A blue envelope icon with a white triangular flap pointing upwards. The envelope is centered on a light green background.

**CHAPTER-II
PERFORMANCE
AUDIT**

CHAPTER-II PERFORMANCE AUDIT

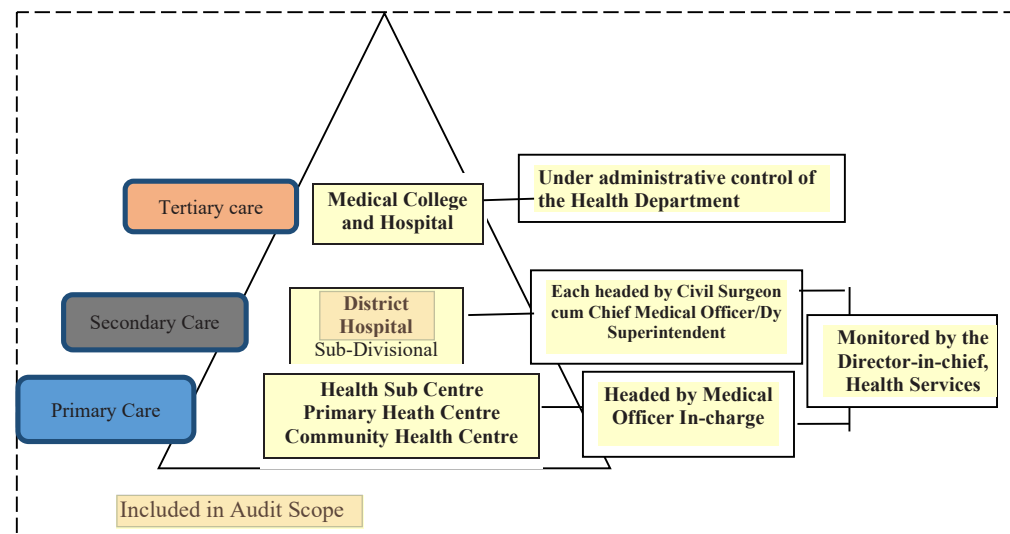
HEALTH DEPARTMENT

Functioning of District Hospitals

2.1 Introduction

The focus of India's National Health Policy 2017 is to strengthen the trust of the common man in the public healthcare system by making it predictable, efficient, patient-centric, affordable and effective, with a comprehensive package of services and products that meet immediate healthcare needs of the people. At the global level, the Sustainable Development Agenda aims to ensure healthy lives and promote well-being for all by 2030 as per Sustainable Development Goal (SDG) 3. In Bihar, a three-tier healthcare system *viz.* primary, secondary and tertiary, is in place to provide quality medical care services to the people of the State as depicted in **Chart 2.1** below.

**Chart 2.1
Public Healthcare Facilities in Bihar**



Patients requiring more serious healthcare attention are referred to the second-tier healthcare system. In tertiary healthcare system, specialised consultative care is provided by the medical colleges and advance medical research institutes upon referral from primary or secondary healthcare units.

As per Indian Public Health Standards (IPHS), every district is expected to have a District Hospital (DH) linked with healthcare units down below. The main objectives of DHs are to provide comprehensive secondary healthcare services to the people in the district at an acceptable level of quality. DH should provide all basic specialty services and aim to develop super-specialty services gradually. DH also needs to be ready for epidemic and disaster management at all times.

There are 36 District Hospitals in 38 districts of Bihar, two districts namely West Champaran and Darbhanga have no DH.

2.1.1 Norms for health facilities in the hospitals

2.1.1.1 Indian Public Health Standards

IPHS are a set of uniform standards envisaged to improve the quality of healthcare delivery in the country. IPHS for District Hospitals were published in January/February 2007, which were subsequently revised in 2012, keeping in view the changing protocols of the existing health programmes and introduction of new health programmes especially for Non-Communicable Diseases. These standards were used as the reference point for public healthcare infrastructure in the States and UTs. IPHS act as the main driver for continuous improvement in quality of health facilities and serve as the benchmark for assessing their functional status.

2.1.1.2 National Health Mission

The objective of National Health Mission (NHM) is to guide the State Government in ensuring achievement of universal access to healthcare through strengthening of healthcare systems, institutions and capabilities. The major components of NHM are Health System Strengthening, Reproductive, Maternal, New-born and Adolescent Health and National Disease Control Programmes *etc.* This was providing impetus in the effective implementation of the entire flagship programmes including *Janani Suraksha Yojna (JSY) etc.*, across the State.

2.1.2 Organisational set-up

Health Department, Government of Bihar (GoB), headed by the Principal Secretary, is responsible for management of healthcare systems in the State.

Besides, GoB set up State Health Society (SHS) in 2005, and Bihar Medical Services & Infrastructure Corporation Limited (BMSICL) in July 2010. SHS is mandated to serve as additional managerial and technical capacity to Health Department for implementation of National Rural Health Mission (NRHM), now NHM. BMSICL is the sole procurement and distribution agency of drugs and equipment for all establishments under the Department of Health, GoB. It is also responsible for undertaking construction of healthcare facilities and related infrastructure/buildings in the State.

At the district level, Civil Surgeon (CS)-cum-Chief Medical Officer (CMO) is responsible for functioning of different healthcare facilities in the district. Superintendent/Deputy Superintendent is overall in-charge of a District Hospital.

2.1.3 Justification for selection of the topic

Performance Audit on “Functioning of District Hospitals” was taken up because the population of a district are mainly dependent on District Hospitals

for specialised and comprehensive healthcare. District Hospital should have the technical resources in terms of laboratories and skills to diagnose disease outbreaks and provide inputs for district level planning, data analysis and management *etc.* and serve as a model for the quality healthcare with respect to patient amenities, patient safety and hospital management practices.

This Performance Audit endeavors to assess overall health services being provided by District Hospitals.

2.1.4 Audit objective

Performance Audit on “Functioning of District Hospitals” was undertaken to assess:

- Whether comprehensive plans and strategies regarding District Hospitals have been developed and implemented effectively for ensuring availability of accessible, affordable and quality health services;
- Whether Financial Management was efficient; adequate funds were made available timely and allocated funds were utilised optimally for providing prescribed healthcare facilities at the District Hospitals;
- Whether adequate provisions for line services such as Out-Patient Department (OPD), In-Patient Department (IPD), Intensive Care Unit (ICU), Operation Theatre (OT), Maternity, Infection Control *etc.* and efficient support services like Registration, Diagnostic/Radiology, diet management, ambulance service, bio-medical waste, cold chain, power back up, *etc.* exist in District Hospitals and these services are being delivered in an efficient and effective manner;
- Whether District Hospitals have adequate resources *viz.*, human, infrastructure, drugs, consumables, equipment, *etc.* as per prescribed norms and are utilising these resources efficiently and effectively; and whether there is a system in place to manage disasters/mass casualty; and
- Whether effective monitoring and regulatory systems have been put in place for ensuring delivery of quality healthcare to public.

2.1.5 Audit criteria

The sources of audit criteria are as follows.

- Indian Public Health Standards (IPHS), 2012;
- Maternal and Newborn Health Toolkit (MNH), 2013;
- Framework for Implementation of National Health Mission (NHM) 2012-2017
- Operational guidelines for Quality assurance, 2013 and GoI-2013- ‘NHM Assessor Guidebook DH Vol. I & II’;
- National Disaster Management Guidelines, 2014 and National Disaster Management Guidelines for Hospital Safety, 2016;

- By-laws of State Health Society, Bihar and MoU between GoI and State for implementation of NHM;
- Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002
- Bihar Financial Rules (BFR);
- Health Management Information Systems; and Departmental/Government policies, rules, orders, manuals and regulations.

Health Department did not prescribe any specific standard/benchmark with respect to service delivery in a District Hospital. Therefore, to evaluate the audit objectives, criteria were, *inter alia*, sourced from various guidelines on healthcare services, including IPHS, issued by Government of India (GoI). Since, GoB sanctioned (June 2009) posts of doctors, nurses and other staff in DHs in accordance with IPHS, therefore, Audit has made an attempt to evaluate the availability of various services in District Hospitals as per IPHS norms also for sanctioned number of beds.

2.1.6 Audit scope and methodology

Performance Audit for the period 2014-15 to 2019-20 was conducted during November 2019 to March 2020 and again in June, October and December 2020 and July and August 2021 through test-check of records of the offices of the Principal Secretary (Health Department), SHS, BMSICL at the State level; whereas, at district level, records of sampled¹ District Hospitals, CMO office and District Health Society (DHS) were examined in five districts.

Audit methodology comprised document/database analysis, responses to audit queries, collection of information through questionnaires/proforma and joint physical verification.

Keeping in mind the limitation of resources and to see variations across the entire audit period, the questionnaires were designed to capture data at different frequencies- yearly, monthly² and weekly³.

An entry conference was conducted in October 2019 with the Principal Secretary and other officers of the Health Department wherein the audit objectives, audit criteria and methodology were discussed.

An exit conference was held in August 2021 with the Additional Chief Secretary of the Department and the Executive Director, State Health Society, wherein audit observations were discussed. The Executive Director, State Health Society

¹ 10 District Hospitals were sampled for this Performance Audit. However, this report has been prepared on the basis of findings of the audited entities (District Hospital, Civil Surgeon, District Health Society) in five districts i.e. Biharsharif, Hajipur, Jehanabad, Madhepura and Patna due to COVID 19 pandemic.

² May 2014, August 2015, November 2016, February 2018, May 2018 and August 2019.

³ The first week was selected from the selected months.

stated that none of the findings of the report could be denied and these findings would be very helpful in rectifying the shortcomings. Besides, Additional Chief Secretary also accepted the State of affairs and agreed that this report would be very helpful for the Department.

Detailed replies (September 2021) furnished by SHS have been suitably incorporated in the report.

2.1.7 Planning

As evident from **Table 2.1**, the position of Bihar in terms of health indicators is not at par with the national average.

Table-2.1
Health indicators of Bihar vis-à-vis India

Sl. No.	Health Indicators	Bihar		India	
		2013	2018	2013	2018
1	Birth Rate (in <i>per cent</i>)	27.6	26.2	21.4	20
2	Death Rate (in <i>per cent</i>)	6.6	5.8	7	6.2
3	Maternal Mortality Ratio (MMR) (<i>per lakh live births</i>)	208	149	167	113
4	Infant Mortality Rate (IMR) (<i>per 1000 live births</i>)	42	32	40	32
5	Neonatal Mortality Rate	28	25	28	23
6	Under 5 Mortality Rate (<i>per 1000 live births</i>)	54	37	49	36
7	Total Fertility Rate (TFR)	3.4	3.2	2.3	2.2

(Source: Registrar General of India)

Further, as per IPHS, one District Hospital (DH) should be created in each district wherein total beds should be based on a district's population, bed days per year and bed occupancy rate. Shortfall of beds ranged between 52 and 92 *per cent vis-à-vis* IPHS norm, as shown in **Table 2.2**, implying that bed strength of DH was not commensurate with the population. Except DH-Biharsharif and DH-Patna, even available beds were only 24 to 32 *per cent* of what was sanctioned by GoB (June 2009). GoB had sanctioned the bed strength of these hospitals in the year 2009 and despite lapse of more than 10 years, actual bed strength was not raised to the sanctioned level (March 2020).

Table-2.2
Availability of hospital beds in test-checked DHs

District Hospital	Population (Lakh) as per Census 2011	Status of beds in District-level Hospitals				Shortfall of hospital beds against IPHS norms (2019-20) (<i>in per cent</i>)
		Required as per IPHS*	Sanctioned by GoB	Availability		
				2014-15	2019-20	
Biharsharif	28.80	630	300	300	300	330 (52)
Hajipur	35.00	765	500	120	120	645 (84)
Jehanabad	11.30	250	300	97	97	153 (61)
Madhepura	20.00	440	300	91	91	349 (79)
Patna	58.40	1,280	100	100	100	1,180 (92)

(Source: Test-checked DHs and Economic Survey, GoB)

* As per IPHS, the assumption of the annual rate of admission as one per 50 population and average length of stay 5 days. Bed occupancy has been assumed to be 80 per cent as mentioned in IPHS.

This called for a better planning on the part of State Government to address the requirement of population of the district. But, Audit noted deficiencies in planning as discussed in the succeeding paragraphs.

2.1.7.1 Manpower Planning

The delivery of quality healthcare services in hospitals largely depends on the adequate availability of manpower especially doctors, staff nurses, para-medical and other supporting staff. Audit noticed that shortage of doctors and nurses was a statewide phenomenon, which persisted throughout audit period *i.e.* 2014-15 to 2019-20. GoB could not recruit doctors and nurses. Even total vacancies were not published to get them filled.

