In PHC Spillow and PHC Ribba, X-ray machines were available, but neither were radiographers posted nor was outsourcing done during 2016-21. Resultantly, X-ray facility service was not provided to the patients.

Thus, outsourcing of X-ray services where equipment and manpower was available, resulted in extra burden on the State exchequer. On the other hand, in HIs where equipment was available, the facility was not provided due to non-availability of manpower. In such cases, no outsourcing was done, leading to inconvenience to the patients.

In the exit conference (January 2023), the Secretary (Health) stated that outsourcing of X-ray lab on PPP mode was done due to shortage of radiologists and radiographers. The reply is not tenable as outsourcing services were provided where the resources (equipment and operators) were already available, while HIs without requisite operators were not covered.

[23] DH Kangra, DH Solan, CHC Syri, CH Kandaghat, CH Jawalamukhi, CH Baijnath, CH Shahpur.

3.1.7.4 Pathology services (Tertiary Level)

NMC norms stipulate that there shall be a well-equipped and updated Central Laboratory, preferably along with common collection area for all investigations in histopathology, cytopathology, haematology, immune pathology, microbiology, biochemistry and other specialised work if any. The Central Laboratory should be co-ordinated by one of the related teaching departments of the medical college.

In IGMC, Shimla all the laboratories were not in the same building and were scattered in different places. However, in RPGMC, Kangra all the laboratories were in the same building on different floors. There was a common sample collection centre in both the MCHs.

During joint physical inspection of pathology services conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH), it was noticed that:

- In IGMC, Shimla, Widal test for typhoid was not conducted as reagents and kits were not available since September 2021.
- In both the MCHs, the sample collection centre was found to be overcrowded and the waiting space was not sufficient. The patients/attendants were resting on the floors. Drinking water facility was also not available near the sample collection centre in both the MCHs.
- In both the MCHs, records pertaining to calibration of measuring equipment were not found and calibration of equipment was done internally, and no certification was obtained from any external agency.
- Both the MCHs had not established any external assurance system for validation of lab tests. In RPGMC, Kangra, some of the tests like Measles and Rubella were certified from WHO.
- In IGMC, Shimla none of the laboratories had power back-up system. In RPGMC, Kangra, the lab had a centralised power back-up system.
- In IGMC, Shimla, reagent and consumables inside the laboratories were not kept away from direct sunlight and there was dampness and seepage in the store.
- In both the MCHs, no periodic health check-up of staff working in the laboratories was conducted during the period of audit (2016-17 to 2020-21).

3.1.7.5 Pathology services (Secondary Level)

Pathology services are the backbone of any hospital for extending evidence-based healthcare to the public. As in the case of radiology services, availability of essential equipment, reagents and human resources are the main requirements for the delivery of quality pathology services through in-house laboratories.

IPHS norms 2012 prescribe 88 types of pathological investigations required to be carried out in DHs, 48 in CHs and 33 in CHCs in the categories of Clinical pathology, Pathology, Microbiology, Serology, Biochemistry, Cardiology, ENT, Ophthalmology, Endoscopy, and Respiratory.

Availability of pathology services in DHs in the State as of March 2023 is shown in **Table 3.34**.

Table 3.34: Availability of Pathology Services (number of available tests) in DHs in the State (as of March 2023)

Name of Pathology tests (types of Pathological tests)	Bilaspur	Chamba	Kangra	Kinnaur	Kullu	Hamirpur	Lahaul & Spiti	Shimla	Solan	Sirmaur	Una	Mandi
Clinical pathology	4	5	3	3	12	4	4	4	2	5	7	2
Pathology	2	3	1	2	2	11	2	0	0	4	4	1
Microbiology	1	7	1	2	0	4	1	0	3	8	3	1
Serology	3	2	2	0	7	1	3	1	2	2	5	3
Biochemistry	6	7	6	3	20	7	4	5	10	7	11	7
Cardiac Investigation	2	2	1	1	1	3	1	1	1	1	1	1
ENT	1	1	0	0	2	1	0	0	1	2	0	0
Ophthalmology	3	2	3	0	3	3	0	3	3	3	0	3
Endoscopy	0	0	0	0	0	5	0	0	0	0	0	0
Respiratory	0	0	0	0	0	1	0	0	0	0	0	0
Total	**22**	**29**	**17**	**11**	**47**	**40**	**15**	**14**	**22**	**32**	**31**	**18**

Source: Information provided by the Health Institutions.

It can be seen from **Table 3.34** that:

- In all DHs in the State, 11 to 47 pathological investigations were available against the requirement of 88 tests.
- In DH Shimla, Mandi, Kinnaur, Kangra and Lahaul & Spiti available tests were in the range of 11 to 18 whereas in DH Kullu, maximum number of tests were available (47).

Audit noticed that the pathology services in the selected HIs were provided through in-house laboratories.

In five[24] selected CHs, against the norms of 48 tests, 17 to 30 tests were available and in CH Chango only six tests were available. In five[25] selected CHCs, against the norms of 33 tests, 15 to 27 tests were available. In CHC Bachhwai, only two tests were available and in CHC Majheen, no tests were available.

In absence of these pathology tests, patients were forced to visit private labs or higher-level hospitals, where these tests were available, causing increase in out-of-pocket expenses.

In the exit conference (January 2023), the Secretary (Health) stated that Government is planning to increase pathology tests at every level.

3.1.7.6 Quality Assurance of Pathology services (Secondary level)

IPHS norms 2012 stipulated that external validation of laboratory reports was to be done on a regular basis in DHs/CHs/CHCs to ensure that the patients were given accurate reports.

[24] CH Kandaghat -25, CH Thural- 25, CH Jawalamukhi- 17, CH Shahpur- 26 and CH Baijnath- 30.
[25] CHC Pooh-26, CHC Sangla-22, CHC Syri-27, CHC Dharampur-27 and CHC Bir-15.

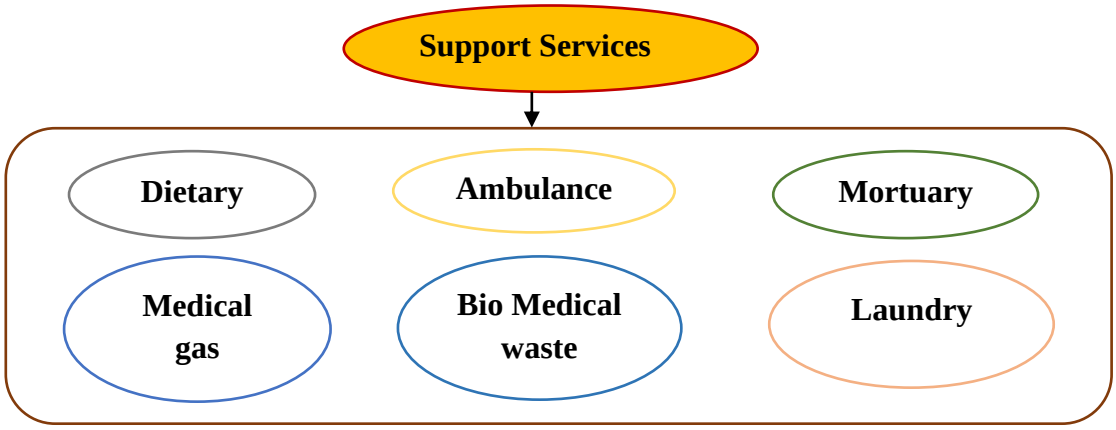
In the selected HIs of three districts, it was noticed that no quality assurance tests were conducted during 2016-21, except in DH Kangra (conducted during 2016-19), DH Kinnaur and CHC Pooh, which had started conducting the tests only from 2020-21.

Hence the quality of the pathological results of the HIs could not be assured.

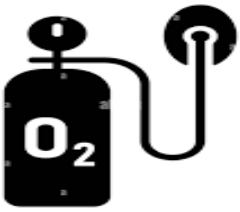
3.2 Availability of Healthcare services - Support services

Support services are the services which are not directly related to patient care but indirectly contribute for providing the levels of service that make a hospital run effectively.

Chart 3.7: Support services in Hospitals



3.2.1 Medical Gas (Oxygen)



Oxygen is an essential element of basic emergency care and is required for surgery and treatment of several respiratory diseases, both chronic and acute. It is used to care for patients at all levels of the healthcare system, including in surgery, trauma, heart failure, asthma, pneumonia and maternal and childcare.

The World Health Organisation (WHO) included oxygen in the WHO Model list of essential medicines (EML) due to its proven lifesaving properties, safety and cost-effectiveness.

3.2.1.1 Medical gas service (Tertiary level)

During joint physical inspection of medical gas services conducted by Audit, it was noticed that:

- Three Oxygen manifolds were installed at the RPGMC, Kangra, with capacity of 208 type-d cylinders. With these manifolds, there was also a liquid oxygen tank with 15,000 kilolitre capacity.
- In RPGMC Kangra, 866 number of beds were available (June 2022), out of which 624 beds (72 *per cent*) were having centralised oxygen connection.
- In addition to the above, the government had made provision to install a Pressurised Swing Adsorption (PSA) plant in RPGMC, Kangra, which was not in working condition as commented in **Para 3.4.6.2**.

- In IGMC, Shimla, PSA was not installed due to improper planning as commented in **Para 3.4.6.3**.

3.2.1.2 Medical gas services (Secondary level)

The IPHS norms 2012 also require that OT/ICU/SNCU, etc. should have medical gases in DHs/CHs. In case of CHC, two oxygen IP cylinder should be available.

