

Chapter-8

Infrastructure and Other Issues

8 Infrastructure and Other Issues

To deliver quality health services in the public health facilities, adequate and properly maintained building infrastructure is of critical importance. Examination of records disclosed inadequacies in infrastructure, as discussed in the succeeding paragraphs.

8.1 Availability of beds

As per IPHS, there should be a district hospital in each district to cater to the secondary health care needs of the public at the district level. Further, IPHS provide that there should be 220 beds in a district hospital for a district having a population of 10 lakh.

It was observed that district hospitals were established in all districts as of March 2019 except in Dehradun¹. Although, the number of hospital beds functional in the test checked hospitals (except DH Almora) were more than the sanctioned strength, the number of sanctioned hospital beds did not confirm to the IPHS norms in all test check case except DH Almora. The details are given in the **Table-61** below:

Table-61: Availability of beds in the test checked hospitals

District	District Population	Number of beds required as per IPHS	Actual Number (DH+DFH)		Percentage of functional beds w.r.t. IPHS	
			Sanctioned	Functional	Shortage	Excess
Almora	6,22,506	137	143	97	29	-
Chamoli	3,91,605	86	78	135	-	57
Haridwar	18,90,422	416	120	138	67	-
Udham Singh Nagar	16,48,902	363	125	161	56	-

Source: Information collected from test checked hospitals; Census 2011; and IPHS.

In the test checked hospitals², it was noticed that number of functional beds was higher than that of sanctioned beds but additional staff was not provided by the DGMH & FW. Further, the number of hospital beds functional in the hospitals did not conform to the IPHS in three sampled districts³ as only 396 hospital beds (43 per cent) were functional against the requirement of 916 hospital beds as of March 2019.

During the Exit Conference, the Government while accepting the facts stated that the standardisation of resources and services would be met with the adoption of IPHS.

¹ DH Dehradun was converted into Medical College on 23 December 2015 and no district hospital was established thereafter.

² DH & DFH Haridwar, JH Udham Singh Nagar and JH Chamoli.

³ Almora, Haridwar and Udham Singh Nagar.

8.1.1 Inadequate infrastructure and lack of maintenance

Upkeep of hospital buildings through periodic maintenance is critical to utilise the created infrastructure optimally and to ensure availability of a safe, clean and conducive environment for the public and hospital staff. Further, as per IPHS, the building should be well maintained⁴. There should be no growth of algae and mosses on walls. Hospitals should have anti-skid and non-slippery floors.

- Records of DH Haridwar revealed that the overall maintenance of hospital buildings was not carried out even once during 2017-20. The repairs of X-ray room, renovation of Mortuary, OPD and Emergency rooms, which were in dilapidated condition with seepage (**Photograph-17** alongside) on walls, could not be carried out due to non-approval of Annual Maintenance Plan for the year 2017-18 and 2018-19 (as on January 2020) by DGMH & FW.



Photograph-17: Seepage in OPD (Ortho room) at DH Haridwar

During the Exit Conference, the Government while accepting the facts stated that DH Haridwar would be instructed to take up maintenance work with its own funds (user charges).

- During joint physical inspection, audit observed that the hospital buildings of DH Haridwar were poorly maintained and residential quarters of doctors and kitchen were in a dilapidated condition. Further, the wards had seepages/moisture causing peeling of paint and damaging the roof⁵ as seen in the **Photographs-18** and **19** below.



Photograph-18: Broken roof in Ward in DH Haridwar



Photograph-19: Ward in dilapidated condition in DH Haridwar

⁴ With no seepage; cracks in the walls; broken windows and glass panes.

⁵ The occupant of the bed is in danger of receiving injuries in case of sudden collapse of further area of the ceiling.