General Administration Department (GAD), GoB directed (January 2006) that every department should assess their vacancy and proposal for filling them should be sent to recruiting agency up to 30 April of every year. Audit observed that yearly assessment of vacancy and sending proposal to recruiting agency for filling them was not followed. Test check of records of Health Department (February 2021) disclosed that the Department had sent a proposal for recruitment of 2,597 Specialist Doctors to Bihar Public Service Commission (BPSC) during November 2011 to March 2014, out of which only 635 (24 *per cent*) were appointed (June 2016). Further, the Department sent a fresh proposal of 2,297 in May 2019 to GAD after a gap of three years. This was indicative of the indifferent attitude of the Department towards the appointment of doctors.

Audit observed that after November 2015, proposal for recruitment of 9,130 posts of Grade-‘A’ nurses (GNM) was sent to GAD, GoB in March 2019. It was sent onwards to Bihar Technical Service Commission (BTSC) in May 2019 and advertisement for recruitment was published by BTSC in July 2019. However, the recruitment was under process (July 2020).

Further, during 2014-19, Department sent (March 2015) vacancy for 67 posts of ECG technician against the sanctioned posts of 72 to Bihar Staff Selection Commission. However, due to non-finalisation of age relaxation factor and eligible diploma courses, recruitment process was delayed and finally only ten applicants were selected in May 2019.

Also, recruitment of pharmacists (844 posts) initiated in the year 2015, could not be finalised till the year 2019 due to fluctuation in the number of posts (finally 1,152), incomplete enclosures, procedural deficiencies *etc.*

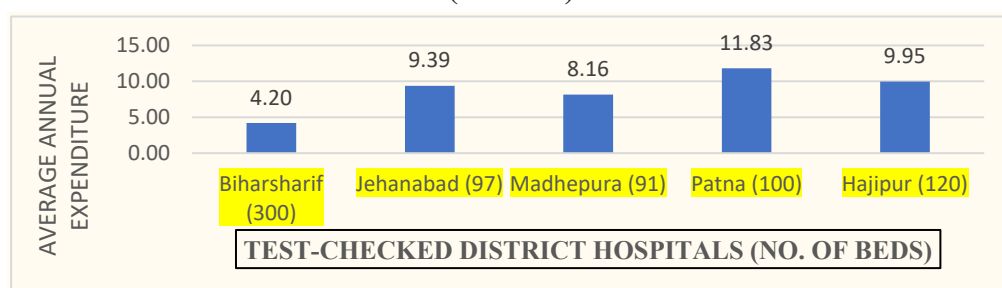
The shortage of Medical Officers especially the Specialist Doctors, nurses and para-medical staff in DHs was an area of concern as in their absence, the patients were deprived of quality treatment. Shortage of administrative staff hampered the day to day work in DHs *viz.* delayed payment under JBSY *etc.*

2.1.7.2. Standardisation of services

As per NHM Framework 2012-17, facility development plan comprising infrastructure, equipment, human resources, drugs and supplies, quality assurance systems and service provisioning *etc.* was to be prepared for each hospital on the basis of gap analysis *vis-à-vis* the standard/benchmark.

Audit observed that the Department did not prescribe any specific standard/benchmark with respect to service delivery in a District Hospital. Gap analysis in District Hospitals could not be carried out in absence of standards/norms. Thus, meaningful budgetary exercise for ascertaining requirement of resources and funds for the District Hospitals was found absent. It has remained limited to allocating the budgeted funds to District Hospitals, but without any perceptible basis, also corroborated by the inequity in average annual expenditure per bed in the test-checked District Hospitals during 2014-20, as shown in **Chart 2.2**.

Chart -2.2
Average annual expenditure (₹ in lakh) per bed in test-checked DHs (2014-20)



(Source: Test-checked DHs)

Absence of gap analysis also adversely impacted the availability of various OPD, IPD and other support services in the test-checked District Hospitals as discussed subsequently. The Department accepted (June 2020) the absence of periodical gap assessment and mechanism to bridge the gap.

No specific reply was furnished by SHS regarding adoption of specific standard for service delivery in DH. However, it was informed (September 2021) that gap assessment was conducted in District Hospitals. Based on the prevailing building condition, amenities and demographic profile, 22 Model District Hospitals had been approved in NHM. Reply corroborated audit observation.

2.1.7.3 Registration under Clinical Establishment Act

According to the Clinical Establishments (Registration and Regulation) Act 2010 read with Bihar Clinical Establishments (Registration and Regulation) Rules 2013, no person (including clinical establishment owned, controlled or managed by the Government) shall run a clinical establishment unless it has been duly registered under the Act. For registration and continuation, every clinical establishment shall fulfill certain conditions such as minimum standards of facilities and services, minimum requirement of personnel *etc.* The Department

specifically issued instructions to all CS-cum-CMO in 2013 and subsequently every year regarding registration of the health units.

Audit observed that out of five test-checked DHs only two DHs *i.e.* DH-Biharsharif and DH-Hajipur were provisionally registered in January 2016 and May 2016, and even that registration lapsed in January 2017 and May 2017 respectively. Thus, in absence of proper affiliation/registration to appropriate Act, these hospitals are escaping from requirements of mandatory conditions/minimum standards for running clinical establishments. It may be attributed to lapses on the part of CS-cum-CMO of the concerned districts, as despite repeated directions of the Department, they did not take the corrective action. Moreover, it was also indicative of ineffective monitoring by the Department. The Department could not give reasons for not registering these hospitals under the Act.

2.1.7.3 (i) Quality assurance assessment of District Hospital

According to Operational Guidelines for Quality Assurance in Public Health Facilities- 2013, State Quality Assurance Committee (SQAC), State Quality Assurance Unit (SQUA) at State level and District Quality Assurance Committee (DQAC), District Quality Assurance Unit (DQAU) at district level and District Quality Team (DQT) at District Hospital level are to be constituted for strengthening the quality assurance activities through holding of review meetings, compilation and collation of Key Performance Indicators *etc.*

Audit observed that though SQAC and SQUA were constituted, they failed to perform mandated activities like holding of review meetings and monitoring of Key Performance Indicators (pertaining to productivity, efficiency, clinical care/safety and service quality) during 2014-20. DQAC was constituted only in three districts⁴. However, required quarterly review meeting⁵ of the progress of quality assurance activity was not held by DQAC during 2014-20. The working arm of DQAC *i.e.* DQAU was not constituted in any of the three districts. Out of five test-checked DHs, DQT was constituted only in DH-Biharsharif (February 2015), however, it was not functional as evident from absence of regular internal assessment, audit, review *etc.*

Thus, monitoring agencies needed for quality control in District Hospitals were inadequate and health facilities therein were not assessed for corrective action and betterment. No reason for this was available on record.

In its reply, SHS informed that only one SQAC meeting (February 2015) was held during 2014-20. DQACs had been constituted in two remaining districts -Madhepura and Patna. DQAC meetings had been held in all test-checked districts. Reply is not tenable as reply was not accompanied with the details

⁴ Biharsharif (March 2015), Hajipur (February 2012) and Jehanabad (December 2015)

⁵ Biharsharif- Nil, Hajipur-1 and Jehanabad- 12

such as when DQACs were constituted, minutes of the meetings etc. Moreover, in respect of DQAC meetings, only 12, one and no meetings were held in Jehanabad, Hajipur and Biharsharif respectively against the requirement of 24 meetings (to be held every quarter) during 2014-20. Besides, only one meeting of SQAC was held against the requirement of 12 meetings during 2014-20 (once in every six months).

SHS accepted that no DQAU was constituted in test-checked districts during 2014-20.

2.1.7.3 (ii) Accreditation of District Hospitals

According to IPHS, District Hospitals should prepare themselves and try to get certification/ accreditation such as ISO, NABH, NABL, JCI etc. Audit observed that DHs were not assessed for aforesaid accreditation as they did not apply for the same during 2014-20. Though, DH-Biharsharif and DH-Jehanabad had obtained ISO certification and the accreditation was valid till 2016 but after expiry of the accreditation, they did not apply for renewal.

2.1.7.4 Management of specific illness in District Hospitals

As per the GoI guidelines, DHs should stay prepared for specific illnesses such as Acute Encephalitis Syndrome (AES)/Japanese Encephalitis (JE) etc.

GoI identified 15 districts of the State as AES/JE affected and four out of five test-checked districts - Biharsharif, Patna, Jehanabad and Hajipur were included in the list. However, laboratory diagnostic facility required for JE/AES was not available in any of the affected test-checked DHs. Thus, Department did not plan treatment facility in DHs for district specific illness. Department did not furnish any reason for this. Thus, the lackadaisical attitude of the Department compelled the patients affected with these diseases to visit other health units.

2.1.7.5 Strengthening of District Hospital as training site

Contrary to NHM guidelines for 'Strengthening the District Hospital for Multi-specialty care and a Site for Training 2017', test-checked DHs were not developed as a site for training for nurses, paramedics and Diplomate of National Board (DNB) courses. DH-Biharsharif had applied (September 2019) to National Board of Examination for accreditation to start DNB course. However, approval of the same is still awaited. Further, none of the DHs had planned for training and skill development of sub-district level hospitals.

SHS informed that approval of DNB course in DH-Biharsharif was still awaited.

2.1.8 Financial Management

The State provides funds for the health facilities under Grant No. 20 comprising of four Major Heads of Accounts viz. 2210 (Medical and Public Health), 4210 (Capital Outlay on Medical and Public Health), 2211 (Family Welfare) and 2251

(Secretariat- Social Services). However, DHs get funds under major head 2210. Apart from the State budget, DHs also get financial assistance under NHM. As the State Budget did not segregate separate funds for DHs only, Audit could not ascertain the funds allotted to DHs and expenditure there against.

A comparison of expenditure on medical, public health and family welfare with respect to the aggregate expenditure made by Bihar as against All India and neighbouring States is as follows:

Table- 2.3
Comparison of expenditure on medical, public health and family welfare by Bihar with neighboring States

Year	Expenditure on Medical and Public Health & Family Welfare- As ratio to aggregate expenditure (in per cent)				
	All India	Bihar	Jharkhand	Uttar Pradesh	West Bengal
2014-15	4.8	3.8	4.0	5.1	5.2
2015-16	4.7	4.1	4.0	4.5	5.6
2016-17	4.6	4.3	4.2	4.9	5.2
2017-18	5.0	4.5	4.2	5.3	4.9
2018-19	5.0	4.7	5.2	4.6	4.8
2019-20	4.9	4.7	4.3	5.0	4.7
Range	4.6 to 5.0	3.8 to 4.7	4.0 to 5.2	4.5 to 5.3	4.7 to 5.6

Source: State finances, Statement 27 (A study of Budgets published by Reserve Bank of India)

Comparative statement showed that Bihar's expenditure on health has always been less than All India average.

Availability of funds and expenditure from State budget and NHM in test-checked five DHs are shown below in **Table 2.4**.

Table -2.4
Availability of funds in test-checked DHs and expenditure

(₹ in crore)

Year	Funds available/Allotment		Expenditure		Closing Balance/ Savings	
	NHM	State budget	NHM	State budget	NHM	State budget
2014-15	10.63	23.88	10.04 (94.45)	22.40 (93.80)	0.59	1.48
2015-16	11.78	28.51	11.08 (94.06)	25.12 (88.11)	0.70	3.39
2016-17	10.60	44.77	10.02 (94.53)	38.84 (86.75)	0.58	5.93
2017-18	12.43	61.21	12.00 (96.54)	50.77 (82.94)	0.43	10.44
2018-19	15.39	62.25	14.27 (92.72)	56.83 (91.29)	1.12	5.42
2019-20	14.23	64.14	13.22 (92.90)	52.82 (82.35)	1.01	11.32
Total		284.76	70.63	246.78	4.43	37.98 (13.33%)

(Source: Test-checked DHs)

Extent of utilisation of state budget funds was 71 per cent. Savings could have been utilised towards purchase of medicines, machine and equipment, development of infrastructure where deficiencies were noticed as discussed in other chapters.