Audit observed that:

- In all the DHs in the State, medical oxygen service was available as of March 2023.
- In none of the HIs in Kinnaur district, centralised oxygen supply system was installed/functional to ensure uninterrupted oxygen supply. Though in DH Kinnaur, centralised oxygen supply system was installed during 2021-22 (October 2021), the HIs viz. CH Chango, CHC Pooh and CHC Sangla including DH Kinnaur were managing the supply of medical oxygen through portable oxygen cylinders.
- In DH Solan, centralised oxygen supply system was installed during 2018-19. Buffer stock of oxygen cylinder was also available. However, centralised oxygen supply was not available in any of the selected CH and CHCs, and they were managing oxygen requirement through portable oxygen cylinders.
- In DH Kangra, centralised oxygen supply system was installed during 2020-21. Oxygen cylinders were checked on daily and weekly basis and also buffer stock of oxygen was available during 2016-21. However, in the selected four CHs and three CHCs, centralised oxygen supply was not available, and they were managing oxygen requirement through portable oxygen cylinder. In CHC Bachhwai, oxygen cylinders also were not available.

3.2.2 Dietary services

The dietary service of a hospital is an important therapeutic tool. The IPHS norms 2012 for DHs/CHs stipulate that apart from normal diet, the food supplied should be patient specific i.e. diabetic, semi solid and liquid and should be distributed in covered containers. The quality of diet should be checked by a competent person on a regular basis.

As per Kayakalp[26] guidelines, for maintenance of proper hygiene and infection-free environment in the kitchen, there is a minimum requirement of covered trolley for food distribution, separate room for storage, adequate supply of treated water and refrigerators for storage of food items. Further, NHM Assessor's Guidebook envisages that the health facility must have standard procedures for 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 preparation of meals as per the specific dietary requirements of patients and also for ensuring maintenance of hygiene during cooking.

[26] An initiative launched by Ministry of Health and Family Welfare (MoHFW) under Swachh Bharat Abhiyan to promote cleanliness and enhance the quality of healthcare facilities in India.

3.2.2.1 Dietary Services (Tertiary level)

During joint physical inspection of dietary services at RPGMC, Kangra and IGMC, Shimla against the checklist of NHM Assessor Guidebook 2013 (DH), it was noticed that:

- In both the selected MCHs, the dietary services were running on outsourced basis.
- In IGMC Shimla, no formal agreement was made between the hospital authorities and the contractor for outsourcing of dietary services.
- In IGMC Shimla, it was noticed that grains and food items were not stored properly and were kept on the floor as shown in **Picture 3.21**.
- The quality of food was never checked by food inspectors at both the MCHs.
- Protective gears like apron, headgear and gloves were not worn by cooking staff at RPGMC, Kangra as shown in **Picture 3.22**.
- No feedback system from patients for quality of diet was available in IGMC Shimla.
- In IGMC, Shimla, the sink in the kitchen was found to be broken and the drain connected to the sink was in choked condition as shown in **Picture 3.23**, creating a foul smell, and rendering the kitchen environment unhygienic.
- Stale food was kept in plastic bags along with the cleaned utensils as shown in **Picture 3.24**.

Picture 3.21: Cooking items were placed on the floor in IGMC, Shimla

Picture 3.22: Showing food being prepared without using gloves, apron and head cover at RPGMC, Kangra

Picture 3.23: Sink in kitchen was found in broken and choked state in IGMC Shimla

Picture 3.24: Left over food was found near the clean utensils in the kitchen of IGMC, Shimla.

3.2.2.2 Dietary services (Secondary Level)

In all the DHs in the State, dietary service was available through outsourcing as of March 2023.

Availability of dietary services in the selected HIs is shown in **Table 3.35**.

Table 3.35: Availability of dietary services in the selected HIs as on date of audit

District	Hospital	Dietary service available (Y/N)	Outsourced/ in-house
Kinnaur	DH Kinnaur	✓	Outsourced
	CH Chango	×	-
	CHC Pooh	×	-
	CHC Sangla	×	-
Solan	DH Solan	✓	Outsourced
	CH Kandaghat	×	-
	CHC Syri	×	-
	CHC Dharampur	×	-
Kangra	DH Kangra	✓	Outsourced
	CH Thural	✓	Outsourced
	CH Jawalamukhi	✓	Outsourced
	CH Shahpur	✓	Outsourced
	CH Baijnath	✓	Outsourced
	CHC Bachhwai	×	-
	CHC Majheen	×	-
	CHC Bir	×	-

Source: Information provided by the Health Institutions.

Audit observed that dietary services were available in all the selected DHs. In the selected CH, only CHs in Kangra district had dietary services, while the services were unavailable in the other selected CHCs. In all the selected HIs where dietary services were available, it was being run on outsourced basis.

During joint physical inspection of dietary services conducted by Audit in HIs where dietary service was available against the checklist of NHM Assessor Guidebook 2013 (DH, CH), it was noticed that:

- Food was being prepared and distributed without apron, head gear and clear plastic gloves in CH Baijnath and CH Thural as shown in **Picture 3.25** and **Picture 3.26**.
- Patient specific diet was provided in all HIs except DH Kinnaur and CH Shahpur.
- The Food Safety and Standards Authority of India (FSSAI) registration certificate issued under Food Safety and Standards Act, 2006 was not available in DH Kangra, CH Thural, CH Baijnath and CH Jawalamukhi.
- Separate storage room was available only in DH Kangra, DH Solan and CH Jawalamukhi.
- Food was not examined by Food Inspector or district authority in any of the selected HIs and the same was done by the ward sister of the concerned HIs.

	
Picture 3.25: Preparing food without apron in CH Baijnath	**Picture 3.26: Preparing food without apron in CH Thural**

In the exit conference (January 2023), the Secretary (Health) stated that food was being checked by the committee of the HIs and there is no system in the department for regular checking of the food quality by the food inspector. The reply is not acceptable as regular checking of food by the competent authority should have been ensured to maintain the food quality in the hospital.

3.2.3 Laundry Services

The provision of clean linen is a fundamental requirement for patient care. Incorrect procedure for handling or processing of linen can present an infection risk, both to staff and patients who subsequently use it. Hence, linen management is important to prevent hospital acquired infections and ensure a hygienic hospital environment. As per NHM Assessor guideline 2013 for DH, the patient's linen including bed sheets and patient gowns need to be changed on a daily basis. Hospitals need to ensure that they have enough stock of linen, readily available for all the areas of the hospital.

3.2.3.1 Laundry Services (Tertiary level)

During joint physical inspection of laundry services conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH), it was noticed that:

- In both the MCHs, Shimla and Kangra, linens were changed and sent for washing on alternate days.
- The washing area in both MCHs was very small compared to the linen load and trolley to carry the soiled linen was also not sufficient, as soiled linen was found spread on the ground as shown in **Pictures 3.27** and **Picture 3.28**.
- In both the MCHs, linens were washed using detergent and blood-stained linen were treated before washing in RPGMC Kangra only. However, the persons handling the linen were not using gloves and masks.
- In both the MCHs, provision for checking of Ph level was not available with the laundry supervisor and used water was directly drained out in the municipal drains shown in **Picture 3.29**.
- In RPGMC Kangra, clean linens were stored in open racks and not in closed cupboards.
- In both the MCHs, SOPs for handling, washing and disinfecting linen were not prepared and circulated.


Pictures 3.27 and 3.28: All types of linen put together for washing in IGMC and RPGMC

Picture 3.29: Untreated water after washing led to flow in open drain in IGMC, Shimla

3.2.3.2 Laundry service (Secondary level)

IPHS norms 2012 for DH prescribe different types of linen facilities that are required for patient care services in hospitals such as Abdominal sheets for OT, Bed sheets, Bedspreads, Blankets (Red and Blue), Doctor's overcoats, Draw sheets, Hospital workers' OT coats, Leggings, Mackintosh sheets, Mats (nylon), Mattresses (Foam) for adults, Mortuary sheets, Over-shoe pairs, Paediatric mattresses, Patient's coats (Female), Patient's Pyjamas, Shirts (Male), Towels, Perennial sheets for OT, Pillows, Pillows cover, Apron for cook, Curtains, Uniform/Apron and Table cloths.

IPHS norms 2012 prescribed 24 different types of linen that are required to be provided for patient care services in DHs/CHs while for CHCs, the number of different types of linen is not mentioned in IPHS norms 2012.

In all the DHs in the State, laundry service was available as of March 2023. Details of availability of linens in selected DHs, CHs and CHCs are shown in **Table 3.36**.

Table 3.36: Availability of linen in the selected DHs, CHs and CHCs

Hospital	Laundry service available	Types of linen available against 24 types specified
DH Kinnaur	Yes	15
CH Chango	No	5
CHC Pooh	No	6
CHC Sangla	Yes	4
DH Solan	Yes	15
CH Kandaghat	Yes	9
CHC Syri	Yes	7
CHC Dharampur	Yes	5
DH Kangra	Yes	19
CH Thural	Yes	7
CH Jawalamukhi	Yes	14
CH Shahpur	Yes	7
CH Baijnath	Yes	14
CHC Bachhwai	No	5
CHC Majheen	No	6
CHC Bir	No	1

Source: Information provided by the Health Institutions.

From **Table 3.36**, it can be seen that all the selected HIs except CH Chango and CHC Pooh, CHC Bachhwai, CHC Majheen and CHC Bir had laundry services, which were on outsourced basis. Linen ranging between one to 19 out of 24 types were available with the selected HIs. Thus, there was a shortage of linen in all the selected DHs/CHs.

During joint physical inspection of laundry services conducted by Audit against the checklist of NHM Assessor Guidebook 2013 for DH, CH and CHC, it was noticed that:

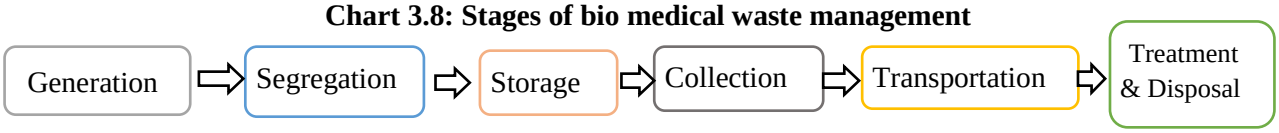
- Laundry register was maintained in all HIs with available laundry service except in CH Kandaghat and CH Jawalamukhi.
- Details of change of bed linen was not regularly entered in the laundry registers of DH Solan, CH Kandaghat, CH Thural, CH Jawalamukhi and CHC Sangla.
- Cleaned linen was kept in closed cupboards and hygienic condition in all HIs except in DH Kinnaur, CH Shahpur and CHC Dharampur.