- In JH Chamoli and DH Haridwar, testing and collection of samples in Pathology laboratory were done in single room whereas separate rooms for collection and testing are required for maintaining hygiene and for preventing any infection to the patients.
- Separate lavatory was not available in DH Haridwar and JH Chamoli for Pathology laboratory and the occupants had to use lavatory of other wing⁶.
- Scrutiny of Records of DH Haridwar and JH Udham Singh Nagar also revealed that some of the services, to be provided within the hospital premises⁷, were functional either in separate buildings⁸ not within the campus of DH/JH or in another hospital⁹. Further, due to inadequate space in the building, the DFH Haridwar had to create labour ward with temporary structure at the exit lobby/circulation area on the second floor of the building to meet the existing demand.

8.1.2 Non utilisation of created infrastructure

- It was found that SNCU in JH Udham Singh Nagar was not operational (December 2019) despite having the civil structure created with NHM funds in 2016-17. The requirement for equipment and human resources was identified only after a gap of three years which indicates the inability of the management in making the SNCU facility operational.
- The ICUs created in JH Udham Singh Nagar in 2006-07 and JH Chamoli in 2005-06 were not functional due to non-availability of equipment and manpower.
- In JH Chamoli, infrastructure for Emergency and Trauma Centre was created in 2005-06. However, this facility was not being utilised due to non-availability of essential equipment and specialised manpower.

During the Exit Conference, the Government while accepting the facts stated that ICU infrastructure was not created/operationalised in all hospitals due to non-availability of dedicated staff. However, in response to the Covid-19 pandemic, the ICU infrastructure in the hospitals had now been created. Further, it was informed that due to non-availability of required specialised manpower, the Trauma Centre of JH Chamoli could not be made functional.

8.2 Power backup

As per IPHS, the district hospitals must have 24-hour uninterrupted stabilised power supply with three phases and capacity of 25-50 KVA. Records and logbook of the power backup system of the test checked hospitals revealed that:

- All test checked hospitals had generator installed but were being operated manually. This implied that uninterrupted power backup necessary for smooth functioning of OT; AC in the wards; medicines kept in cold chain/refrigerators; lifts; and blood

⁶ In DH Haridwar, occupants used the lavatory facility of STI wing and in JH Chamoli, the occupants of the laboratory had to use common lavatory situated in the lobby.

⁷ As per IPHS, the blood bank should be within the proximity of OT and emergency.

⁸ Blood Bank of DH Haridwar and JH Udham Singh Nagar.

⁹ Physiotherapy, Dental OPD and Microbiology lab of DH Haridwar were located in Mela Hospital.

banks could not be ensured due to manual operation of the generator. In JH Udham Singh Nagar, it was noticed that a patient was ready for procedure in OT, but the doctor had to wait due to power interruption for around 10 minutes. In JH Chamoli, due to interruption of power supply and non-availability of back up supply in OT¹⁰, the OT procedure which was undergoing was hindered for some time. The facts were admitted by the concerned authorities.

- Dialysis Department in JH Udham Singh Nagar was functional on PPP mode but the expenses of consumption of electricity were not borne by the concessionaire as per the agreement. It was stated that necessary recovery would be made from the private partner.
- The AMC of generators was not done in five out of six test checked hospitals.
- AMC of invertors was not done by any of the test checked hospitals except DFH Haridwar.

8.3 Adequacy of Water Supply

As per IPHS, arrangement should be made for round the clock piped water supply along with an overhead water storage tank with pumping and boosting arrangements. Water requirement per bed per day is around 450 to 500 litres (excluding requirements for firefighting, horticulture and steam).

Records of test checked hospitals revealed that water was supplied through piped line by Jal Sansthan except for JH Udham Singh Nagar¹¹. The details of requirement, capacity of overhead tanks and availability of backup of water as on date of audit is detailed in the **Table-62** given below:

Table-62: Adequacy of Water supply in test checked hospitals

Details of requirement	DFH		JH		DH	
	Almora	Haridwar	Chamoli	Udham Singh Nagar	Almora	Haridwar
Number of beds operational	38	68	135	161	59	70
Water requirement @ 450 (in litres)	17,100	30,600	60,750	72,450	26,550	31,500
Water consumption (as per capacity of overhead tank in litres)	14,800	30,000	16,400	1,50,000	24,900	22,000
Backup (in litres)	12,600	Nil	30,000	Bore well	40,000	Nil
Biological testing of water samples.	No	No	No	Yes	No	No
Cleaning of Tanks	No	Yes	Yes	Yes	Yes	Yes
AMC ROs	No	Yes	No	No	No	No

Source: Test checked hospitals.