In test-checked DHs, against the total allotment (State budget) of ₹284.76 crore during 2014-20, saving was 13 *per cent*. It was noticed that an amount of ₹2.94 crore was allotted to DHs at the fag end of the year (*i.e.* 20 March to 31 March) during 2014-20, which was one of the reasons for under-utilisation of funds. Further, in test-checked DHs, 94 *per cent* of the funds available under NHM during 2014-20 were utilised. Extent of utilisation of state budget funds and NHM funds ranged from 82 to 94 and 93 to 97 *per cent* respectively during 2014-20. Amount from State budget was mainly spent on salary (88 *per cent*), drug (five *per cent*) and equipment (one *per cent*). Amount made available from NHM funds was mainly spent on health services *viz.* maternal health, family planning, immunisation *etc.*

2.1.8.1 Bank Reconciliation Statement

Finance Department, GoB directed (May 2018) that every DDO should prepare Bank Reconciliation Statement (BRS) on monthly basis.

Audit observed that 28 bank accounts were in operation in test-checked DHs during 2019-20. Out of 28 bank accounts, BRS for 13 accounts were not prepared during 2019-20, even though Accountants were posted in all test-checked DHs. Details of balance in cash book *i.e.* cash at bank, cash in hand, temporary advance *etc.* was not prepared at the end of every month in any test-checked DH. Reasons for this were not available.

Further, during 2014-20, five IRs pertaining to four⁶ test-checked DHs, also pointed out non-preparation of BRS. Despite repeatedly pointing out, non-preparation of BRS was still continued. This may be fraught with the risk of financial irregularities including misappropriation.

Other irregularities included more than one bank account in operation for a particular scheme during 2019-20 in DH-Hajipur, non-preparation of annual financial plan by *Rogi Kalyan Samiti* (RKS)⁷ and non-conducting of statutory audit of expenditure incurred by RKS *etc.*

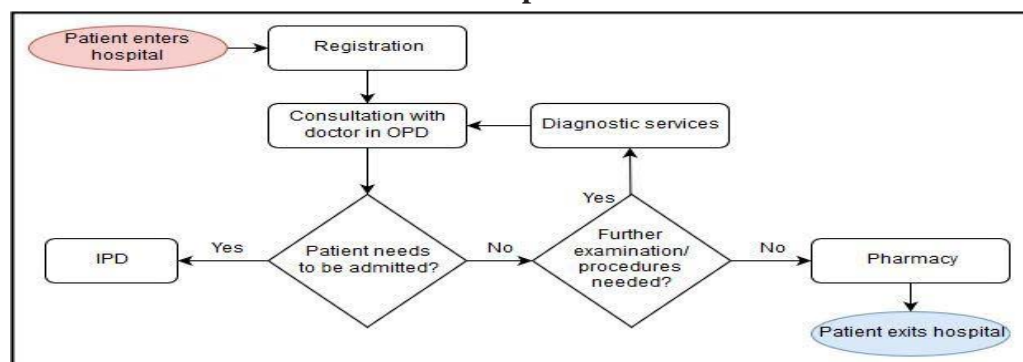
2.2 Out-patient services

To avail OPD services in a DH, a patient first undergoes registration at OPD registration counter, thereafter examination by doctor and prescription of further diagnostic tests and medicines. Subsequently, the doctor follows up the patient or gets the patient admitted in hospital, if required, as shown in **Chart 2.3**.

⁶ DH-Biharsharif, DH-Madhepura, DH-Hajipur and DH-Patna

⁷ The RKS play a supportive and complementary role to the hospital administration in ensuring the provision of universal, equitable and high-quality services, and in ensuring support services in addition to holding the administration accountable keeping the centrality of patient welfare in mind.

Chart 2.3
Flow of out-patient services



2.2.1 Availability of OPD services

NHM Assessor’s Guidebook prescribes 24 types of curative OPD services in DHs. Audit however observed that test-checked DHs did not provide the significant OPD curative services as depicted in **Table-2.5**.

Table 2.5
OPD curative services in test-checked District Hospitals

District Hospitals	Name of services available out of 24 (Number of services available)	Name of services not available out of 24 (Number of services not available)
Biharsharif	General Medicine, Gynaecology, Paediatric, Ophthalmology, ENT Clinic, Orthopaedic procedure, Dental, Dental procedure, Physiotherapy unit, Dressing facility, Injection room facilities (11)	General surgery clinic, ENT procedure, Orthopaedic clinic, Skin & VD clinic, Psychiatry clinic, Ayush clinic and clinics under Super Specialties* services (13)
Hajipur	General medicine, General Surgery, Gynaecology, Paediatric, Ophthalmology, ENT Clinic, Skin &VD, Pshchiatry Clinic, Dental, Dental Procedure, Physiotherapy unit, Dressing facility (12)	ENT procedure, Orthopaedic clinic, Orthopaedic procedure, Ayush clinic, Injection room facility and clinics under Super Specialties* services (12)
Jehanabad	General medicine, General Surgery, Gynaecology, Paediatric, Ayush clinic, Ophthalmology, ENT Clinic, Orthopaedic clinic, Dental, Physiotherapy unit, Dressing facility (11)	Orthopaedic procedure, Skin & VD clinic, Psychiatry clinic, ENT procedure, Dental Procedure, Injection room facility and clinics under Super Specialties* services (13)
Madhepura	General medicine, General Surgery, Gynaecology, Paediatric, Ophthalmology, Orthopaedic clinic, Dental, Dental Procedure, Physiotherapy unit (9)	ENT clinic, ENT procedure, Orthopaedic procedure, Skin & VD clinic, Ayush clinic, Pshchiatry Clinic, Dressing facility, Injection room facility and clinics under Super Specialties* services (15)
Patna	General medicine, General Surgery, Gynaecology, Paediatric, Ophthalmology, Orthopaedic clinic, Skin & VD clinic, Dental, Ayush clinic, Physiotherapy unit (10)	ENT clinic, ENT procedure, Orthopaedic procedure, Psychiatry clinic, Dental Procedure, Dressing facility, Injection room facility and clinics under Super specialties* services (14)

(Source: Test-checked DHs) *Cardiology, Gastro Entomology, Nephrology, Neurology, Endocrinology, Oncology and Nuclear Medicine

It can be seen from **Table -2.5** that test-checked DHs did not provide 12 to 15 significant OPD curative services like Cardiology, Gastro entomology, Nephrology, Endocrinology, Oncology, Skin & Venereal Disease, Psychiatry, Ear, Nose and Throat (ENT) etc., due to shortage of specialist doctors and infrastructure such as building, equipment, furniture and fixture.

SHS in its reply accepted that Cardiac Care Unit, though established in DH-Hajipur, was non-functional at present due to non-availability of Specialist doctor. It further informed that under NHM, 806 specialists were recruited during 2016-2020 but due to high attrition rate only 47 were working in DHs. Health Department also recruited 7031 Medical Officers and 1626 specialists. Despite these efforts, however, fact remained that significant OPD services were not being provided in test-checked DHs due to shortage of specialist doctors and infrastructure.

2.2.2 Patient load in OPD

Out-patient services in DHs were catered through OPD clinics on daily basis. The number of the out-patients attended to in the test-checked DHs is depicted in the **Table-2.6**.

Table-2.6
Number of out-patients in test-checked DHs

Year	Biharsharif	Hajipur	Jehanabad	Madhepura	Patna	Total no. of out-patients	(In lakh)
							Increase (YoY)* (in per cent)
2014-15	3.33	3.84	1.88	1.64	1.41	12.10	-
2015-16	3.42	3.92	1.84	1.42	1.01	11.61	-4
2016-17	3.48	4.15	2.04	1.91	1.00	12.58	4
2017-18	2.74	4.19	2.11	2.36	1.47	12.87	6
2018-19	2.68	6.67	2.46	2.09	1.72	15.62	29
2019-20	2.30	2.11	2.20	2.00	1.42	10.03	-17

(Source: Test-checked DHs) *Year over Year

Table 2.6 shows that there was increase of out-patients during 2016-19 ranging from four to 29 per cent in the test-checked DHs. Out-patient load increased in DH-Jehanabad (17 per cent), DH-Madhepura (22 per cent) and DH- Patna (1 per cent) during 2019-20 as compared to 2014-15. Audit further noticed that despite increase in numbers of patients in OPDs in these three test-checked DHs, average number of doctors available in OPD was almost constant⁸. The increase or decrease in out-patient load was not accompanied by a proportional increase or decrease in the number of doctors available in OPD, resulting in much higher OPD cases per doctor in some hospitals as compared to others, as discussed in *paragraph 2.2.3.1* and less consultation time per patient as discussed in *paragraph 2.2.3.2*.

2.2.3 Evaluation of out-patient services through outcome indicators

NHM Assessor's Guidebook for Quality Assurance provided for evaluation of the services provided in an OPD through certain outcome indicators

⁸ Jehanabad (2016-17 = **Nine**, 2017-18 = **11**, 2018-19 = **10** and 2019-20 = **10**), Madhepura (2016-17 = **10**, 2017-18 = **10**, 2018-19 = **10** and 2019-20 = **Nine**), Patna (**three** doctors were available in OPD during 2014-20), Roster of doctor or year wise number of posting of doctor for OPD was not made available to audit in DH-Hajipur (except 2019-20 = **10**) and Biharsharif (except 2019-20 = 7)

viz. OPD case per doctor, consultation time per patient, which Audit also scrutinised.

2.2.3.1 OPD cases per doctor

OPD cases per doctor is an indicator for measuring efficiency of OPD services in a hospital. The OPD cases per doctor per day are shown in the **Table 2.7** below.

Table-2.7
Average OPD cases per doctor per day during 2019-20

District Hospital	Average number of patient per doctor per day ⁹
Biharsharif	106
Hajipur	68
Jehanabad	71
Madhepura	71
Patna	152

(Source: Test-checked DHs)

The average OPD cases per doctor per day in 2019-20 were 68 to 152 in the test-checked DHs. While the average OPD cases per doctor per day in DH-Hajipur, Jehanabad and Madhepura were 68, 71 and 71 respectively, the average OPD cases per doctor per day were significantly higher in DH-Patna (152) and DH-Biharsharif (106).

Audit also examined the OPD patients load in sampled month (August 2019) of 2019-20 for General Medicine Department and found that the OPD cases per doctor per day in this department was much higher than the overall average OPD cases per doctor per day, as shown in the **Table 2.8**.

Table- 2.8
OPD patient load

District Hospital	Biharsharif	Hajipur	Jehanabad	Madhepura	Patna
Overall average OPD cases per doctor per day	106	68	71	71	152
Average OPD cases per doctor in General Medicine Department	195	205	-	116	108

(Source: Test-checked DHs)

There was high patient load in General Medicine Department in the four test-checked DHs as doctors were not deployed according to patient load. This also resulted in less consultation time per patient in OPD, which is an indicator for measuring clinical care in OPD, as discussed below.

2.2.3.2 Consultation time per patient

NHM Assessor's Guidebook for Quality Assurance in DH provided for evaluation of consultation time to measure clinical care and safety indicators on monthly basis.

⁹ OPD days of year excluding Sundays and holidays (Available OPD days for 2019-20=311)
Formula= (No. of OPD Patient) ÷ (311 x total doctor as per roster)

According to an international study on the length of medical consultation by British Medical Journal (November 2017), 18 countries covering 50 per cent of the world's population have average consultation length of five minutes or less. Such a short consultation length is likely to adversely affect patient care and the workload and stress of the consulting physician. Short consultation length was responsible for driving polypharmacy, overuse of antibiotics and poor communication with patients. This supports the argument that there is a practical limit to how short a consultation can be for routine appointments. Little can be achieved in less than five minutes unless the focus is largely on the detection and management of gross disease. An average of five minutes may be the limit below which consultations amount to little more than triage and the issue of prescriptions.

The average consultation time per patient in General Medicine and Gynaecology Departments was calculated in test-checked DHs by examining the available records of sample month (August 2019).

Table-2.9
Consultation time taken per case in OPD¹⁰ in sampled month (August 2019)

District Hospital	General Medicine				Gynaecology			
	Number of patients given consultation time (in per cent)							
	Total OPD patients in sampled month	less than 3 minutes	3 to 5 Minutes	Above 5 minutes	Total OPD patients in sampled months	less than 3 minutes	3 to 5 minutes	Above 5 minutes
Biharsharif	11,871	11,494 (97)	377 (3)	0	2,254	0	761 (34)	1,493 (66)
Hajipur	5,125	5,125 (100)	0	0	4,301	3,321 (77)	980 (23)	0
Madhepura	9,530	6,230 (65)	2,617 (28)	683 (7)	1,409	0	348 (25)	1,061 (75)
Patna	5,729	2,009 (35)	3,465 (60)	255 (4)	1,506	0	498 (33)	1,008 (67)
Total (per cent)	32,255	24,858 (77)	6,459 (20)	938 (3)	9,470	3,321 (35)	2,587 (27)	3,562 (38)

(Source: Test-checked DHs)

As evident from **Table 2.9** that 97 per cent patients in General Medicine OPD and 62 per cent patients in Gynaecology OPD of test-checked hospitals could avail on an average less than or equal to five minutes of consultation time in the test-checked month during 2019-20. Despite high patient load and low consultation time as mentioned in *paragraph 2.2.3*, concerned DHs did not deploy additional doctors in these OPDs for giving better healthcare service.