3.2.4 Bio-medical Waste Management

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. Each HI is to manage/ handle all the BM waste generated in such a way so as to protect health and environment against any adverse effects due to handling of such waste.

The GoI framed Bio-Medical Waste (Management and Handling) Rules, 1998 under Environment (Protection) Act, 1986, which were superseded by Bio-Medical Waste Management Rules, 2016 (BMW Rules). The BMW Rules inter alia stipulate the procedures for collection, handling, transportation, disposal and monitoring of the BMW with clear roles for waste generators and Common Biomedical Waste Treatment Facility (CBMWTF).

Chart 3.8: Stages of bio medical waste management



The BMW Rules require hospitals to segregate different categories of BMW in separate-coloured bins at the source of generation. The waste is to be stored in appropriate colour coded bags at the point of generation and collected by the CBMWTF.

3.2.4.1 Bio-Medical waste (BMW) management (Tertiary level)

During joint physical inspection of BMW management conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH), it was noticed that:

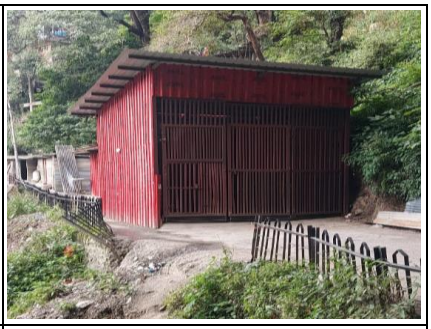
- Both the MCHs had engaged operators for collection and disposal of bio-medical waste from the hospital site. Audit observed that segregation of BMW was done at ward/department using colour-coded bins and dumped at a common collection centre. From the common collection centre, BMW was collected and transported to a common disposal plant for further disposal.
- In both MCHs, it was noticed that mixture of BMW was put in a single-color bag.
- HIs are required to establish a system to review and monitor the activities related to bio-medical waste management, either through an existing committee or by forming a new committee. The Committee shall meet once every six months and the record of the minutes of the meetings of this committee shall be submitted along with the annual

report. The Annual report was not uploaded on the websites of both the MCHs. No BMW management committee was formed to review and monitor the bio-medical waste management.

- In both the MCHs, a bar code system was being followed for bags containing bio-medical waste to be sent out of the premises.

Picture 3.30: BMW being segregated before sending it to common collection center at RPGMC, Kangra

Picture 3.31: Dustbin without lid in IGMC, Shimla



Picture 3.32: Common BM waste collection center at IGMC, Shimla.

3.2.4.2 Bio-medical Waste Management (Secondary level)

Various parameters of Bio-medical waste management were checked in DHs and the findings are shown in **Table 3.37**

Table 3.37: Treatment of BMW in selected HIs in all DHs in the State (as of March 2023)

Bio-Medical Waste Management													
Sl. No	**Parameters of biomedical waste management**	**Bilaspur**	**Chamba**	**Kangra**	**Kinnaur**	**Kullu**	**Hamirpur**	**Lahaul & Spiti***	**Shimla**	**Solan**	**Sirmaur**	**Una**	**Mandi**
1	Segregation of BMW at the point of generation in color coded bins	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	Collection of bio waste from the DHs by CBMWTF	✓	✓	✓	Disposal through deep burial	✓	✓	Disposal through deep burial	✓	✓	✓	✓	✓
3	Disposal of human anatomical waste and other solid biological waste.	✓	✓	✓	Disposal through deep burial	✓	✓	Disposal through deep burial	✓	✓	✓	✓	✓
4	Disposal of sharps and other hazardous waste	✓	✓	✓	Disposal through sharp pits	✓	✓	Disposal through sharp pits	✓	✓	✓	✓	✓
5	Disposal of liquid waste	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: Information provided by the Health Institutions.

Various parameters as prescribed in Schedule I of BMW Rules 2016, Bio-medical (BM) waste management were checked in the selected HIs and the finding are shown in **Tables 3.38, 3.39** and **3.40**:

Table 3.38: Treatment of BMW in selected HIs in district Kinnaur

Sl. No.	Parameters of biomedical waste management	DH Kinnaur	CH Chango	CHC Pooh	CHC Sangla
1.	Segregation of bio waste at the point of generation in colour coded bins	✓	✓	✓	✓
2.	Collection of bio waste from the DHs by CBMWTF	Disposal done by hospital themselves			
3.	Disposal of human anatomical waste and other solid biological waste.	Deep burial			
4.	Disposal of sharps and other hazardous waste	Deep pit			
5.	Disposal of liquid waste	Discharged in common sewage line of Irrigation & Public Health Department (IPH) after treatment			

Source: Information provided by the Health Institutions.

Table 3.39: Treatment of BMW in selected HIs in district Solan

Sl. No.	Parameters of biomedical waste management	DH Solan	CH Kandaghat	CHC Syri	CHC Dharampur
1.	Segregation of bio waste at the point of generation in colour coded bins	✓	✓	✓	✓
2.	Collection of bio medical waste by CBMWTF	By Operator	By Operator	By Hospital	By Operator
3.	Disposal of human anatomical waste and other solid biological waste.	By Operator	By Operator	Deep burial	By Operator
4.	Disposal of sharps and other hazardous waste	By Operator	By Operator	Deep burial	By Operator
5.	Disposal of liquid Waste	Drained into municipal drain after treatment			

Source: Information provided by the Health Institutions.

Table 3.40: Treatment of BMW in selected HIs in district Kangra

Sl. No.	Parameters of biomedical waste management	DH Kangra	CH Thural	CH Jawalamukhi	CH Shahpur	CH Baijnath	CHC Bachhwai	CHC Majheen	CHC Bir
1.	Segregation of bio waste at the point of generation in colour bins	✓	✓	✓	✓	✓	✓	✓	✓
2.	Collection of bio waste from the DHs by CBMWTF	Alternate days by operator	Thrice a week by operator	Alternate days by operator	Alternate days by operator	Thrice a week by operator	Thrice a week by operator	Thrice a week by operator	Thrice a week by operator
3.	Disposal of human anatomical waste and other solid biological waste	By operator	By operator	By operator	By operator	By operator	Deep burial	By operator	By operator
4.	Disposal of sharps and other hazardous waste	By operator	By operator	By operator	By operator	By operator	Deep pit	By operator	By operator
5.	Disposal of liquid waste	Discharged in common sewage line of IPH after treatment							

Source: Information provided by the Health Institutions.

Bio-medical Waste Rules mandate segregation of the waste at source and its pre-treatment or neutralisation prior to mixing with other effluents generated from healthcare facilities. Audit noticed that the segregation of BM waste was being done in different colour coded bins in all the selected DHs, CHs and CHCs.

Audit observed that in DH Solan, CH Kandaghat and CHC Dharampur that BMW storage room was in a bad state which may increase the chances of animal access, spreading bacteria/ viruses, polluting the environment etc. as shown in **Pictures 3.33** to **3.35**. Storage was done in temporary sheds.

		
Picture 3.33: Temporary arrangement for BMW in Kandaghat	**Picture 3.34: BMW storage in DH Solan**	**Picture 3.35: BMW storage in CHC Dharampur**

During joint physical inspection of BMW management conducted by Audit against the checklist of NHM Assessor Guidebook 2013 for DH, CH and CHC, it was noticed that:

- In none of the selected HIs, Effluent Treatment Plant (ETPs) were established for pre-treatment of the liquid chemical waste, resulting in drainage of the waste directly into the sewerage system. This was not only a violation of the BMW Rules but was also hazardous to public health.
- In all the selected HIs (DHs and CHs), protective gear/equipment were provided to health workers.
- In all the selected DHs, health check-ups were conducted every six months and immunisation of workers involved in BMW handling also ensured. In two[27] out of six selected CHs, health check-ups were conducted annually, and immunisation of workers involved in BMW was also ensured.

3.2.4.3 Non-installation of STPs

A Memorandum of Understanding was signed between Director, Health Services (DHS), Himachal Pradesh and two agencies[28] in March 2020 for design engineering, construction, supply, installation, testing, erection, commissioning and maintenance (five years after commissioning) of Sewage Treatment Plant (STP) of various capacities in the HIs of Himachal Pradesh. The stipulated period for completion of the project was 12 months (27/03/2021) from the project commencement date i.e. 27/03/2020.

Information regarding status of installation of STPs for the State is shown in **Table 3.41**.

[27] CH Shahpur and CH Baijnath.
[28] M/s Anushka Builders and Colonizer, Aliganj, Lucknow and M/s Bansal Construction company.

Table 3.41: Status of installation of STPs

(₹ in lakh)

District	No of STP to be installed	Payment released	No. of STP installed	Status of installation as of
Bilaspur	3	80.65	3	Plant installed; commissioning awaited as of November 2021.
Chamba	5	87.96	0	STP plant has reached at institute and installation is under process in CH Dalhousie, CH Chowari. Plant at CH Tissa, CH Killar and CHC Sahoo not supplied in the HI (November 2021).
Hamirpur	4	10.16	0	Only 5 *per cent* payment released (December 2021)
Kangra	17	469.66	17	Not commissioned (November 2021).
Kinnaur	5	43.50	0	Not installed, machine plant received (November 2021).
Kullu	4	24.50	3	Installed in three HIs but not yet commissioned (November 2021)
L&S	4	44.12	0	Under installation (November 2021)
Mandi	9	173.91	6	Installation done in six HIs and commissioning was pending and in three HIs namely CH Bagsaid, Kotli and Dharampur, site selection of STP was pending (November 2021)
Shimla	9	165.21	9	Not commissioned (November 2021)
Sirmaur	2	16.22	1	One at the stage of installation and one at the stage of commissioning (November 2021)
Solan	1	22.75	1	Installed but not commissioned (November 2021)
Una	6	70.85	4	Not supplied by the firm at CHC Basdehra and Santoshgarh and remaining four HIs installed but not functional as of November 2021
Total	**69**	**1209.49**	**44**	

Source: CMO records

Further, on test-check of records in the selected districts, it was noticed that none of the 23 proposed STPs (stipulated commissioning date of March 2021) were commissioned till the date of field visit by Audit (October 2021 to April 2022). Details of the STPs are given in **Table 3.42**.