- No biological testing of water samples was conducted by five test checked hospitals during the period 2014-19.
- No concrete measures were taken by taken by DFH Haridwar, JH Chamoli and DH Haridwar to augment the availability of water to meet the requirement as per norms.
- All the test checked hospitals failed to clean the overhead and underground tanks periodically during the period 2014-19.

¹⁰ Inverter and Generator not in order.

¹¹ Using bore well facility.

- Comprehensive AMC of available Water Purifiers was not done by any of the test checked hospitals except DFH Haridwar.
- Records of water disruptions during the last five years were not maintained by any test checked hospitals.

The facts were accepted by the hospitals and it was stated that necessary measures would be taken to overcome the deficiencies.

8.4 Medical Gas (Oxygen)

Oxygen is an essential element of basic emergency care¹² and is required for surgery and treatment of several respiratory diseases, both chronic and acute. In June 2017, 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. The IPHS also require that OT/ICU/SNCU, etc. should have medical gases.

Audit observed that:

- Centralised¹³ Oxygen supply system was not installed in five test checked hospitals to ensure uninterrupted oxygen supply.
- Adequate arrangements¹⁴ for oxygen cylinder were not available in test checked hospitals and the buffer stock was also not identified in two¹⁵ hospitals.
- As per LaQshya guidelines and Standard Operating Procedure, the oxygen cylinders are required to be checked daily and weekly. However, no such records were maintained in DFH Haridwar and JH Chamoli.

Positive feature

JH Udham Singh Nagar had installed Centralised Oxygen supply system.

8.5 Quality Certification

Quality Certification program for public health facilities recognises the good performing facilities and it also enables to improve the credibility of public hospitals in community. National Accreditation Board for Hospitals and Healthcare Providers (NABH) is a constituent board of Quality Council of India, an autonomous body, for accreditation of healthcare organisations. Certification is also provided against National Quality Assurance Standards (NQAS) on meeting pre-determined criteria. The certified facilities are also provided financial incentives as recognition of their good work.

¹² Oxygen is a life-saving therapeutic medical gas used for the management of hypoxaemia-an abnormally low level of oxygen in the blood that is caused by disease, trauma or other health conditions.

¹³ Centralized pipeline system comprises a main source of supply (generally with a secondary and tertiary source to ensure continuity of service) connected via a permanent fixed pipeline system to appropriate terminal unit outlets in relevant locations across the site. Plant and system status are monitored continuously by a series of alarms which sound at designated locations to indicate faults or low pressure.

¹⁴ No agreement was done with any vendor for uninterrupted supply of oxygen cylinders.

¹⁵ DFH and DH Haridwar.

None of the test checked hospitals had received NABH accreditation. For NQAS, certification records revealed that only three out of six test checked hospitals had applied for certification under NQAS. Further, only two had received quality certification under NQAS in five Departments each while JH Chamoli was in the process of obtaining accreditation.

Positive feature
JH Udham Singh Nagar and DFH Haridwar had received quality certification under NQAS in five¹⁶ departments each.

During Exit Conference, it was informed by the Government that instructions would be issued to all hospitals to prepare themselves for obtaining accreditation under NABH and also to obtain accreditation under NQAS.