2.2.4 OPD Prescription and issue of drugs to OPD patients

(i) According to Health Department, GoB resolution (May 2006 and August 2014), Government is committed to provide drugs free of cost to patients in DH.

Contrary to NHM Assessor's Guidebook, Audit observed that there was no system of retention of a copy of OPD prescription in test-checked DHs during 2014-20. Audit obtained 500 OPD prescriptions from patients and compared

¹⁰ Assuming that a doctor in OPD worked full time, i.e. six hours continuously.

the prescription with the drugs provided by the DHs to the patients during month of July-August 2021. Audit observed that only 41 *per cent* patients¹¹ could fully get prescribed drugs in District Hospitals. Most of the test-checked patients (463 out of 500) were prescribed two to five medicines. Two, three, four and five medicines were prescribed to 106, 145, 148 and 64 patients respectively. However, there-against, only 71 (67 *per cent*), 74 (51 *per cent*), 35 (24 *per cent*) and 13 (20 *per cent*) patients could get the prescribed number of medicines *i.e.* two, three, four and five respectively, as shown in **Table 2.10**.

Table -2.10
Distribution of medicines to OPD Patients

Number of medicines prescribed in five District Hospitals	Number of patients to whom medicine prescribed	Number of medicines distributed									Total Patients
		0	1	2	3	4	5	6	7	8	
1	13	1	12	-	-	-	-	-	-	-	13
2	106	5	30	71	-	-	-	-	-	-	106
3	145	2	15	54	74	-	-	-	-	-	145
4	148	-	21	35	57	35	-	-	-	-	148
5	64	-	4	7	19	21	13	-	-	-	64
6	13	-	-	-	5	3	4	1	-	-	13
7	8	-	-	2	-	2	4	-	-	-	8
8	3	-	1	1	-	1	-	-	-	-	3
Total	500	8	83	170	155	62	21	1	-	-	500

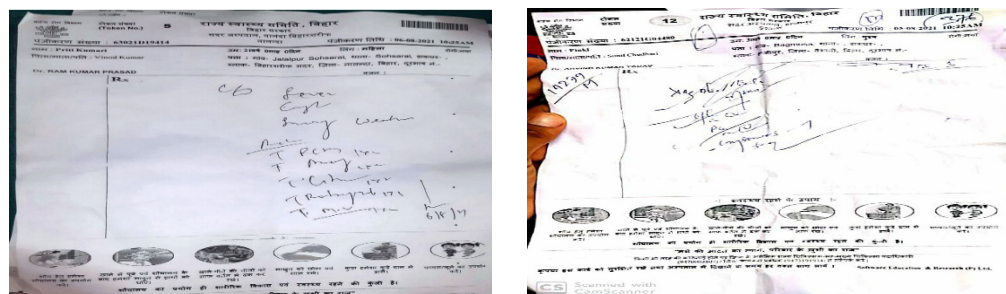
(Source: Test-checked DHs)

Thus, the objective of providing drugs free of cost to patients could not be ensured as 59 *per cent* of the OPD patients purchased drugs from their own pocket.

(ii) According to Indian Medical Council Regulation 2002, every physician should prescribe drugs with generic names, legibly and preferably in capital letters. Illegible handwriting or incomplete writing of a prescription can lead to misinterpretation, thus leading to errors in dispensing and administration of medicine. NHM Assessor's Guidebook also mandates doctors to write patient history, chief complaint and examination diagnosis in OPD slip.

While scrutinising above-mentioned 500 OPD prescriptions, Audit observed lacking in details of ailment (0 to 32 *per cent*), period for which medicine was to be taken by the patients (0 to 55 *per cent*) and clean legible writing on prescription.

¹¹ DH-Biharsharif : out of 100 patients/prescriptions test-checked, 23 got full range of prescribed medicines; DH-Hajipur : out of 100 patients/prescriptions test-checked, 39 got full range of prescribed medicines; DH-Jehanabad : out of 100 patients/prescriptions test-checked, 45 got full range of prescribed medicines; DH-Madhepura : out of 100 patients/prescriptions test-checked, 67 got full range of prescribed medicines; DH-Patna : out of 100 patients/prescriptions test-checked, 32 got full range of prescribed medicines. Thus, out of 500 patients/prescriptions test-checked, 206 got full range of prescribed medicines.



Sample of prescription slips from DH-Biharsharif and DH-Hajipur

2.2.5 Antibiotic policy

As per IPHS, DH shall develop its own antibiotic policy to check indiscriminate use of antibiotics and reduce the emergence of resistant strains. Audit observed that the test-checked DHs did not take any step to develop antibiotic policy during 2014-20. Even any initiation such as formation of any committee of specialist doctors was not done. Further, any direction from higher authority or Department level was not received in this regard. In absence of antibiotic policy, DHs might not have checked indiscriminate use of antibiotics and reduce the emergence of resistant strains.

2.2.6 Registration facility for OPD

NHM Assessor Guidebook estimates the average time required for registration to be 3-5 minutes per patient, which roughly works out to about 20 patients per hour per counter.

Audit examined the number of patients registered during 2019-20 in each test-checked DH along with the availability of registration counter(s) and it was observed that the available registration counter(s) were inadequate in all test-checked DHs as shown in **Table 2.11**.

Table -2.11

Average daily patient load in test-checked DHs during 2019-20

District Hospital	No. of out-patients in DHs	Average daily patient load (Col.2/311 ¹²)	Numbers of registration counter required (Col.3/120 ¹³)	Number of registration counters available	Shortfall (Col. 4-Col.5)	Per counter patient load as per norm	Per counter patient load as existing (Col. 3/ Col. 5)
1	2	3	4	5	6	7	8
Biharsharif	2,29,737	739	6	2	4	120	370
Hajipur	2,10,839	678	6	5	1	120	136
Jehanabad	2,20,036	708	6	3	3	120	236
Madhepura	1,99,677	642	5	3	2	120	214
Patna	1,41,727	456	4	2	2	120	228

(Source: Test-checked DHs)

¹² OPD days in 2019-20 (excluding Sundays and Holidays)

¹³ Considering 6 hours in a day working of registration counter and 20 registrations in one hour


As a result, patient load on registration counters in all test-checked DHs was 13 per cent (DH-Hajipur) to 208 per cent (DH-Biharsharif) higher than the norm.

2.2.7 Basic facilities in OPD

As per IPHS norms, the OPD areas should have amenities like potable drinking water, toilets, fans and seating arrangements as per patient load.

In test-checked DHs, basic public amenities such as drinking water, fan, separate toilets/bathrooms for male and female, chairs *etc.* in OPD and registration area were deficient as shown in the **Table 2.12**.

Table-2.12
Deficient public amenities in registration area and OPD

Registration area		OPD area	
Items	Deficient District Hospitals	Items	Deficient District Hospitals
Water Purifier	Biharsharif, Hajipur, Jehanabad, Madhepura and Patna	Drinking water facility	Hajipur, Jehanabad, Madhepura and Patna
Fan	Hajipur	Toilet	Patna
Bathroom (Female)	Biharsharif, Jehanabad, Patna, Madhepura and Hajipur	Suitable seating facilities	Hajipur
Bathroom (Male)	Jehanabad, Patna, Madhepura and Hajipur		
Toilet (Female)	Biharsharif, Patna, Madhepura and Hajipur		
Toilet (Male)	Patna, Madhepura, and Hajipur		
Chair	Hajipur, Madhepura and Patna		

(Source: Information provided by test-checked DHs)

Audit noted that deficiency of public amenities in registration area was due to absence of any norm in this regard, whereas, deficiency of public amenities in OPD area was attributable to absence of gap analysis by District Hospitals and corresponding corrective measures.

2.2.8 Patient continuity of care

NHM Assessor's Guidebook requires that hospital should have established procedure for handing over of patients during departmental transfer and procedure for consultation of the patient to other specialist within the hospital. Further, DH also provides appropriate referral linkages for transfer to other higher facilities for OPD consultation. Requirement of these systems is

meant for continuity of care to OPD patients during OPD treatment in case other departmental treatment needed. Audit, however, observed absence of established procedure for continuity of care to OPD patients in test-checked DHs during 2014-20.

2.2.9 Mobile Medical Unit and Telemedicine facility

As per 12th five year plan, for ensuring access to the healthcare to population, the existing mobile medical units would be expanded to have a presence in each CHC.

Contrary to 12th five-year plan document, Audit observed that none of the test-checked DHs had mobile medical units. Consequently, goal of the 12th five-year plan remained unachieved.

No specific reply was furnished by SHS.

2.2.10 Grievance redressal

For effective redressal of grievances of patients, NHM Assessor's Guidebook envisages a mechanism for receipt of complaints, registration of complaints and disposal of complaints on a first-come-first-serve basis, noting of action taken in respect of complaints in a register, periodic monitoring of system of disposals and follow-up by superior authorities as necessary.

None of the test-checked DHs had defined mechanism for registration and disposal of complaint case including maintenance of complaint register and provision of complaint box. However, DH-Biharsharif maintained a complaint register only for the period of 2017-18 and had disposed all 20 complaint cases. In absence of records of grievance redressal and complaint register, it could not be verified whether these hospitals properly attended to the complaints of the patients.

SHS replied that since 30 March 2016, centralised grievance redressal system 104 call centre was functional and up to 30 June 2021, 10510 grievances were received. Reply was not specific to the District Hospital. Moreover, details about grievances redressed were not furnished.

2.3 Diagnostic Services

2.3.1 Diagnostic services (Radiology, Pathology and Laboratory)

GoB committed (August 2010) to provide pathological and radiological test services free of cost in government hospitals. Further, as per IPHS, laboratory of a District Hospital should be able to perform all tests required.

2.3.1.1 Availability of diagnostic service

Audit observed that none of the test-checked DHs provided all the required diagnostic facilities, as detailed in **Table 2.13, Appendix 2.1 and 2.2.**

Table 2.13
Details of hospital-wise categories and types of diagnostic test provided during 2014-20

Name of the DHs	Out of required 14 Categories and 121 number of Diagnostic tests			
	Categories of tests available	Number of tests (per cent) available	Categories of tests not available	Number of tests (per cent) not available
Biharsharif	8	39 (32)	6	82 (68)
Hajipur	9	40 (33)	5	81 (67)
Jehanabad	8	37 (31)	6	84 (69)
Madhepura	8	31 (26)	6	90 (74)
Patna	7	36 (30)	7	85 (70)

(Source: Information provided by test-checked DHs)

Out of required 121 diagnostic facilities, maximum availability was in DH-Hajipur, which was only 33 per cent while DH-Madhepura offered minimum diagnostic services, which was 26 per cent. Unavailability of diagnostic services ranged between 67 and 74 per cent. Five to seven out of 14 categories of diagnostic services were completely unavailable in test-checked DHs. Besides, in DH-Madhepura though Ultra-Sonography (USG) machine was installed (March 2019), the USG service was not ensured due to lack of technician and radiologist.

Further, radiology facilities beyond OPD hours and for emergency cases were not available in DH Patna. Also, limited blood tests for labour patients were ensured through blood bank in DH-Jehanabad, DH-Madhepura and DH-Hajipur. In DH-Biharsharif, pathology service was available on call. The unavailability of diagnostic services beyond OPD hours and in emergency was mainly attributable to shortage of manpower.

SHS replied (September 2021) that pathology services were being provided as in-house mode through Semi-Auto-analyser & 3-Part Blood Cell Counter machines catering 41 out of 121 tests. No specific reply was furnished regarding providing radiology services beyond OPD hours in District Hospitals. Reply corroborated audit observation.

2.3.2 Infrastructure for Diagnostic Services

2.3.2.1 Equipment for Diagnostic Services

IPHS envisages that DH should have essential and desirable equipment¹⁴ for diagnostic services as per the bed strength of the hospital.