Table 3.42: Details of STPs in the selected districts

Name of the District	Name of the firm	No of STPs to be installed	Date of agreement	Cost of the project (₹ lakh)	Scheduled date of completion	Status of installation as of	Remarks
Kinnaur	M/s Bansal Constructions company	5	17/03/2020	145.00	27/03/2021	October 2021	Not commissioned
Kangra		7	17/03/2020	239.00	27/03/2021	November 2021	
Kangra	M/s Anushka Builders and Coloniser	10	17/03/2020	600.78	27/03/2021	November 2021	
Solan		1	17/03/2020	35.00	27/03/2021	January 2022	
Total		**23**		**1019.78**			

Source: CMO records

It can be seen from **Table 3.42** that the firms failed to commission the STPs even after 19 to 22 months after the scheduled date of completion of the project. The firms have procured and transported the STP material at site, which was lying unutilised as shown in **Pictures 3.36** and **3.37** at CHC Sangla and CH Chango (October 2021).


Pictures 3.36 and 3.37: STP material lying unutilised in CHC Sangla and CH Chango

Pictures of incomplete STPs during joint physical verification conducted by Audit at Jawalamukhi (February 2022), Shahpur (March 2022), CH Thural (January 2022) are as below.

Picture 3.38: STP material in CH Thural, January 2022

Picture 3.39: STP material in CH Jawalamukhi, February 2022

Picture 3.40: STP material in CH, Shahpur, March 2022

Thus, 44 out of 69 STPs were installed as of November 2021 as indicated in **Table 3.41** but none of the STPs were commissioned resulting in non-functioning of the STPs and disposal of sewerage without treatment.

3.2.4.4 Training for management of Bio-Medical Waste

As per the BMW Rules, it is the responsibility of the healthcare facilities to ensure that all the staff handling BMW are provided regular training on BMW handling. Training provided in the selected districts is shown in **Tables 3.43, 3.44** and **3.45**.

Table 3.43: Details of training provided to by hospitals in district Kinnaur (Number of people)

Year	DH Kinnaur	CH Chango	CHC Pooh	CHC Sangla
2016-17	60	No training imparted	17	No training imparted
2017-18	40	No training imparted	10	No training imparted
2018-19	28	No training imparted	9	11
2019-20	66	No training imparted	8	No training imparted
2020-21	25	1	9	No training imparted

Source: Information provided by the Health Institutions.

Table 3.44: Details of training provided by hospitals in district Solan (Number of people)

Year	DH Solan	CH Kandaghat	CHC Syri	CHC Dharampur
2016-17	Records not available	0	1	0
2017-18	Records not available	0	3	5
2018-19	Records not available	0	6	5
2019-20	Records not available	0	6	6
2020-21	1	0	38	23

Source: Information provided by the Health Institutions.

Table 3.45: Details of training provided by hospitals in district Kangra (Number of people)

Year	DH Kangra	CH Thural	CH Jawalamukhi	CH Shahpur	CH Baijnath	CHCs Majheen	CHC Bachhwai	CHC Bir
2016-17	21	No training imparted		928	No training imparted			
2017-18	78			338				
2018-19	50			1020	2	No training imparted		
2019-20	48			127	No training imparted	10	No training imparted	
2020-21	No training imparted			240	No Training imparted			

Source: Information provided by the Health Institutions.

Audit observed the following in the selected districts:

- In DH Kinnaur, regular training on BMW handling was provided to the staff. In CH Chango, no training was provided during 2016-20 and in case of CHCs, training was provided in CHC Pooh (2016-20), while in CHC Sangla, training was provided only in 2018-19. At the level of PHCs, training was provided in eight[29] out of the 17 selected PHCs.
- In DH Solan, records were not available for 2016-20. In CHC Dharampur and CHC Syri, training was provided regularly. In CH Kandaghat, training was not provided.
- In Kangra district, in DH Kangra and CH Shahpur, regular trainings were provided to staff who were handling BMW.

Thus, due to lack of training, health hazards for the staff handling the BMW in the test-checked hospitals and improper disposal of the BMW could not be ruled out.

3.2.5 Ambulance services

IPHS norms 2012 specify the number of ambulances required for each hospital according to the number of beds. Further, IPHS norms 2012, envisage that the ambulances should be provided with basic life support/ advanced life support equipment and communication system. There shall be a dedicated parking space separately for ambulances near emergency. Serviceability and availability of equipment and drugs in ambulance are required to be checked on a daily basis.

3.2.5.1 Availability of Ambulance 108 in the State

Due to geographical conditions and tough terrain, Himachal Pradesh has one of the highest accident rates in the country. Many lives are lost, and people suffer disabilities due to lack of timely medical care including those for pregnant women, infants and persons in acute emergencies like stroke, heart attack, poisoning, burn and snake bites.

In view of the above, the State started an Emergency Response System through Public Private Partnership (PPP) mode in 2010. Presently these services are running through tender

[29] Chamia, Ribba, Spillow, Rakchham, Bandian Khopa, Seon, Charri and Ghallaur

process. The ambulances provide free transportation to persons requiring immediate medical care and all pregnant women and sick children. This service can be availed through a Toll-Free Number 108 and is available round the clock and free of cost to all people. A total of 248 ambulances (35 Advance Life Support[30] (ALS) and 213 Basic Life Support[31] (BLS)) are now on road as of March 2023. Out of these, 35 ambulances are dedicated for providing IFT (inter facility transfer), which exclusively cater to referred patients from one hospital to another and are placed at strategically located hospitals. In order to enhance the response time in the urban areas of Himachal Pradesh, six Bike Ambulances[32] as first responder have been initiated by the State. Two Bike Ambulances were started in Shimla town during April 2018 and four more Bike Ambulances, two each for Mandi and Dharamshala, have been flagged off during October 2020. The average response time in urban areas was in the range of 10.49 to 15.50 minutes and in rural areas it was in the range of 30.35 to 38.23 minutes during 2016-23. Audit could not ascertain whether this was within the response time prescribed as per the MoU[33], because in the MoU, the response time has been prescribed region-wise, rural and urban area-wise (low, middle and upper hills), whereas the data provided by the department is rural and urban area-wise for the whole state.

3.2.5.2 Janani Shishu Suraksha Karyakaram (102) Ambulance services in the State

The State has launched JSSK Drop back[34] (102) ambulance service with a total fleet of 125 vehicles. Under this scheme, 125 ambulances would provide facility to pregnant women after delivery and for sick children up to the age of one year. As per the data available in the National Health Mission website of Himachal Pradesh, as of December 2021, 3.01 lakh beneficiaries had availed the ambulance service in the State.

3.2.5.3 Ambulance service (Secondary level)

IPHS norms 2012 prescribe that every DH should have three ambulances if the bed strength is more than 100. In all the DHs in the State, ambulance service was available as of March 2023. In case of CH, for 31-50 beds one ambulance is prescribed. In the case of CHCs, round the clock ambulance service with basic life support should be available. It is also desirable to have an ambulance in PHCs to provide emergency services.

Requirement and availability of ambulances as per IPHS norms 2012, in the selected districts is shown in **Table 3.46**.

Table 3.46: Requirement and availability of ambulances as on date of audit

District	Type of facility	Requirement as per IPHS norms	Available
Kinnaur	DH Kinnaur	3	6
	CH Chango	1	1
	CHC Pooh	1	1

[30] The advanced life support ambulance is equipped with cardiac life support, cardiac monitors as well as a glucose-testing device. The ALS ambulance also carries medications onboard.

[31] Basic life support ambulance is for patients who have lower extremity fractures, patients transferred to sub-acute care facilities or who are discharged to home care, psychiatric patients, and other non-emergency medical transportation.

[32] To allow first responders to reach the spot of the emergency as quickly as possible.

[33] MoU with GVK EMRI – November 2016 – January 2022, MoU with MEDSWAN FOUNDATION – February 2022 onwards

[34] Free drop back from Institutions to home.

District	Type of facility	Requirement as per IPHS norms	Available
	CHC Sangla	1	1
Solan	DH Solan	3	3
	CH Kandaghat	1	2
	CHC Syri	1	1
	CHC Dharampur	1	2
Kangra	DH Kangra	3	2
	CH Thural	2	0
	CH Jawalamukhi	2	0
	CH Shahpur	2	1
	CH Baijnath	2	2
	CHC Majheen	1	0
	CHC Bir	1	0
	CHC Bachhwai	1	0

Source: IPHS norms and Information provided by the HIs

From **Table 3.46** it can be seen that there were adequate ambulances in the selected HIs except CH Thural, CH Jawalamukhi, CHC Majheen, CHC Bachhwai and CHC Bir where no ambulances were available, and patients had to arrange vehicles by themselves in case of emergency.

During joint physical inspection of ambulance service conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH, CH and CHC), it was noticed that:

- All the ambulances available in the selected HIs were running with Basic Life Support (BLS), however, none were equipped with Advance Life Support (ALS).
- None of the ambulances were equipped with essential equipment[35] except DH Kangra. Essential drugs were only available in ambulances of DH Kangra and CH Baijnath.
- All the ambulances except 108 were running without technician.
- Oxygen cylinders were available in all the ambulances except in CH Shahpur and CH Kandaghat.
- Serviceability and availability of equipment and drugs were not checked on daily basis.
- In CHC Pooh, there was one BLS ambulance which was not in running condition since August 2014. In CHC Sangla, permanent driver was not available and in case of emergency, a driver attached with the BMO was sent for ambulance duty.