8.6 Compliances in regard to statutory requirements

IPHS provide 25 types of statutory requirements which shall be fulfilled by the district hospitals. The status regarding the statutory compliances fulfilled by the test checked hospitals is indicated in **Table-63** given below:

Table-63: Status of statutory compliances fulfilled by the test checked hospitals

Sl. No.	Statutory compliances	Almora		Haridwar		Chamoli	Udham Singh Nagar
		DH	DFH	DH	DFH	JH	JH
1.	No Objection Certificate from the Chief Fire officer	No	No	No	Yes	No	No
2.	Authorisation under Bio-medical Waste (Management and Handling) Rules, 1998.	No	No	No	No	No**	No
3.	Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008.	No	No	No	No	No	No
4.	License for Blood Bank or Authorisation for Blood Storage facility.	No	NA	Yes	NA	No	Yes
5.	Excise permit to store spirit.	No	No	No	No	No	No
6.	Authorisation from the Atomic Energy Regulation Board.	Yes*	NA	Yes*	NA	No	Yes*
7.	Vehicle Registration Certificates for Ambulances	Yes	NA	No ¹⁷	Yes	Yes	Yes
8.	Consumer Protection Act	No	No	No	No	No	No
9.	Drug & Cosmetic Act 1950	Yes	Yes	Yes	Yes	Yes	Yes
10.	Fatal Accidents Act 1855	No	No	No	No	No	No
11.	Indian Lunacy Act 1912	No	No	No	No	No	No
12.	Indian Medical Council Act and code of Medical Ethics	Yes	Yes	Yes	Yes	Yes	Yes
13.	Right to Information Act	Yes	Yes	Yes	Yes	Yes	Yes
14.	Indian nursing Council Act	Yes	Yes	Yes	Yes	Yes	Yes
15.	Insecticides Act 1968	Yes	Yes	Yes	No	No	No
16.	Maternity Benefit Act 1961	NA	No	NA	No	No	No
17.	Boilers Act as amended in 2007	No	No	No	No	No	No
18.	MTP Act 1971	NA	No	NA	No	No	Yes
19.	Persons with Disability Act 1995	Yes	No	No	No	Yes	No
20.	PC & PNDT Act 1994	Yes	Yes	Yes	Yes	Yes	Yes
21.	PNDT Act 1996	Yes	Yes	Yes	Yes	Yes	Yes
22.	Narcotics and psychotropic substances Act 1985	Yes	Yes	Yes	No	No	No
23.	Clinical Establishments (Registration and Regulation) Act 2010	Yes	Yes	Yes	No	No	Yes
24.	Type and Site Approval from AERB for X-ray, CT Scan unit.	Yes	No	No	No	No	No
25.	Mental Health Act 1987	Yes	Yes	Yes	No	No	No

NA: Not Applicable.

* obtained in April 2019.

**Valid upto 2 September 2018 only.

¹⁶ JH Udham Singh Nagar (OPD, OT, Blood Bank, Laboratory and Radiology) and in DFH Haridwar (OPD, Labour room, Maternity ward, SNCU and Operation Theatre).

¹⁷ Expired Registration.

- No Objection Certificate from the Chief Fire Officer was not obtained by any of the test checked hospitals except DFH Haridwar.
- Authorisation under Bio-medical Waste (Management and Handling) Rules, 2016 and Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2016 was not available in any of the test checked hospitals.
- Compliances in respect of Excise permit to store spirit, Fatal Accidents Act 1855, Indian Lunacy Act 1912¹⁸, Boilers Act and Type and site Approval from AERB for X-ray, CT Scan unit¹⁹ were not adhered by any of test checked hospitals.
- Narcotics and Psychotropic Substances Act 1985 and Mental Health Act 1987 were not complied by DFH Haridwar, JH Chamoli and JH Udham Singh Nagar.

During the Exit Conference, it was stated by the Government that instructions would be issued to all hospitals for early compliance.

To sum up, the number of beds functional in the hospital did not conform to the norms. Uninterrupted power backup and centralised medical gases (oxygen) system critical to Hospital functioning were not ensured. Further, failure of the Department to operationalise the completed infrastructure only served to aggravate the problems of inadequate access to quality health care.

¹⁸ Reception, Care and Treatment of Lunatics.

¹⁹ Except in DH Almora.