Audit observed that none of the test-checked DHs had all essential equipment/machines for diagnostic services and shortage ranged from 62 to 82 per cent. None of the test-checked DHs had desirable equipment available with them

¹⁴ Up to 200 bedded district hospitals, 69 and 12 types of equipment, for 201 to 300 bedded district hospitals, 74 and 8 types of equipment whereas for 301 to 500 bedded district hospitals, 83 and 7 types of equipment is required as essential and desirable respectively.

except DH-Jehanabad, where such equipment were available only in two¹⁵ out of five categories. Overall shortage in the availability of equipment in five categories¹⁶ of diagnostic services ranged from 66 to 84 *per cent*. None of the five test-checked DHs had diagnostic facility for endoscopy. In DH-Jehanabad, there was no cardiopulmonary department. Eight equipment were non-functional at DH-Jehanabad. Requirement and availability of equipment in test-checked DH is detailed in *Appendix-2.3*.

Further, none of the test-checked DHs had executed Annual Maintenance Contract (AMC) of diagnostic equipment to keep them in working condition. Also, none of the test-checked DHs maintained records related to down time of the diagnostic equipment.

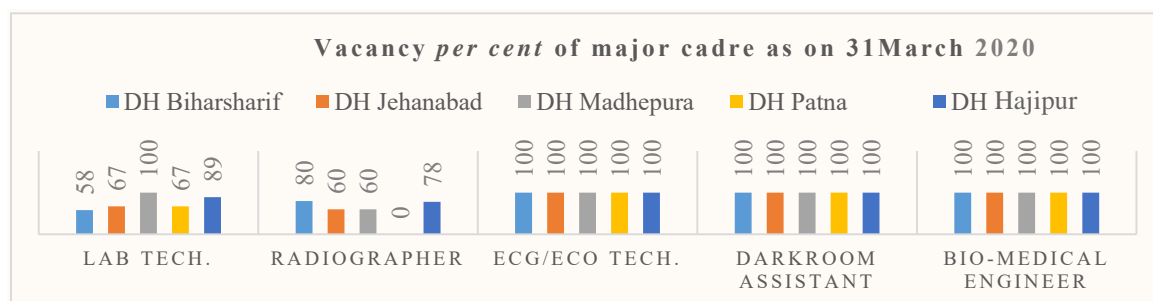
SHS replied (September 2021) that provision of AMC was included in contract agreement under PPP mode and also for the new 300 mA X-ray machines and laboratory equipment for providing pathological services. Reply of SHS itself is acceptance of the fact that AMC was only for new equipment/ equipment of outsourced services.

2.3.2.2 Availability of Technicians

As per IPHS, technicians should be available as per the bed strength of the hospital (*Appendix-2.4*).

Audit observed in test-checked DHs that shortage of Lab Technicians (LTs) ranged from 58 to 100 *per cent*. Shortage of other technicians such as radiographer, ECG/ECO technician, darkroom assistant and bio-medical engineer ranged from 60 to 100 *per cent*. However, in DH-Patna, surplus radiographer was posted. There was no EEG and Cyto technician in test-checked DHs (except DH-Patna¹⁷). Details are shown in **Chart 2.4** below:

Chart 2.4



(Source: Test-checked DHs)

Thus, the concerned diagnostic services were unavailable at the respective DHs and consequently, unavailability of quality laboratory and radiology services may be contributing to delayed or inappropriate responses to disease control and patient management. This also results in continued reliance on irrational diagnostic prescription, practices that waste scarce resources and

¹⁵ *Laboratory and Imaging*

¹⁶ *Imaging, X-ray, cardio pulmonary, laboratory and endoscopy*

¹⁷ *In DH- Patna, it was not required as per norms*

in contrary to the GoI decision to reduce high out-of-pocket expenditure, the poor who access public healthcare facilities may have compelled to ensure the diagnostic services from the outside, which increases his out-of-pocket, expenditure also.

SHS replied (September 2021) that pathology services were being provided by the Lab-Technicians deputed at the healthcare facility from PHCs to District Hospitals level as in-house mode inclusive of five test-checked districts. Reply is not tenable as despite posting staff on deputation, still there was shortage.

2.3.2.3 Adherence to safety norms

Hospital, while providing radiological diagnostic services, must adhere to the safety and regulatory norms to protect healthcare professionals and patients from detrimental effects of radiation.

A. Size of X-ray unit: As per Atomic Energy Regulatory Board (AERB) safety code, room size of X-ray unit should not be less than 18 square metre and any dimension should not be less than 4 metre. Audit observed that X-ray was being provided in the room having dimension as per the norms in the all test-checked DHs. However, in DH-Jehanabad, X-ray unit was running in a condemned building during 2014-20 and during joint physical verification, it was observed that the same is shifted to De-Addiction Centre and there was no dedicated X-ray room. Consequently, the De-Addiction Centre became non-functional.

B. Safety measures for conducting Radiology services: NHM Assessor's Guidebook and IPHS provide for safety measures and regular training of healthcare workers for conducting radiology services. Audit observed that none of the test-checked DHs had ensured the safety norms. However, in DH-Biharsharif, Thermo-luminescent Dosimeter (TLD) badges and lead apron were being used and in rest of the test-checked DHs, Face shield and apron were being used. Besides, training on radiation safety to staff handling radiology machine was also not imparted in test-checked DHs.

SHS replied (September 2021) that provision of adherence to safety measures has been made in X-ray services to be provided under PPP mode and In-house mode. Appropriate AERB approvals are taken and the service providers are adhering to AERB guidelines from procurement of X-ray machines to providing X-ray services.

2.3.2.4 Hemodialysis services

As per IPHS, hemodialysis service is an essential service and should be available in all DHs. SHS executed agreement with an agency¹⁸ (March 2014) for 16 DHs¹⁹ to provide hemodialysis services. However, dialysis services

¹⁸ B. Braun Medical (India) Pvt. Ltd., Mumbai

¹⁹ Madhubani, Sheikhpura, Gopalganj, Buxar, Samastipur, Arwal, Motihari, Lakhisarai, Supaul, Jamui, Arariya, Banka, Bhojpur, Aurangabad, Siwan and Sheohar

could be commenced only in 12²⁰ out of 16 DHs till June 2015 and in four²¹ DHs, the services could not be made available due to unavailability of space. Reason for non-execution of agreement to ensure availability of services at remaining 19 DHs (53 per cent) was not available. Thus, people of remaining 23 (19+4) districts were deprived of the intended benefits of the hemodialysis facilities.

SHS replied (September 2021) that the Dialysis units are now functional in rest four DHs *i.e.* Bhojpur, Aurangabad, Siwan and Sheohar along with 12 Hospitals, which were already functional at the time of audit. At present, the Dialysis Units are established and functional in 35 Districts (30 DHs and 5 Medical College & Hospitals) under PPP mode. In rest three districts *i.e.* Jehanabad, Saharsa and Katihar, the Dialysis Units could not be established due to non-availability of space in existing building. As of now, new buildings are being constructed in DH-Saharsa and DH-Katihar and alternative space/building is being searched in Jehanabad. After construction of new building and suitable alternative space/building, it will be possible to establish Dialysis unit in these district hospitals.

2.3.3 Quality Assurance

Contrary to NHM - Free Diagnostic Service Initiative, Audit observed that:

- A. Test-checked DHs did not have any Standard Operating Procedure (SOP) for quality assurance regarding diagnostic and periodic calibrations of all diagnostic equipment. They also did not conduct external quality assurance for available diagnostic tests and calibration of laboratory equipment.
- B. There was no system for cross-checking of diagnostic results with identified reference laboratories and none of the DHs had got the lab reports externally validated during 2014-20. However, DH-Jehanabad stated that once X-ray service was validated during the period but failed to provide any details thereof.

SHS replied (September 2021) that SOP was issued (March 2016) to all 38 districts of the State. Further, SHS had directed (November 2015) to ensure participation of DH laboratories in external quality assurance through AIIMS, New Delhi. Reply is not tenable as District Hospital did not have SOP. Also, direction regarding external quality assurance was not in practice in test-checked DHs.

2.3.4 Other significant shortcomings

- A. Contrary to IPHS norm and NHM Assessor's Guidebook, test-checked DHs did not maintain records related to time of collection of sample/

²⁰ Madhubani, Sheikhpura, Gopalganj, Buxar, Samastipur, Arwal, Motihari, Lakhisarai, Supaul, Jamui, Arariya and Banka. In Nalanda, which was not in selected hospital but service was commenced in place of VIMS, Pawapuri

²¹ DHs at Bhojpur, Aurangabad, Siwan and Sheohar.

investigation done/report generated for diagnostic services during sampled weeks²², average waiting time at sample collection area for laboratory testing and for radiological diagnosis. Resultantly, turnaround time and waiting time could not be ascertained.

B. Test-checked DHs did not raise any specific demand for funds to run the diagnostic services despite shortcomings therein. It was noticed in DH-Jehanabad that due to shortage of funds under NHM, the radiology services were not provided during April 2017 to June 2018²³.

2.4 In-patient services

Indoor Patients Department (IPD) refers to the areas of the hospital where patients are accommodated after being admitted, based on doctor's/specialist's assessment.

2.4.1 Availability of in-patient services

As per NHM Assessor's Guidebook, a DH should provide in-patient services pertaining to General Medicine, General Surgery, Ophthalmology, Orthopedics etc. Audit observed that the required services were not available in the test-checked DHs as of March 2020 as illustrated in **Table 2.14**.

Table -2.14
In-patient services in District Hospitals (March 2020)

District Hospital	Act*	Burn	Dia	GM	GS	Oph	Orth	Phy	Psy
Biharsharif	N	N	Y	Y	N	Y	N	Y	N
Hajipur	N	Y	N	N	Y	Y	N	N	N
Jehanabad	N	N	N	Y	N	N	N	Y	N
Madhepura	N	N	N	N	Y	Y	N	N	N
Patna	N	N	N	Y	Y	N	Y	N	N

*Act: Accident and Trauma ward, Burn: Burn ward, Dia: Dialysis, GM: General Medicine, GS: General Surgery, Oph: Ophthalmology, Orth: Orthopaedics, Phy: Physiotherapy, Psy: Psychiatry

Source: Test-checked DHs (N-No and Y-Yes)

IPD facilities like Accident and Trauma (all test-checked DHs), Burn care (except DH-Hajipur), Dialysis (except DH-Biharsharif), Orthopaedics (except DH-Patna) and Psychiatry (all test-checked DHs) were not available due to shortage of human resource and lack of infrastructure. In absence of required IPD facilities, patients were bound to get themselves treated in private hospitals or tertiary care hospitals where these services were available.

Further, in DH-Jehanabad, 10 bedded de-addiction Centre and six bedded Geriatric ward (since inception from August 2019) was non-functional due to shifting of X-ray service from condemned room and lack of doctor respectively. Further, during joint physical verification (August 2021), it was observed that 40 beds of ophthalmic department were stacked one over the other in the

²² 1st-7th May 2014/August 2015/November 2016/February 2018/ May 2018/August 2019

²³ X-ray from April 2017 to March 2018 and USG 26.4.2018 to 8.6.2018

verandah and respective rooms were used for the office purposes due to lack of infrastructure.

Superintendent/Deputy Superintendent of DH-Biharsharif and DH-Jehanabad accepted Audit findings and assured (January-February 2020) that efforts would be taken and correspondence would be made with higher authorities to facilitate the services. Reply was not convincing as NHM Assessor's Guidebook was published in 2013 and these district hospitals came into existence much before 2013²⁴, but Audit did not find any gap analysis on record to ensure IPD services as per the standard.

2.4.2 Availability of human resources in DHs

2.4.2.1 Availability of Doctors

IPHS envisages that doctors and nurses should be available round the clock in IPD to provide due medical care to the in-patients. The person-in-position (PIP) of doctors/specialists in test-checked DHs and shortage with respect to IPHS norms are given in **Table 2.15**.

Table -2.15
Shortage of doctors/specialists in test-checked DHs

District Hospital	Sanctioned beds	No. of doctors required as per IPHS	PIP as on March 2020	Shortage in comparison to IPHS	Percentage of shortage as compared to IPHS
Biharsharif	300	50	22	28	56
Hajipur	500	68	29	39	57
Jehanabad	300	50	32	18	36
Madhepura	300	50	20	30	60
Patna	100	32	20	12	37
Total	1500	250	123	127	51

(Source: Test-checked DHs)

Thus, there was shortage of doctors ranging between 36 and 60 *per cent* in all five test-checked DHs. Further, IPHS prescribes for posts of specialists for different departments based on bed capacity of a DH.

Audit noted 48 to 80 *per cent* shortage of specialists *vis-a-vis* IPHS norms in test-checked DHs as of March 2020 as shown in **Table 2.16**.