In the exit conference (January 2023), the Secretary (Health) stated that almost all the ambulances had been replaced with the 108 ambulances service in which technicians were available.

The reply was not acceptable as departmental ambulances available in the selected HIs were running without technician.

3.2.6 Mortuary Services

Mortuary Services provides facilities for keeping dead bodies and conducting autopsy. The mortuary shall be located in a separate building near the pathology on the ground floor, easily accessible from the wards,

[35] Suction Pump, Laryngoscope, Bag and Mask Ventilation Device, BP Instrument Aneroid, Cervical Collar, Portable hand-held Glucometer, First Aid Box etc.

accident and emergency department and operation theatre. It shall be located away from general traffic routes used by public. Post-mortem room shall have stainless steel autopsy table with sink, a sink with running water for specimen washing and cleaning and cupboard for keeping instruments.

Proper illumination and air conditioning shall be provided in the postmortem room. A separate room for body storage shall be provided with at least two deep freezers for preserving the body. There shall be a waiting area for relatives and a space for religious rites.

3.2.6.1 Mortuary Services (Tertiary level)

The following was observed in the MCHs:

- Mortuary rooms were available 24X7 in both the MCHs.
- Three deep freezers with total 10 compartments were available in RPGMC, Kangra. In IGMC, Shimla one deep freezer with six compartments was available.
- In IGMC, no Standard Operating Procedure (SOP) was adopted to clean the mortuary room as they were cleaned by the same method as other hospital rooms were cleaned.
- In both MCHs, post-mortem services were available in the hospital and were connected with the mortuary room.
- Mortuary van was available only in RPGMC Kangra.

3.2.6.2 Mortuary Services (Secondary level)

In all the DHs in the State, mortuary service was available as of March 2023.

During joint physical inspection of mortuary services in the selected districts conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH), it was noticed that:

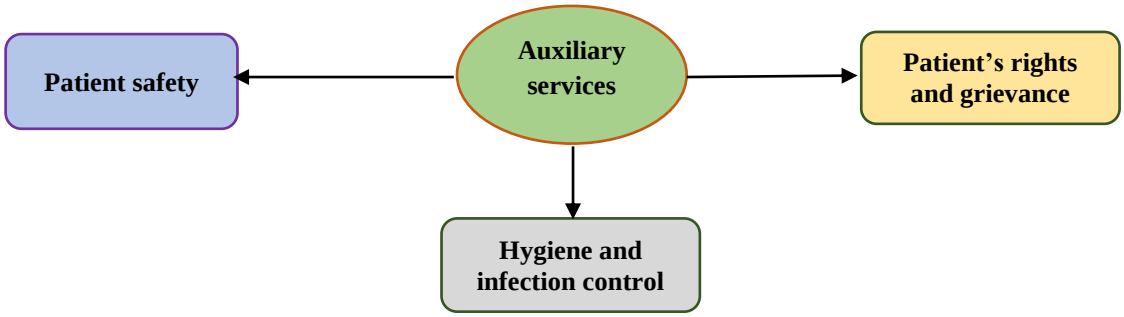
- Mortuary services were available only in selected DHs and not in the selected CHs and CHCs.
- In all selected DHs, mortuary services were available 24x7 and appropriately located (with functional linkage with hospital emergency, OT, IPD etc.) as provided in Assessor Guidebook 2013.
- Mortuary facility had proper illumination and air conditioning in post-mortem rooms in all the selected DHs except DH Kangra where air conditioning was not available.
- In DH Kangra, post-mortem rooms had stainless steel autopsy table with sink, a sink with running water for specimen washing and cleaning and cupboard for keeping instruments and in DH Solan, Marble table with sink was available. Whereas in DH Kinnaur table was not available.
- Separate room for body storage was provided with deep freezers for preserving the body and a system to categorise the dead bodies before preservation was available. Also, in the mortuary, there was provision for storage of unclaimed bodies for fixed period in all the selected DHs.
- Mortuary van was available in DH Kinnaur but not in DH Solan and Kangra.

- Facility of pathological post-mortem was not available in any of the DHs.
- Adequate firefighting equipment was available in the selected DHs except in DH Kinnaur.
- All bodies sent to the mortuary were accompanied with copy of death certificate issued by hospital in the selected DHs.
- Dedicated room for staff was available in the selected DHs except in DH Kinnaur.

3.3 Availability of Healthcare Services - Auxiliary services

Auxiliary services in a hospital are of utmost importance since they are required to ensure a comfortable and nurturing environment for all, thereby contributing their part for the effective care and treatment of patients. The hospital auxiliary services include patients' safety, patients' rights and grievance redressal and hygiene and infection control as shown in **Chart 3.9**.

Chart 3.9: Auxiliary services



3.3.1 Patient Safety

As per Department of Health & Family Welfare, Himachal Pradesh, the main purpose of the disaster management plan is to mainstream disaster prevention, mitigation, preparedness and response activities into the health sector, with specific focus on hospitals; such that hospitals are not just better prepared but fully functional immediately after disasters and are able to respond without any delay to the medical requirements of the affected community.

3.3.1.1 Fire Safety (Tertiary level)

National Building Code of India 2016, Part-4 - Fire and Life safety require 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.

- In IGMC, Shimla, Audit noticed that the last inspection was carried out by Station Fire Officer, Fire station, Shimla, during December 2021. The fire department recommended for compliance with their report, but no action in this regard was taken by the MCH management.
- In both MCHs, fire-fighting equipment like smoke detector, fire alarm, fire extinguishers and fire hydrants were available. However, NOC from the Fire Department was not obtained.

3.3.1.2 Fire Safety (Secondary level)

Minimum requirements for a reasonable degree of safety from fire emergencies in hospitals must be met such that the probability of injury and loss of life from the effects of fire are reduced. In this regard, measures shall be taken to limit the development and spread of fire by providing appropriate arrangements within the hospital through adequate staffing and careful development of operative and maintenance procedures consisting of design and construction, provision of detection, alarm and fire extinguishers, fire prevention, planning and training programmes for isolation of fire and transfer of occupants to a place of comparative safety or evacuation of the occupants to achieve ultimate safety.

Audit observed that none of the selected HIs had obtained NOC from the Fire Department.

The details of availability of fire extinguishers and other items in the selected HIs during 2016-21 are shown in **Tables 3.47** to **3.49**.

Table 3.47: Details of availability of fire equipment in district Kinnaur

Equipment	DH Kinnaur	CH Chango	CHC Pooh	CHC Sangla
Smoke detector	×	×	×	×
Fire alarm	×	×	×	×
Fire extinguisher	✓(65)	×	✓ (2)	✓ (6)
Fire hydrant	✓ (3)	×	×	×
Sand bucket	×	×	×	×
Underground backup water	×	×	×	×
Signage for fire exit	✓	×	✓	×
Emergency door	×	×	×	✓

Source: Information provided by the Health Institutions.

Table 3.48: Details of availability of fire equipment in district Solan

Equipment	DH Solan	CH Kandaghat	CHC Syri	CHC Dharampur
Smoke detector	×	×	×	×
Fire alarm	×	×	×	×
Fire extinguisher	✓(44)	✓ (10)	✓ (28)	✓ (5)
Fire hydrant	×	×	×	×
Sand bucket	✓	×	×	×
Underground backup water	×	×	✓	×
Signage for fire exit	✓	×	×	✓
Emergency door	✓	×	✓	×

Source: Information provided by the Health Institutions.

Table 3.49: Details of availability of fire equipment in district Kangra

Equipment	DH Kangra	CH Thural	CH Jawalamukhi	CH Shahpur	CH Baijnath	CHCs Bachhwai	CHC Majheen	CHC Bir
Smoke detector	×	×	×	×	×	×	×	×
Fire alarm	✓(1)	×	×	×	×	×	×	×
Fire extinguisher	✓(36)	✓ (17)	✓ (11)	✓ (6)	✓(34)	✓(4)	✓(5)	✓(2)
Fire hydrant	×	×	×	×	×	×	×	×
Sand bucket	×	×	×	×	×	×	×	✓
Underground backup water	×	×	×	✓	×	×	×	×
Signage for fire exit	✓	×	×	×	✓	×	×	✓
Emergency door	✓	×	×	×	✓	×	×	×

Source: Information provided by the Health Institutions.

As can be seen from **Tables 3.47** to **3.49**, smoke detectors and fire alarms were not available in any of the selected HIs except in DH Kangra, where one fire alarm was available. Fire extinguishers were available in all selected HIs except CH Chango. Although fire extinguishers were available, training was not imparted to staff to operate the fire extinguishers.

As per the hospital safety guidelines for firefighting, the underground static water tank should remain full at all times to meet any contingency. However, in the selected HIs, the underground static water tank was not constructed for meeting the fire contingency except in CHC Syri and CH Shahpur.

Emergency doors for early exit from the building were available only in DH Kangra, DH Solan, CH Baijnath, CHC Syri and CHC Bir. Fire hydrants intended to provide water to the firemen were not installed in any of the selected HIs, except in DH Kinnaur.

3.3.1.3 Periodic fire safety audit (Secondary level)

Himachal Pradesh Fire Fighting Service Act, 1984 prescribes standards in respect of safety from fire in buildings.

- Sr. Medical Superintendent DH Kangra requested (December 2020) the Fire Officer, Dharamshala for inspection of the DH for the purpose of fire safety. The Fire Officer (January 2021) Dharamshala recommended that installation of fire equipment may be done in the hospital. Audit scrutiny revealed that the matter was taken up with the DHS (January 2021) and it was intimated that NOC from the Fire Department had not been obtained due to deficiency in the fire safety norms. The deficiencies pointed out by the Fire Department were not complied with, in the absence of which NOC was not granted by the Fire Department. The fire safety audit was not conducted during the period 2016-21. Therefore, safety of the patients/attendants/visitors and the hospital staff was not ensured.

- In DH Solan, fire audit was carried out by Directorate of Fire Services during January 2016, and the Fire Department suggested for installation of fire safety equipment but due to non-provision of funds, fire safety equipment was not installed in the hospital (January 2022). No fire audit was conducted during 2016-21 thereby compromising the safety of the patients/attendants/visitors and the hospital staff.

- In DH Kinnaur, no fire audit was carried out by the Fire Department during 2016-21.

3.3.1.4 Patient safety measures (Secondary level)

As per the IPHS norms 2012, DHs/CHs shall have a dedicated Hospital Management Policy and should emphasise on hospital buildings with earthquake proof and fire protection features. Infrastructure should be eco-friendly and disabled (physically and visually handicapped) friendly. Local agency guidelines and bylaws should be strictly followed. In case of CHC, building structure and the internal structure should be made disaster-proof especially earthquake proof, flood proof and equipped with fire protection measures.

Audit noticed that none of the selected HI buildings were constructed after taking earthquake safety into consideration.

As per the State Disaster Management action plan for the State of Himachal Pradesh, the State plan should streamline with the overall health policy and health plan to address the preventive, mitigation and response plan in event of a disaster.

During audit and joint physical inspection of the selected HIs, it was noticed that seven[36] out of 16 selected HIs had neither prepared plans nor standard operating procedures (SOP) to manage disasters in order to avoid casualty incidents during 2016-21. The hospitals, therefore, failed to prepare themselves in advance for expected and unexpected threats, to minimise the risk.

3.3.2 Patient rights and grievance redressal

Citizen Charter shall be displayed at the OPD and at the entrance in local language including patient rights and responsibilities. It indicates the standards of quality and minimum assured services provided by the hospital. Further, for effective redressal of grievances of patients, there shall be provision of complaints/suggestion box in the hospital and a grievance redressal committee for monitoring the grievances, to settle genuine complaints in a time bound manner.

As per IPHS norms 2012, Citizen Charter should be displayed at a proper place in the hospitals so that the patients are aware of their rights, the services available, user fees charged, if any, and a grievance redressal system to redress the complaints of the occupants of the hospital. The availability of Citizen Charter in the selected hospitals is shown in **Table 3.50**.

Table 3.50: Availability of citizen charter in selected hospital as on date of audit

District	Hospitals	Availability of Citizen Charter	Available in local language
Kinnaur	DH Kinnaur	✓	×
	CH Chango	×	×
	CHC Pooh	✓	✓
	CHC Sangla	✓	✓
Kangra	DH Kangra	✓	✓
	CH Thural	✓	×
	CH Jawalamukhi	×	×
	CH Shahpur	×	×
	CH Baijnath	✓	✓
	CHC Bachhwai	✓	×
	CHC Majheen	✓	✓
	CHC Bir	✓	✓
Solan	DH Solan	✓	×
	CH Kandaghat	×	×
	CHC Syri	✓	✓
	CHC Dharampur	×	×

Source: Information provided by the Health Institutions.

[36] CH Chango, Kandaghat, Thural, Jawalamukhi, CHC Dharampur, Syri and Bachhwai

It can be seen from **Table 3.50** that Citizen Charters were available in 11 out of 16 selected HIs.

During joint physical inspection conducted by Audit, it was noticed that:

- Citizen Charters were available in 11 out of 16 selected HIs and out of these Citizen Charters was in local language in seven selected HIs.
- Complaint boxes or complaint registers were maintained in six[37] out of the 16 selected HIs.
- Timings/ working hours of OPD and other services were displayed in 13 out of the 16 selected HIs except in CH Jawalamukhi, CHC Syri and CHC Bachhwai.
- Patient's grievance redressal committees were not constituted in 13 out of the 16 selected HIs (except CH Shahpur, CHC Pooh and CHC Syri).

Absence of Citizen Charters in local language deprived the patients from obtaining information related to patient's rights and responsibilities. Non-availability of complaint box and patient grievance redressal committee indicated a casual attitude towards patient's issues.

3.3.3 Hygiene & Infection control

As per Indian Council of Medical Research (ICMR) Infection Control Guidelines, the emergence of life-threatening infections such as severe acute respiratory syndrome and re-emerging infectious diseases have highlighted the need for efficient infection control programmes in all healthcare settings.

3.3.3.1 Hygiene and Infection control in Tertiary level hospitals

Hygiene and Infection Control Committee (HICC) was established in IGMC, Shimla and the present committee was constituted in May 2020, and it does not have any fixed tenure. In RPGMC, Kangra, Microbiology Laboratory collects surface and environment samples on a periodical basis from all over the hospital for infection control.

During joint physical inspection of hygiene and infection control conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH), it was noticed that:

- In IGMC Shimla, for creating awareness about infection control measures, posters in the wards of hospital were not fully displayed and were found only at a few places.
- In IGMC Shimla, regular rounds of inspection in the hospital were made by the HICC and teaching sessions to sensitise different categories of the staff were also held at regular intervals. During joint physical verification of toilets and hand washing areas, it was observed that no liquid soaps were kept.
- In IGMC Shimla, drinking water was not available in all wards and was available in a few IPD wards.

[37] DH Kangra, CH Shahpur, CHC Pooh, CHC Sangla, CHC Majheen and CHC Bir.

- In IGMC Shimla, no surface and environment samples of laboratories were taken as required by Assessor Guidebook for Quality Assurance in DHs. During physical inspection of Skin OPD, Medicine OPD, Surgery OPD, Eye OPD and Emergency ward, it was noticed that the quality of the air was not satisfactory, and rooms lacked proper ventilation. The windows were not fitted with grills and could not be opened due to the menace of monkeys, thereby obstructing cross-ventilation. Few of the air samples of different years were checked and it was noticed that the air quality on 16/06/2022 of emergency OT room No.2 (surgery) and main OT No.5 (ENT) were found to be unsatisfactory. The bacterial count on 03/01/2019 in Respiratory Intensive Care Unit (RICU) was 524. Generally bacterial count less than 180 CFU/m3 is acceptable and satisfactory.
- In IGMC Shimla, untreated hospital waste was released into the common municipal sewers as shown in **Pictures 3.41** and **3.42**.


Pictures 3.41 and 3.42: Untreated wastewater let in public drain in IGMC

- During physical verification, it was observed that hospital waste that was kept in hospital premises was not collected by the Shimla Municipal Corporation as shown in **Pictures 3.43** and **3.44**.


Picture 3.43 and 3.44: Dumped materials / waste found inside the IGMC hospital campus not collected by SMC.

- During scrutiny of records, it was noticed that proposal for the construction of effluent treatment plants at various buildings at IGMC was made during December 2021 but the administrative approval and expenditure sanction had not been accorded by the competent authority (June 2022).

The authorities stated that air samples were taken in both MCHs for quality testing by microbiology department on a periodic basis.

3.3.3.2 Hygiene & Infection control in HIs (Secondary Level)

Guidelines issued by National Centre for Disease Control, Ministry of Health and Family Welfare, GoI, stipulate that Hospital Infection Control Policies are needed to be framed, practiced and monitored by Hospital Infection Control Team (HICT) and Hospital Infection Control Committee (HICC) in each hospital.

Audit noticed that in 12 out of 16[38] selected HIs, HICCs were formed. First prize of Kayakalp award was received by DH Kinnaur during 2016-17 and 2020-21 for cleanliness in the hospital. Similarly, during 2019-20, DH Kangra was awarded with Kayakalp award of ₹ 25.00 lakh. During the year 2021-22, DH Kangra was awarded quality certification under National Quality Assurance Standard (NQAS) & Labour room Quality initiative (LaQshya) programme, which is the only hospital to get such an award in the State.

HICC is to monitor the hygiene standards periodically and various methods are to be adopted to minimise air-borne infections. Regular air samples are to be taken and its microbiological surveillance reports are to be analysed.

During joint physical inspection of hygiene and infection control conducted by Audit against the checklist of NHM Assessor Guidebook 2013 (DH, CH and CHC), it was noticed that:

- Air samples were not taken in any of the selected HIs except DH Solan. In absence of this, the quality of air in the selected HIs could not be ensured.
- Biological testing of water was only conducted in DH Kangra, DH Solan and CH Chango. In the remaining CHs, CHCs and PHCs, biological testing of water was not conducted.
- Water tanks were not cleaned in two[39] CHs and CHC Syri.
- SOP for infection control was available in 13 out of 16 HIs except CH Chango, CH Kandaghat and CH Jawalamukhi.
- Rodent control was done in all DHs and three CHCs (Sangla, Dharampur and Bir). Pest control was conducted in all the selected DHs, CH Shahpur and CHC Bir.

3.4 Emergency Management

Coronavirus disease 2019 (COVID-19) is a contagious disease caused by a virus, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The COVID-19 virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols. Most common symptoms include fever, cough, tiredness and loss of taste or smell. In Himachal Pradesh, the first case of COVID-19 was recorded on 21 March 2020.

3.4.1 Funding for Covid-19 in the State

The Government of India provided funds under Emergency COVID Response Package (ECRP) to the State to support preparedness and prevention related activities due to the

[38] All except CH Kandaghat, CH Jawalamukhi, CHC Majheen and Bachhwai.
[39] CH Thural and CH Jawalamukhi.

COVID-19 outbreak. ECRP was intended to build resilient health systems to support preparedness and prevention related functions that would address not only the current COVID-19 outbreak but also such outbreaks in future.

3.4.2 Emergency Covid Response Package – I (ECRP-I)

The State Government prepared the ECRP of ₹ 18.81 crore for 2019-20, ₹ 52.77 crore for 2020-21 and ₹ 43.16 crore for 2021-22. During 2020-21 and 2021-22, ₹ 59.41 crore and ₹ 43.16 crore respectively was spent by the NHM under COVID-19. The amount was spent for diagnostics (including Sample Transport), Drugs and Supplies, HR etc. Details of expenditure is shown in **Table 3.51**.