²⁴ Biharsharif- before 2009, Hajipur- 1973, Jehanabad- 1989, Madhepura- before 2009 and Patna- July 2018

Table-2.16
Requirement and shortage of specialists in test-checked DHs

District Hospital (No. of sanctioned beds)	Number of Specialist required as per IPHS	Details of shortage of different specialists
Biharsharif (300)	35	Medicine (3), Surgery (3), Pediatrics (3), Anesthesia (2), Orthopedics (1), Radiology (2), Pathology (2), ENT (1), Dental (1), Dermatology (1), Psychiatry (1), Microbiology (1), Forensic specialist (1), AYUSH (1) Total shortage –23 (66 per cent)
Hajipur (500)	45	Medicine (3), Surgery (2), Obstetrics & Gynae (2), Pediatrics (4), Anesthesia (4) Ophthalmology (1), Orthopedics (1), Radiology (1), Pathology (3), Dental (1), Forensic specialist (1), AYUSH (1) Total shortage –24 (53 per cent)
Jehanabad (300)	35	Medicine (2), Surgery (2), Obstetrics & Gynae (2), Pediatrics (3), Anesthesia (2), Orthopedics (1), Radiology (2), Pathology (3), ENT (1), Dental (2), Dermatology (1), Microbiology (1), Forensic specialist (1), AYUSH (1) Total shortage –24 (69 per cent)
Madhepura (300)	35	Medicine (3), Surgery (2), Obstetrics & Gynae (4), Pediatrics (3), Anesthesia (2), Orthopedics (2), Radiology (2), Pathology (3), ENT (1), Dental (1), Dermatology (1), Psychiatry (1), Microbiology (1), Forensic specialist (1), AYUSH (1), Total shortage –28 (80 per cent)
Patna (100)	21	Medicine (1), Pediatrics (1), Anesthesia (1), Ophthalmology (1), Pathology (1), ENT (1), Psychiatry (1), Microbiology (1), Forensic specialist (1), AYUSH (1) Total shortage –10 (48 per cent)

(Source: Test-checked DHs)

None of the test-checked DHs had specialists of AYUSH, Microbiology (except DH-Hajipur) and Forensic. Further, shortage of doctors in turn affected the bed wise availability of doctors in IPD as discussed in paragraph below.

2.4.2.2 Rosters for doctors

To ascertain the availability of doctors in IPD, Audit requisitioned the roster of doctors. DH-Biharsharif, DH-Hajipur and DH-Patna, did not provide the doctors' roster for the period 2019-20, but stated that three to four doctors were available in 300 and 120 bedded IPD in DH-Biharsharif and DH-Hajipur respectively and two doctors in each shift were available in 100 bedded DH-Patna. In absence of doctors' roster, actual availability of doctors for the IPD in these test-checked DHs could not be ascertained. Further, Audit observed that as per roster, three to four doctors were available in 97 bedded IPD in DH-Jehanabad, while only one to two doctors were available in 91 bedded IPD in DH-Madhepura during 2019-20. It was observed that in night shift, less doctors were deployed in IPD in comparison to day shift. In day time, other doctors were also available in hospitals for OPD services. IPD services may be managed by engaging these doctors if found necessary. However, night care IPD facilities in particular were deficient in terms of availability of doctors.

2.4.2.3 Nurses and Paramedics

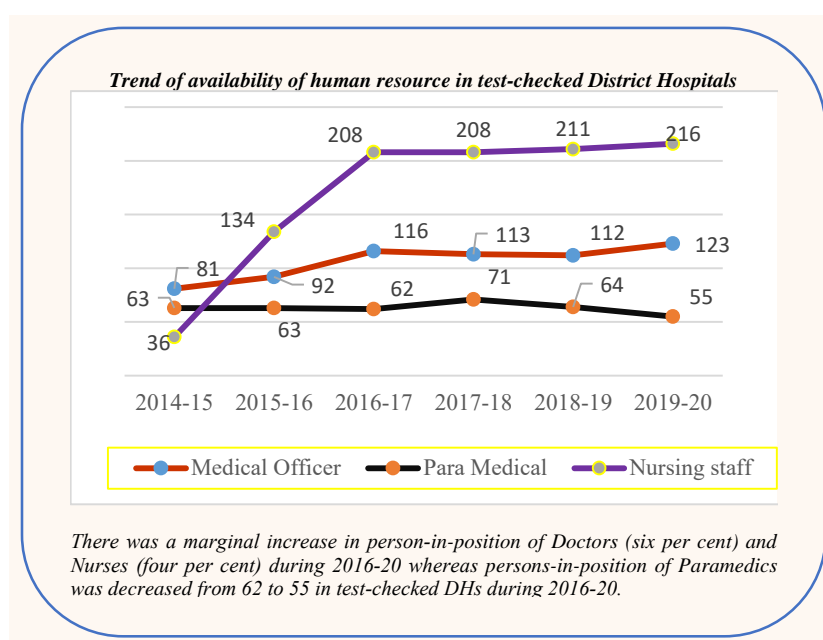
IPHS prescribes for various posts of staff nurse and paramedics in a DH according to their bed capacity. Audit noticed shortages of paramedics and staff nurses in test-checked DHs as of March 2020 in comparison to IPHS norms as given in **Table 2.17**.

Table-2.17
Sanction strength, PIP and shortages of Paramedics and Staff Nurse

District Hospital	Sanctioned beds	Strength required as per IPHS norms		Person-in-position		Shortage as per IPHS norms (per cent)	
		Paramedics	Staff Nurse/ ANM	Paramedics	Staff Nurse/ ANM	Paramedics	Staff Nurse/ ANM
Biharsharif	300	66	135	14	50	52 (79)	85 (63)
Hajipur	500	100	225	8	36	92 (92)	189 (84)
Jehanabad	300	66	135	13	54	53 (80)	81(60)
Madhepura	300	66	135	12	34	54 (82)	101 (75)
Patna	100	31	45	8	41	23 (74)	4 (9)
Total	1,500	329	675	55	215	274(83)	460(68)

(Source: Test-checked DHs)

It is evident from **Table-2.17** that shortages of paramedics ranged between 74 and 92 per cent whereas shortage of Nurses was between nine and 84 per cent in test-checked DHs. Category wise shortage of paramedics has been detailed in **Appendix 2.5**. Thus, DHs had acute shortage of Paramedics and Nurses, which were very essential for the smooth functioning of concerned departments of DHs. Further, shortage of Nurses in turn affected the bed wise availability of Nursing Staff in DHs as discussed in succeeding **paragraph 2.4.2.4**.



SHS, in its reply claimed that 9,586 Nursing staff were recruited by Health Department. However, the reply of SHS was not accompanied with information such as year of recruitment and details of their posting in DHs. According to Economic Survey of Government of Bihar, only 30,455 (53 per cent) Nurses were posted in Bihar against the sanctioned strength of 57,849.

2.4.2.4 Bed to nurse ratio

IPHS envisages one nurse per six beds in the general ward of a DH. The details of beds against one nurse in test-checked DHs²⁵, where rosters for duty of nurses in IPD were maintained in 2019-20 are as shown in **Table 2.18**.

Table 2.18
Beds against one nurse in IPD

Shift	Biharsharif	Hajipur	Madhepura	Jehanabad
Shift-I (8AM to 2PM)	27	9	9	7
Shift-II (2PM to 8PM)	33	13	18	11
Shift-III (8PM to 8AM)	30	19	18	11

(Source: Test-checked DHs)

Thus, except for Shift-I in DH-Jehanabad, none of the test-checked DHs complied with the IPHS norms in respect of nursing care. Bed to nurse ratio in DH-Biharsharif and DH-Madhepura was very high which indicated inadequate and uneven distribution of nursing resources among DHs.

2.4.3 Availability of essential drugs and equipment

2.4.3.1 Availability of Drugs for IPD

To ascertain the availability of essential drugs in the IPD, Audit examined availability of 14 types (**Appendix-2.6**) of essential drugs prescribed in the NHM Assessor's Guidebook during the sampled months of 2014-20. Against this, there was shortage of drugs with test-checked DHs as depicted in **Table 2.19**.

Table -2.19
Availability of types of essential drugs (out of 14 types) in IPD

District Hospital	May 2014	August 2015	November 2016	February 2018	May 2018	August 2019	Average availability of essential drugs	Shortage of essential drugs (per cent)
Biharsharif	11	10	9	10	10	10	10	4 (29)
Hajipur	7	8	6	7	4	9	7	7 (50)
Jehanabad	5	5	7	7	7	9	7	7 (50)
Madhepura	11	10	9	11	11	9	10	4 (29)
Patna	RNA*	RNA	RNA	8	6	10	8	6 (43)

(Source: Test-checked DHs)*RNA-Record not made available

As shown in **Table 2.19**, the average shortage of essential drugs in IPD ranged between 29 and 50 per cent in test-checked DHs. Non-availability of some of

²⁵ DH-Patna did not make available the roster of nurses for the period 2019-20 though requisitioned.

the essential drugs such as Adrenaline and Salbutamol (used in anti-asthmatic and chronic obstructive pulmonary disease), Activated Charcoal (antidotes and other substances used in poisoning) and Anti Snake Venom *etc.* in the IPD of the test-checked DHs in sampled months indicated possibility of purchase of essential drugs by the patients from outside.

SHS replied that to ensure availability of essential drugs in the IPD, GoB has set up (May 2010) BMSICL and 80 *per cent* of GoB budget for procurement of drugs was allocated to BMSICL to ensure uninterrupted and timely supply of drugs and consumables to the health facilities across the State. For the vision of 'NHM free drugs initiative' to get realised, districts had been empowered to purchase generic and EDL drugs locally as per their requirement and within their limits of 20 *per cent* of the allocated budget.

Though, reply of SHS was factually correct, but fact remained that test-checked DHs suffered from shortage of drugs.

2.4.3.2 Availability of Equipment for IPD

Audit observed that during 2019-20, out of the sampled 15 types (*Appendix-2.6*) of essential equipment as prescribed in NHM Assessor's Guidebook, seven to 14 types of functional equipment were available in test-checked DHs as shown in **Table- 2.20**.

Table -2.20
Availability of essential equipment in IPD during 2019-20

District Hospital	Availability of essential equipment out of 15	Name of essential equipment not available (<i>per cent</i>)
Biharsharif	13	Dressing Trolley and ET Tubes - 2 (13)
Hajipur	13	Dressing Trolley and Foetoscope -2 (13)
Jehanabad	7	Baby Bag and Mask, Doppler, Dressing Trolley, ET Tubes, Glucometer, Laryngoscope, Oxygen flow meter and Weighing scale for adult -8 (53)
Madhepura	9	ET Tubes, Foetoscope, Doppler, Laryngoscope, Weighing scale for adult and Weighing scale for baby-6 (40)
Patna	14	Doppler -1(7)

(Source: Test-checked DHs)

As evident from **Table 2.20**, major shortage of equipment was noticed in DH-Jehanabad (53 *per cent*) and DH-Madhepura (40 *per cent*). Dressing Trolley, ET Tubes (used in resuscitation) and Doppler (used in examination & monitoring of patients) were not available in three test-checked DHs. Further, none of the test-checked DHs executed an AMC for IPD equipment although 10 equipment/apparatus like Suction Machine, BP apparatus, Oxygen Flow Meter and ET Tubes were in non-functional condition in DHs-Jehanabad, Madhepura and Patna.

SHS informed that a Technical Core Committee had been constituted to identify and prepare the facility wise and requirement-based list of essential equipment

as per IPHS norms and MCI standard. BMSICL had been instructed to maintain the annual contract for maintenance of equipment lying at health facilities.

2.4.4 Generic Medicine

NHM Assessor's Guidebook and GoB (January 2007) prescribe prescription of drugs in generic name only. Indian Medical Council Regulations, 2002 envisages prescription of drugs with generic names, legible and preferably in capital letters.

Scrutiny of 380²⁶ Bed Head Tickets (BHTs) in the test-checked DHs during sampled²⁷ week of 2016-20 disclosed that total 1,374 drugs were prescribed to indoor patients, out of which names of only 647 (47 per cent) drugs were legible. It was noticed that 560 drugs were from EDL and were prescribed with generic name out of total legible 647 drugs. Further, no drug was written in capital letters against the norms of Indian Medical Council Regulation.

Though, SHS in its replies claimed that Health Department and State Health Society had already issued direction to doctors of Government health facilities of the State to prescribe drugs with generic name. However, Audit noticed instances of violation of this direction in test-checked DHs.

2.4.5 Positive and negative isolation wards

NHM Assessor's Guidebook prescribes that DHs should have positive²⁸ and negative²⁹ isolation wards. Immune compromised patient like AIDS, Cancer, Type I diabetes, Leukemia, Asthma, Rheumatoid arthritis and genetic disorder requires positive isolation room. Further, patients affected with Tuberculosis, Measles and other infectious patient (Flu) required negative isolation. Audit observed that positive and negative isolation wards were not available in any of the test-checked DHs. Details of patients admitted in DHs, which required positive and negative isolation facility were not maintained. Thus, DHs did not ensure segregation of infectious patient for the sake of public and patient safety.