Table 3.51: Details of expenditure during 2020-22 under ECRP-I

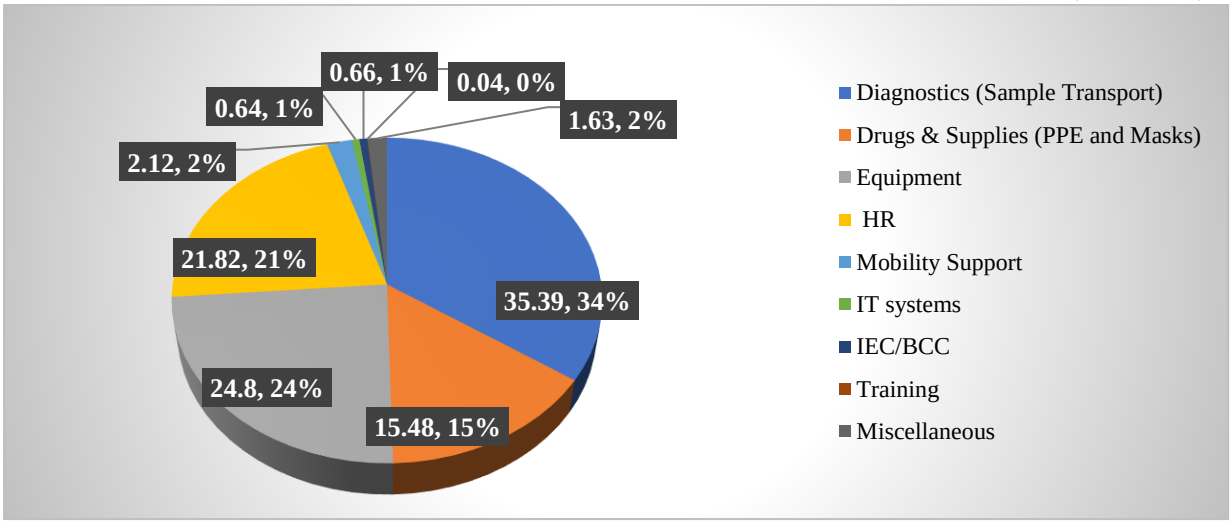
(₹ in crore)

Sl. No.	Type of expenditure	Expenditure incurred in 2020-21	Expenditure incurred in 2021-22	Total
1.	Diagnostics including Sample Transport	18.18	17.21	35.39
2.	Drugs and Supplies including PPE and Masks	11.88	3.60	15.48
3.	Equipment\facilities for patient care including support for ventilators etc.	10.77	14.03	24.8
4.	HR	14.06	7.76	21.82
5.	Mobility Support	1.83	0.29	2.12
6.	IT systems including Hardware and Software etc.	0.64	0	0.64
7.	IEC/BCC	0.64	0.02	0.66
8.	Training	0.04	0	0.04
9.	Miscellaneous (which could not be accounted for above items of expenditure)	1.38	0.25	1.63
Total		**59.42**	**43.16**	**102.58**

Source: Departmental information

Chart 3.10: Details of expenditure under ECRP-I during 2020-22

(₹ in crore)



3.4.3 Emergency Covid Response Package -II (ECRP-II)

- ECRP-II was approved by the GOI for ₹ 240.56 crore (₹ 216.51 crore GOI share and ₹ 24.06 crore State share) in August 2021 for 2021-22.

- ₹ 13.10 crore was released to the DHS in September 2021, which was for purchase of essential drugs (₹ 1.95 crore), establishment of 100 bedded field hospital at Indora, Kangra district (₹ 3.75 crore) and establishment of Liquid Medical Oxygen Plant (₹ 7.40 crore) in seven DHs[40] and three CHs[41].
- ₹ 22.95 crore was released to DMER in September 2021, which was for essential drugs in medical colleges (MCs) (₹ 10.05 crore), establishment of 100 bedded field hospitals at Hamirpur and Nahan (₹ 7.50 crore) and establishment of liquid medical oxygen plant at six MCs[42] (₹ 5.40 crore).
- In DMER, it was noticed that funds of ₹ 63.90 crore were received (October 2021) from NHM during the period 2019-22 on account of COVID-19, out of which only ₹ 60.21 crore were transferred to the MCs and the remaining funds of ₹ 3.69 crore were not distributed to MCs. It was further observed that even where COVID-19 funds were transferred to the MCs, there were delays ranging between five to 149 days.
- In IGMC, Shimla, it was noticed that fund of ₹ 25.11 crore[43] was provided for diagnostics, purchase of drugs, equipment, PPE kits and masks etc. through DMER during 2021-23, out of which only ₹ 19.74 crore was utilised and ₹ 5.37 crore remained unutilised as of December 2022.
- In RPGMC Kangra, fund of ₹ 32.69 crore[44] was received for diagnostics, purchase of drugs, equipment, PPE kits and masks etc. during May 2020-June 2022, out of which ₹ 23.79 crore was utilised and ₹ 5.52 crore was returned to DMER, Shimla, while ₹ 3.37 crore was lying unutilised (June 2022).
- In RPGMC Kangra hospital, it was noticed that during 2019-22[45], funds of ₹ 2.33 crore were received for diagnostics, purchase of drugs, equipment, PPE kits and masks etc. against which expenditure of ₹ 8.94 crore was incurred. The excess amount of ₹ 6.61 crore was incurred out of available RKS fund. Against the excess expenditure incurred, ₹ 2.30 crore was received in June 2022 and the balance amount of ₹ 4.31 crore was still pending for recoupment as of July 2022.
- In DHS, Shimla, it was noticed that fund of ₹ 6.59 crore was released to CPWD Shimla for installation of medical oxygen pipeline system in seven district hospitals during June and July 2020. The work was completed in September 2020 after incurring expenditure of ₹ 5.82 crore and the balance fund of ₹ 0.77 crore was still lying unutilised with CPWD Shimla. The balance amount was not returned by CPWD as of January 2023. On this being pointed out, the Department stated that CPWD has been requested to return the amount with interest.

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40 Una, Kullu, Kangra, Bilaspur, Solan, Kinnaur and Lahaul & Spiti.
41 Palampur, Rampur and Sarkaghat.
42 IGMC Shimla, AIMSS Chamiana, YSPGMC Nahan, RKGMC Hamirpur, SLBSGMC Nerchowk Mandi, JLNGMC Chamba.
43 ECRP I: ₹ 12.08 crore, ECRP-II: ₹ 13.03 crore, 2022-23 ₹ 2.59 crore.
44 ECRP I- ₹ 16.98 crore, ECRP II - ₹ 15.71 crore.
45 2019-20 ₹ 0.80 crore, 2020-21 ₹ 1.28 crore 2021-22 ₹ 0.25 crore.

3.4.4 State Disaster Response Fund

Himachal Pradesh State Disaster Management Authority notified rules for "HP SDMA COVID-19 State Disaster Response Fund" in April 2020. Objectives of the HP SDMA COVID-19 State Disaster Response Fund was to provide financial and other assistance/ immediate relief to persons who were adversely affected by the COVID-19 epidemic, upgradation of healthcare/ pharmaceutical facilities/ procuring equipment etc.

Details of funds provided to the DHS and DMER under SDRF is shown in **Table 3.52**.

Table 3.52: Details of allocation and expenditure under SDRF & State during 2019-22

(₹ in crore)

Year	Opening Balance	Allocation	Total Available Funds	Expenditure	Unutilised
2019-20	--	15.00	15.00	0.01	14.99
2020-21	14.99	17.44	32.43	32.18	0.25
2021-22	0.25	69.37	69.62	68.17	1.45
Total		**101.81**		**100.36**	

Source: Departmental information

It can be seen from **Table 3.52** that during 2019-22, ₹ 101.81 crore was allocated to DHS and DMER for purchase of PPE kits, safety equipment, construction of makeshift hospital and salary/wages of outsourced staff employed, out of which ₹ 100.36 crore was shown as spent on COVID-19.

3.4.5 Status of Pressurised Swing Adsorption (PSA), Ventilators, Oxygen Concentrators

GoI sanctioned PSA plant for six Medical Colleges, one for AIMSS at Chamiana, eight DHs, 11 CHs, one Ayurvedic Hospital and one Regional Ayurvedic Hospital (RAH) in 28 cities of Himachal Pradesh during 2021-22. All the sanctioned 28 PSA plants stands installed commissioned and are functional as of January 2023.

In four sites, CH Chopal (Shimla), CH Sarahan (Sirmaur), CH Dehra (Kangra) and CH Jogindernagar (Mandi), PSA plants were being installed by Satluj Jal Vidyut Nigam Limited (SJVNL).

- The status of ventilators and oxygen concentrators (as of August 2021) as observed by Audit was as given below.
  - In the 12 districts, 500 ventilators were available in the HIs as of August 2021, out of which 461 ventilators had been installed and the remaining 39 were lying uninstalled.
  - As of August 2021, there were 773 ventilators installed in 56 HIs of the State, of which 149 ventilators (19 *per cent*) were not functional.
  - As of July 2022, RPGMC, Kangra had 142[46] ventilators, of which 119 were functional while the remaining 23 (16 *per cent*) were not functioning. Similarly, out of 136 oxygen concentrators available, 123 were functional and the remaining 13 (10 *per cent*) were not functioning.

[46] 164 ventilators of which 22 were returned.

In reply, Medical Superintendent RPGMC Kangra stated that the process for repair of these equipment was initiated (July 2022).

- In IGMC, Shimla, out of 177 ventilators, 158 were functional and the remaining 19 (11 *per cent*) were not functioning. Similarly, 213 oxygen concentrators were available.
- In six[47] (11 *per cent*) out of 56 HIs, adequate staff was not available for operating the ventilators.

3.4.6 Findings related to COVID-19 in selected Health Institutions

3.4.6.1 Non-installation of the oxygen plant at Civil Hospital Thural

The State Government (October 2021) conveyed in-principle approval for installation of an oxygen plant at CH Thural. The oxygen plant was lifted from CH Baijnath (November 2021) and was lying uninstalled at CH Thural as of December 2021as can be seen in the **Picture 3.45**.

Picture 3.45: **Oxygen plant lying idle in CH Thural**

The Department in its reply stated that the plant could not be installed and commissioned due to non-receipt of funds for construction of pipeline and purchase of DG set.

In the exit conference (January 2023), the Secretary (Health) stated that action would be taken in this regard.

3.4.6.2 Non-functioning of PSA oxygen plant constructed under SDRF in RPGMC, Kangra

GoI had conveyed (November 2020) the allocation of seven PSA (Pressure Swing Adsorption) Oxygen Generation Plants to Himachal Pradesh, to meet out the oxygen requirement of the HIs. The DHS had accorded expenditure sanction of ₹ 28.56 lakh (February 2021) for installation of 900 LPM capacity PSA oxygen generation plant proposed by RPGMC Kangra (November 2020).

It was noticed that the PSA plant had been installed (September 2021) but was not commissioned (July 2022) as shown in **Pictures 3.46** and **3.47**. The PSA plant was not made operational because of issues of purity and pressure of oxygen, faulty change-over and use of rubber pipe instead of stainless steel/ aluminium/copper pipe.

[47] CH Bhoranj, CH Sujanpur, CH Rohru, DH Solan, Makeshift Hospital Nalagarh and DH Una.


Pictures 3.46 and 3.47: Non-functional PSA plant in RPGMC Kangra

In reply, Principal, RPGMC Kangra stated (July 2022) that as per the recommendation of the technical expert, separate pipeline was required for which tender process was initiated (July 2022). The reply was not acceptable as this issue should have been resolved at the time of installation.

3.4.6.3 Failure to install PSA plant and irregularities thereof in IGMC, Shimla

National Highway Authority of India (NHAI), Shimla communicated to the Principal, IGMC for setting up a PSA plant with capacity of 1000 LPM (July 2021). NHAI had instructed (July 2021) to ensure that PSA plant site be made ready and designate at least two persons for operation of the PSA plant, so that Defense Research Development Organisation (DRDO) could be intimated to supply the PSA machinery.

During joint physical verification (June 2022) of the site of the PSA plant **(Pictures 3.48**, **3.49** and **3.50)**, it was noticed that only civil works and a DG set was found. There was loose cable wire unconnected to the transformer while the civil structure was found filled with oxygen cylinders. On enquiry, the hospital authorities stated that the machinery could not be transported to the selected site due to inaccessibility of the location. Consequently, the hospital authorities have been procuring oxygen from the private agency. Had the hospital installed the plant, the expenditure in procuring the oxygen cylinders could have been minimised and the PSA plant been utilised as envisaged.

Picture 3.48: Civil work with DG set

Picture 3.49: Old oxygen pipeline

Picture 3.50: Cable wire installed for connection to transformer

In the exit conference (January 2023), Secretary (Health) stated that the PSA plant was transferred to HIs in Mandi.

3.4.6.4 Non-utilisation of ventilator machine in CH, Kandaghat

In CH Kandaghat, Audit noticed that two portable ventilators with accessories were received from CMO Solan in July 2021. Both the ventilators could not be installed and were lying idle in the store (January 2022) as there was no basic infrastructure to install them. Due to

improper planning/assessment on the part of the Health Department, the ventilators were lying idle.

3.4.6.5 Sub-standard hand sanitisers

In the Composite Testing Laboratory Kandaghat, it was noticed that 36 numbers of samples (26 *per cent*, out of 137 samples) of hand sanitisers lifted by the State Drug Controller during 2020-22 were declared sub-standard in the laboratory. Before getting the results of testing, these hand sanitisers of the particular batches were already used by the public during COVID-19.

3.4.6.6 Utilisation Certificate

The State Government had conveyed (December 2020) ex-post facto approval to operationalise "the makeshift hospital" at Kangra for treating COVID-19 patients in public interest at a cost of ₹ 3.44 crore. 50 *per cent* of funds amounting to ₹ 1.72 crore were released to CSIR[48]/CBRI[49] Roorkee in advance by DHS in November 2020.

It was noticed in audit that the Principal, RPGMC Kangra had also transferred funds of ₹ 1.48 crore (April 2022) to the Director, CSIR-CBRI, Roorkee for construction of the makeshift hospital. Utilisation Certificates (UC) for ₹ 3.20 crore were neither called nor were the utilisation submitted by the executing agency against the released funds.

In reply, the Health Authorities stated that UCs for ₹ 1.72 crore have to be followed up at the Directorate level and for the remaining amount of ₹ 1.48 crore, the matter is being taken up with Director, CSIR-CBRI, Roorkee.

3.5 Conclusion

- In DH Hamirpur, all OPD services were available, whereas in DH Lahaul and Spiti only two OPD services were available. In the remaining DHs in the state, OPD services ranging between six to 12 were available. In selected CHs, one to nine out of 12 OPD services were available. In all selected CHCs, four out of six OPD services were not available. In absence of these OPD services, patients have to go to other higher-level hospitals.
- In all PHCs, 24*7 emergency service was not available as stipulated in IPHS norms 2012.
- In the State, the number of pregnant mothers who were not registered within the first trimester was 13.69 *per cent*, mothers who had not received three or more ANC check-ups was 25.78 *per cent* and 20.39 *per cent* mothers were not given 100/180 IFA tablets during 2016-22.
- In DHs, against the requirement of 88 tests, 11 to 47 tests were available. In five selected CHs against the norms of 48 tests, 17 to 30 tests were available and in CH Chango, only six tests were available. In five selected CHCs, against the norms of 33 tests, 15 to 27 tests were available. In CHC Bachhwai, only two tests were available and in CHC Majheen, no tests were available.

[48] Council of Scientific and Industrial Research.
[49] Central Building Research Institute.

- Firms failed to commission the 69 STPs in the State even after 19 to 22 months after the scheduled date of completion of the project. The firms have procured and transported the STP material at site, which was lying in ruined condition inside the campus of the HIs.
- None of the HIs had conducted periodical fire audit except DH Solan, DH Kangra and both MCHs. In HIs where fire audit was conducted, the Fire Department had recommended some measures but compliance with the recommendations were not taken up by any of the HIs. In none of the selected HIs, buildings were constructed after taking earthquake safety into consideration.
- Patients Grievance redressal committees were not constituted in any of the selected HIs except in CH Shahpur, CHC Pooh and CHC Syri.
- The State Government prepared the ECRP-I of ₹ 114.74 crore for 2019-22, and ₹ 102.58 crore was spent by the NHM during 2020-22. Major amount was spent on diagnostics including Sample Transport (34 *per cent*) and HR, including incentives for Community Health Volunteers (21 *per cent*).
- ECRP-II was approved by the GOI for ₹ 240.56 crore (₹ 216.51 crore GOI share and ₹ 24.06 crore State share) in August 2021. Further, ₹ 13.10 crore was spent on establishment of field hospitals at Indora, Kangra district and establishment of Liquid Medical O_2 Plant in seven DHs and three CHs. ₹ 22.95 crore was released to DMER in September 2021 which was for essential drugs in medical colleges (MCs) (₹ 10.05 crore), establishment of 100 bedded field hospitals at Hamirpur and Nahan (₹ 7.50 crore) and establishment of liquid medical oxygen plant at six MCs (₹ 5.40 crore)
- DMER received ₹ 63.90 crore from NHM during 2019-22 on account of COVID-19, out of which only ₹ 60.21 crore were transferred to the MCs and fund of ₹ 3.69 crore was not disbursed. Further, there were delays ranging between five to 149 days in transfer of these funds to MCs.
- Ventilator facility was available in 56 health institutions of the State and 624 out of 773 number of ventilators were working while the remaining 149 (19 *per cent*) ventilators were not functioning.
- At CH Thural, oxygen plant which was lifted from CH Baijnath in November 2021 was not installed. Similarly, in both the medical colleges (IGMC, Shimla and RPGMC, Kangra) PSA plant could not be made operational because the machinery could not be transported to the selected site due to high altitude of the location in IGMC and issues of oxygen pressure etc, in RPMGC, Kangra.

3.6 Recommendations

Government may consider:

- *Ensuring that all essential services as envisaged in IPHS norms 2012 are available in HIs at all levels.*

- *Periodic review and distribution of resources as per the norms enabling availability of resources in the secondary/ primary level HIs and load management in the higher level HIs.*
- *Ensuring that MOs are posted in all PHCs so as to provide 24x7 services.*
- ***For HIs without adequate potable water or suitable toilet facilities, coverage of such institutions under Jal Jiwan Mission and Swacch Bharat Mission may be considered***.
- *Strengthening the ante-natal care by proper monitoring and follow up of all registered pregnant women in collaboration with ASHA workers and ensuring that all pregnant women are registered and provided all the ANCs so that MMR, IMR, still births etc. can be reduced.*
- *Constituting Patients Grievance redressal committee in all HIs so that the views of the patients are addressed.*
- *Ensure providing all the laboratory tests in all HIs as per the requirement.*
- *Carrying out repairs to non-functional emergency equipment/facilities at the earliest for removing obstacles for prompt addressing of emergency cases.*
- *Making equipment available to health institutions with higher patient loads*.
- *Ensuring timely action for installation/commissioning of the STPs so as to make the sewerage treatment plants functional.*
- *The information on Ambulance response time should be maintained in prescribed format for proper evaluation of the service provided.*
- *Reviewing disaster preparedness in all HIs and taking remedial/preventive/preparatory steps in coordination with State Disaster Management authorities and adhering to their recommendations.*
- *Adhering to the BMW Rules rigorously to provide an infection-free environment in the hospital and dealing with any deviations seriously and developing an adequate monitoring mechanism.*