In its reply, SHS informed that they are planning for installation of Air Handling Units at District Hospitals to maintain positive and negative air pressure. Reply corroborated audit observation. SHS further informed that several isolation wards were designated during Covid-19 pandemic to ensure public safety.

²⁶ DH-Biharsharif:105, DH-Hajipur:87, DH-Jehanabad:45, DH-Madhepura:119 and DH-Patna:24.

²⁷ BHTs of sampled weeks during 2016-19 in DH-Patna was not available, BHTs of sampled week of 2018-19 was not available in DH-Jehanabad and BHTs of sampled week of 2016-17 was not made available in DH-Hajipur.

²⁸ Positive room air pressure, where an immune-compromised patient is protected from airborne transmission of any infection.

²⁹ Negative room air pressure, where others are protected from any airborne transmission from a patient who may be an infection risk.

2.4.6 Operation Theatre services

IPHS guidelines prescribe Operation Theatre (OT) for elective major surgeries, emergency services and ophthalmology/ENT for District Hospitals having bed strength of 101 to 500. Availability of different types of OT services is shown in **Table -2.21**.

Table 2.21
Availability of OTs during 2019-20

District Hospital	OT for elective major surgeries	OT for emergency surgeries	OT for ophthalmology/ENT
Biharsharif	Yes	No	Yes
Hajipur	Yes	No	Yes
Jehanabad	No	No	No
Madhepura	No	No	Yes
Patna	No	No	No

(Source: Test-checked DHs)

As evident from **Table 2.21**, out of five test-checked DHs, OT for elective major surgeries was not available in three DHs. OT for emergency surgeries was not available in any test-checked DHs and OT for ophthalmology/ENT was not available in two test-checked DHs. Poor availability of surgical facilities in test-checked DHs was due to non-availability of required manpower and equipment. Non-availability of different types of OTs would have an effect to deny patients from receiving surgical operations as part of the treatment process, thereby driving them to private clinics, or referral to higher Government hospitals.

No specific reply to this audit observation was furnished.

2.4.7 Surgeries per surgeon

As per NHM Assessor's Guidebook, surgeries performed per surgeon is an indicator to measure efficiency of the hospitals. Audit observed deficiency in continuity of care, which was evident from absence of any system to capture the details of patients referred from OPD for general surgeries. Therefore, details regarding number of surgeries required to be performed in DHs were not available and hence it was difficult to monitor also.

Analysis of the records of surgeries conducted on the basis of a sample of the last quarter of 2019-20 in the test-checked DHs, disclosed variations in number of surgeries performed per surgeon in the test-checked DHs, as shown in **Table -2.22**.

Table- 2.22
Surgeries per surgeon

District Hospital	Number of surgeons in DH (last quarter of 2019-20)	Surgeries performed per surgeon			Eye surgeries performed per surgeon (Cataract surgeries)	
		General		ENT		Orthopedics
		Major	Minor			
Biharsharif	1	1	3	Facility was not available	71	
Hajipur	2	0	49	Facility was not available	42	
Jehanabad	1	17	25	Facility was not available	0	
Madhepura	1	20	24	Facility was not available	55 (2 doctor)	
Patna	2	42	77	Facility was not available	37 (Minor) (2 doctor) Facility was not available	

(Source: Test-checked DHs)

As evident from **Table 2.22**, facilities for ENT and Orthopedics (except DH-Patna) surgeries were not available in the test-checked DHs. Only one major and three minor General surgeries per surgeon were performed in DH-Biharsharif and no major General Surgery were performed in DH-Hajipur despite having two surgeons. Cataract surgery was not performed in DH-Jehanabad and facility for the same was not available in DH-Patna. Thus, less number of major surgeries performed indicate that patients could have been deprived of treatment in DH-Biharsharif and DH-Hajipur. Poor status in test-checked DHs may be attributed to shortage of manpower, drugs, consumables and equipment for OT.

No specific reply to this audit observation was furnished.

2.4.8 Availability of drugs and equipment for OTs

2.4.8.1 Availability of Drugs for OT

Audit examined availability of 22 types (**Appendix-2.6**) of drugs as prescribed in NHM Assessor's Guidebook during 2014-20 for OTs in the test-checked DHs and observed significant shortage of the essential drugs as shown in **Table 2.23**

Table- 2.23
Availability of essential drugs in OTs

District Hospital	May-14	Aug-15	Nov-16	Feb-18	May-18	Aug-19	No. of average available essential drugs	Shortage in number of essential drugs (per cent)
Biharsharif	5	5	5	7	7	12	7	15 (68)
Hajipur	RNA*	RNA	6	7	6	2	5	17 (77)
Jehanabad	7	6	7	9	9	9	8	14 (64)
Madhepura	8	5	8	9	9	10	8	14 (64)
Patna	0	0	0	0	0	13	2	20 (91)

(Source: Test-checked DHs) (*RNA-Record not made available)

As shown in **Table 2.23**, the shortage of essential drugs in OTs ranged between 64 and 91 *per cent* in test-checked DHs. Thus, poor availability of drugs in OT indicated possibility of purchase of essential drugs by the patients from outside. Further, scrutiny of indents of DH-Biharsharif revealed that out of shortage of 10 drugs during sampled month (August 2019), indent for nine drugs was not made and indent for only one drug (Inj. Metronidazole) was made but not supplied to OT. In DH-Jehanabad, out of shortage of 13 drugs during August 2019, indent for 12 drugs was not made whereas indent for only one (Inj. Gentamycin) drug was made but not supplied to OT. No indent was made available by DH-Hajipur. Thus, even demand for unavailable drugs was not made.

2.4.8.2 Availability of Equipment for OT

IPHS guidelines prescribes 25 types (**Appendix -2.6**) of equipment for OTs for DH with bed-capacity up to 300 beds. Availability of these equipment during 2019-20 in test-checked DHs is shown in **Table 2.24**.

Table -2.24
Availability of essential equipment in OTs during 2019-20

District Hospital	Availability of essential equipment	Name of essential equipment not available (<i>per cent</i>)
Biharsharif	10	Auto Clave HP Horizontal, Operation Table Ordinary Pediatric, Operation Table Hydraulic Major, Operating table Orthopedic, Autoclave with Burners 2 bin, Shadowless lamp ceiling type minor, Steriliser (Small instruments), Bowl Steriliser Big, Bowl Steriliser Medium, Diathermy Machine (Electric Cautery), Suction Apparatus - Foot operated, Dehumidifier, Ultra violet lamp philips model 4 feet, Ethylene Oxide steriliser and Microwave steriliser-15 (60)
Hajipur	13	Operation Table Ordinary Pediatric, Operation table Hydraulic Minor, Autoclave with Burners 2 bin, Focus lamp Ordinary, Steriliser (Big instruments), Steriliser (Medium instruments), Steriliser (Small instruments), Suction Apparatus - Foot operated, Dehumidifier, Ultra violet lamp Philips model 4 feet, Ethylene Oxide steriliser and Microwave steriliser-12 (48)
Jehanabad	7	Auto Clave HP Horizontal, Operation Table Ordinary Pediatric, Operation table Hydraulic Minor, Operating table non-hydraulic field type, Operating table Orthopedic, Autoclave with Burners 2 bin, Autoclave vertical single, Shadow less lamp ceiling type major, Focus lamp Ordinary, Steriliser (Big instruments), Steriliser (Medium instruments), Steriliser (Small instruments), Bowl Steriliser Big, Bowl Steriliser Medium, Dehumidifier, Ultra violet lamp Philips model 4 feet, Ethylene Oxide steriliser and Microwave steriliser-18 (72)
Madhepura	8	Operation Table Ordinary Pediatric, Operation table Hydraulic Minor, Operating table non-hydraulic field type, Operating table Orthopedic, Autoclave with Burners 2 bin, Autoclave vertical single, Shadow less lamp ceiling type minor, Focus lamp Ordinary, Steriliser (Big instruments), Steriliser (Medium instruments), Bowl Steriliser Big, Bowl steriliser Medium, Suction Apparatus - Foot operated, Dehumidifier, Ultra violet lamp philips model 4 feet, Ethylene Oxide steriliser and Microwave steriliser- 17 (68)

District Hospital	Availability of essential equipment	Name of essential equipment not available (<i>per cent</i>)
Patna	12	Auto Clave HP Horizontal Operation Table Ordinary Pediatric, Operation table Hydraulic Minor, Operating table non-hydraulic field type, Autoclave with Burners 2 bin, Shadowless lamp ceiling type major, Shadow less lamp ceiling type minor, Focus lamp Ordinary, Bowl Steriliser Big, Dehumidifier, Ultra violet lamp philips model 4 feet, Ethylene Oxide steriliser and Microwave steriliser-13 (52)

(Source: Test-checked DHs)

As evident from **Table 2.24**, only seven to 13 types of equipment were available in OTs of test-checked DHs against requirement of 25 types of equipment. Thus, equipment available in OTs were insufficient, implying that surgical treatment was affected in test-checked DHs. Besides, none of the test-checked DHs executed an AMC for OT equipment although 10 equipment/apparatus like Operation Table Hydraulic Minor (1), Operation Table Hydraulic Major (2), Autoclave HP vertical (2), Diathermy Machine (2), Suction Apparatus-Electrical (1), Shadowless Lamp Ceiling Type Minor (1) and Shadowless Lamp Stand model (1) were in non-functional condition in four test-checked DHs except DH-Patna. Further, in absence of Equipment Maintenance Register, the down time rate of equipment could not be assessed.

2.4.9 Availability of supportive staff

NHM Assessor's Guidebook prescribes that the facility should have adequate supportive staff in OT. However, Audit observed that out of five test-checked DHs, OT Assistant was posted in DH-Hajipur and DH-Patna, as shown in **Table 2.25**. Shortage of OT Technician/OT Assistant, who assist surgeons, could have affected number of operations adversely.

Table- 2.25
Availability of OT Technician/OT Assistant (March 2020)

District Hospital	Sanctioned strength	Person-in-position	Shortage
Biharsharif	10	0	10
Hajipur	11	1	10
Jehanabad	10	0	10
Madhepura	10	0	10
Patna	3	1	2

2.4.10 Documentation of OT procedures

NHM Assessor's Guidebook prescribes that surgical safety checklist, pre-surgery evaluation records and post-operative evaluation records for OTs should be prepared for each case. Audit observed that these records were not maintained in test-checked DHs except DH-Jehanabad where only pre-surgery evaluation and post-operative evaluation were found recorded. Therefore, adherence to safety procedures in OTs was not ascertainable in all the test-checked DHs.

2.4.11 Availability of linen in OT

NHM Assessor's Guidebook prescribes that hospital should have adequate sets of four types of clean linen³⁰ for surgical staff and patient. These linens are used during course of surgery of patient. Audit observed that linens used during operation were not available in DHs (except DH-Biharsharif). Only one³¹ out of four types of linens was available in DH-Biharsharif. Non-availability of linen (as shown in **Table -2.26**) indicated inadequacies in maintaining hygiene and surgical safety.

Table- 2.26
Availability of essential linens in OTs during 2019-20

Name of District Hospital	No. of available essential linen	Shortage in number of essential consumable (<i>per cent</i>)
Biharsharif	1 (80 pieces)	3 (75)
Hajipur	0	4 (100)
Jehanabad	0	4 (100)
Madhepura	0	4 (100)
Patna	0	4 (100)

(Source: Test-checked DHs)

2.4.12 Intensive Care Unit (ICU) services

As per IPHS, Intensive Care Unit (ICU) is essential for critically ill patients requiring highly skilled life-saving medical aid and nursing care. DHs are required to have five to 10 *per cent* of total number of beds for ICU.

Audit observed that out of five test-checked DHs, functional ICU (five-bedded) was available in DH-Jehanabad only. Further, following discrepancies were noticed in available ICU of DH-Jehanabad.

- i. Contrary to IPHS norm of one nurse for each bed in ICU, scrutiny of roster (March 2020) for nurses disclosed that only three nurses were deployed in first shift and only one was deployed in second and third shift in place of requirement of one nurse for one bed in ICU. It was noticed that one to two patients were admitted in ICU per day and overall 41 patients were found admitted in March 2020. Further, no paramedic was posted in ICU against requirement of one as per NHM Assessor's Guidebook. It may affect quality of care.
- ii. Audit observed that against the prescribed 14 types (**Appendix-2.6**) of drugs in NHM Assessor's Guidebook for ICU, five³² types of essential drugs were not available during sampled month (August 2019) in the DH. However, separate drug stock register was not maintained in ICU.

³⁰ Draw sheet, Hospital worker OT coat, Abdominal sheets for OT and Pereneal sheets for OT

³¹ Abdominal sheets for OT (80 pieces)

³² Activated charcoal, Salbutamol, Aminophylline, Digoxin and Metoclopramide

- iii. Audit observed that against the prescribed eight types (**Appendix-2.6**) of consumables in NHM Assessor's Guidebook for ICU, four³³ types of essential consumables were not available during sampled month (August 2019) in the DH. However, separate consumable stock register was not maintained in ICU.
- iv. According to IPHS, against the requirement of nine types of equipment (**Appendix-2.6**), only three³⁴ types of equipment were available in ICU in functional condition. Trained person to operate ventilator and defibrillator was not available in the DH. Besides, AMC of these machines and equipment was not in place and downtime of the equipment could not be ascertained in absence of equipment maintenance register.
- v. Contrary to NHM Assessor's Guidebook, regular monitoring of infection control practices of hospital acquired infection like fever and purulent discharge from surgical site, reporting cases of acquired infection and periodical medical check-up and immunisation of staff of ICU for Hepatitis B and Tetanus Toxoid was not followed in the DH.
- vi. Contrary to NHM Assessor's Guidebook, sufficient circulation area and infrastructure for visual privacy was also not available in ICU. Further, demarcated area for central nursing station, isolation room, ancillary area, changing room for staff and counselling room was also not available in the ICU.
- vii. During joint physical verification (August 2020 and August 2021) it was seen that attendants were also sitting inside the ICU due to unavailability of guard.

The CS-cum-CMO, Jehanabad (February 2020) attributed improper ICU services to shortage of trained manpower.

2.4.13 Emergency services

2.4.13.1 Availability of emergency beds

NHM Assessor's Guidebook requires DH to have five *per cent* of the total beds as emergency beds or as per patient load. Audit observed that average per day patient load ranged between three and 26 during 2014-20 in test-checked DHs³⁵. Average per day patient load in DH-Hajipur was 26 and available beds were 16. In DH-Biharsharif, DH-Madhepura and DH-Patna, average per day patient load was three, 11 and four respectively and availability of emergency beds was higher³⁶.

NHM Assessor's Guidebook prescribes availability of 11 emergency curative services (**Appendix-2.7**) in DH. IPHS envisages an emergency OT in each DH.

³³ Ryles tubes, Catheters, Chest Tube and ET tubes

³⁴ High end monitor, Ventilator and defibrillator

³⁵ Except DH- Jehanabad due to non-maintenance of records

³⁶ Available beds (DH-Biharsharif:20, DH-Madhepura:20 and DH-Patna:16)

Audit observed that emergency OT was not available in test-checked DHs thereby depriving patients of required emergency surgeries and services despite availability of beds.

2.4.13.2 *Triaging of patients*

NHM Assessor's Guidebook prescribes standard treatment protocol for triaging³⁷ of patients admitted in an emergency. Audit observed that triaging was not done in test-checked DHs during 2014-20. Superintendent/ Deputy Superintendent of DH-Biharsharif and DH-Jehanabad attributed (January-February 2020) this deficiency to shortage of manpower.

2.4.14 **Drugs and Equipment in Emergency Services**

2.4.14.1 *Availability of Drugs in Emergency Services*

Audit observed that against the prescribed 25 types (*Appendix -2.6*) of drugs in NHM Assessor's Guidebook for Emergency, there was shortage of essential drugs as shown in **Table -2.27**.

Table- 2.27
Availability of essential drugs in Emergency Department

District Hospital	May-2014	August-2015	November-2016	February-2018	May-2018	August-2019	No. of average available essential drugs	Shortage in number of essential drugs (per cent)
Biharsharif	RNA*	12	9	8	8	6	9	16 (64)
Hajipur	RNA	RNA	11	12	12	16	13	12 (48)
Jehanabad	RNA	RNA	6	7	8	10	8	17 (68)
Madhepura	8	11	12	13	14	17	13	12 (48)
Patna	5	0	0	5	6	15	5	20 (80)

(Source: Test-checked DHs) (*RNA-Record not made available)

As evident from **Table-2.27**, shortage of drugs ranged between 48 and 80 per cent during 2014-20 in the test-checked DHs.

2.4.14.2 *Availability of Equipment for Emergency Services*

Audit examined availability of 14 types (*Appendix-2.6*) of essential equipment and instruments as prescribed in NHM Assessor's Guidebook during 2019-20 for emergency services in the test-checked DHs and observed significant shortage as shown in **Table- 2.28**.

³⁷ The process of sorting people based on their need for immediate medical treatment as compared to their chance of benefiting from such care.

Table-2.28
Availability of essential equipment in Emergency Department

District Hospital	Availability of essential equipment	Name of essential equipment not available (<i>per cent</i>)
Biharsharif	7	Ambu bag(s), Defibrillator, ECG, Glucometer, HIV kit, Laryngoscope and Laryngeal Mask Airway (LMA) - 7 (50)
Hajipur	7	Dressing trolley, Drug trolley, Defibrillator, HIV kit, Instrument trolley, Laryngeal Mask Airway (LMA), and Multipara torch - 7 (50)
Jehanabad	5	Crash cart, Defibrillator, Dressing trolley, ECG, HIV kit, Instrument trolley, Laryngoscope, Laryngeal Mask Airway (LMA) and Multipara torch - 9 (64)
Madhepura	5	Defibrillator, Drug trolley, ECG, HIV kit, Instrument trolley, Laryngoscope, Laryngeal Mask Airway (LMA), Dressing Trolley and Multipara torch - 9(64)
Patna	13	Defibrillator- 1 (7)

(Source: Test-checked DHs)

As shown in **Table 2.28**, out of 14 types of essential equipment, five to 13 equipment were available and shortage of essential equipment in Emergency department ranged between seven and 64 *per cent*. Significant shortage of equipment was observed in all test-checked DHs except in DH-Patna. Defibrillator (used in resuscitation) was not available in any of the test-checked DHs.

Insufficient availability of drugs and equipment implied that quality of treatment might have been adversely affected.

2.4.15 Blood Bank

2.4.15.1 Availability of blood bank service

As per IPHS, a DH should essentially have a round the clock Blood Bank (BB) irrespective of the bed strength, but nine³⁸ DHs (including test-checked DH-Patna) did not have blood bank. At these nine places, establishment of blood bank was under process (March 2021).

Further, Contrary to IPHS, NHM Assessor's Guidebook and National Vector Borne Disease Control Programme (NVBDCP) guidelines, Audit observed that though the blood banks in DHs had facility of whole blood collection and storage, none of the blood banks at DHs³⁹ had blood components separation facility such as platelets which were also required for management of Dengue cases and other diseases.

SHS replied (September 2021) that Blood Component Separation Unit (BCSU) was approved for DH-Munger and DH-Purnea, and for other DHs, the same was under process. Reply was acceptance of audit observation.

³⁸ DHs at Arwal, Araria, Banka, Bhagalpur, East Champaran, Gaya, Patna (one among the five test-checked DHs), Sheohar and Supaul

³⁹ 27 DHs, as in nine out of total 36 DHs there was no blood bank

2.4.15.2 License of blood bank

Contrary to general condition for license stipulated in Drugs and Cosmetics Act 1940, Audit observed that (December 2020) all the blood banks in DHs (except two⁴⁰) were running without valid license during 2014-20 as their license had expired and those could not be renewed due to non-compliance of Central Drugs Standard Control Organisation (CDSCO) observations during inspection and lack of required infrastructure including equipment. For example, blood banks of 11⁴¹ DHs in the state had area less than stipulated 100 sq. meter, the shortage ranged from five to 531 sq. ft. (*Appendix-2.8 and 2.9*). However, ₹ 9.5 lakh per blood bank was sanctioned (2020-21) and was sent (March 2021) by SHS to 27⁴² blood banks for renovation, wiring, earthing and furniture.

SHS informed (March 2021) that documents essential for renewal were submitted to State Drug Controller, Bihar by 28 blood banks⁴³ and inspection for renewal of license of 14 blood banks⁴⁴ by Central Drug Standard Control Organisation (CDSCO), East Zone was done and rest was under process.

SHS replied (September 2021) that renovation of all blood Centres as per Drugs and Cosmetics Act was under process⁴⁵. License of blood Centre at six⁴⁶ DHs had been renewed. For the others, renewal of license was under process. Reply corroborated audit observation.

2.4.15.3 Testing of donated blood

As per NHM Assessor's Guidebook and National AIDS Control Organisation (NACO) Standard, there should be an established procedure for testing of blood. All mandatory tests including test for Hepatitis-A should be carried out on blood samples but Audit observed that none of the four test-checked blood banks had carried out Hepatitis-A test.

SHS replied (September 2021) that as per Drugs and Cosmetics Act 1940, Hepatitis-A test was not mandatory for blood banks. Reply is not tenable as the fact remained that test for Hepatitis-A was not being conducted in blood bank of DHs as envisaged in NHM Assessor's Guidebook and NACO Standard.

⁴⁰ DHs at Lakhisarai and Sheikhpura

⁴¹ Ara, Aurangabad, Chhapra, Gopalganj, Jehanabad, Madhubani, Muzaffarpur, Nalanda, Nawada, Sasaram and Vaishali (Information in respect of Lakhisarai and Sheikhpura was not available at SHS)

⁴² Including blood bank at 24 DHs.

⁴³ Out of which 25 blood banks were situated in the District Hospitals

⁴⁴ Out of which 13 blood banks were situated in the District Hospitals

⁴⁵ Renovation is completed at DHs Jamui, Bhabhua, Kishanganj, Araria, Bhagalpur, Munger, Purnea, Madhepura, Arwal, Banka, Saharsa, Katihar, GGSB Patna City and Samastipur. Renovation is being done at DHs Sheohar, Sasaram, Begusarai, Biharsharif, Nawada, Siwan, Aurangabad, Gopalganj, Chhapra, Hajipur, Khagaria, Motihari and Gaya. Due to some unavoidable circumstances (space issue), renovation is not started at Jehanabad, Ara, Madhubani, Sitamarhi and Supaul.

⁴⁶ DHs at Lakhisarai, Sheikhpura, Muzaffarpur, Jamui, Bhabhua and Kishanganj

2.4.15.4 Labelling and identification of blood and its product

Contrary to NHM Assessor's Guidebook and NACO Standard, Audit observed that none of the test-checked blood banks had introduced advance system such as barcode system for identification of blood though desired. No reason for shortcoming was available.

SHS replied (March 2021) that *e-Raktkosh* was being implemented across all blood banks in which there was provision for barcode system also.

SHS further replied (September 2021) that all blood Centres are undergoing process of digitisation under *e-Raktkosh* and barcode reader and printer is also provided to all blood Centres. Reply corroborated audit observation.

2.4.15.5 Storage of blood

As per NHM Assessor's Guidebook and NACO Standard, refrigerators used for blood storage should be kept at recommended temperature *i.e.* $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and it should be monitored every four hours. Audit observed that although blood banks of four test-checked DHs had separate refrigerator for blood and reagent, the storage temperature was not monitored every four hours. At DH-Jehanabad, temperature was monitored twice at 8.00 am and 8.00 pm while at DH-Biharsharif, DH-Hajipur and DH-Madhepura, the temperature was monitored thrice at 8.00 am, 2.00 pm and 8.00 pm. No reason for improper monitoring was available. However, SHS informed (March 2021) that remote monitoring of temperature of all storage equipment of blood bank from State Headquarters is under proposal and further stated (September 2021) that instruction was given to all blood centres to maintain a record of temperature of blood bank refrigerator every four hours. However, Audit observed (August 2021) that monitoring of the temperature was not done remotely and the system of monitoring of temperature remained unchanged.

2.4.15.6 Resources at blood bank

A. Man power for blood bank

Contrary to IPHS, SHS assessment (May 2019 and July 2019) and NACO Standard, Audit observed that blood banks situated at DHs were suffering from shortage of manpower (**Appendix -2.10**). Although, on an average, one Medical Officer was posted in each blood bank, no Counsellor and Lab Assistant was posted in any of the blood banks in DHs. In absence of trained assistant, blood was drawn and processed by the Lab Technicians who were not provided sufficient training for this job.

SHS accepted (March 2021) that IPHS norms was not being followed. Further, it replied (March 2021 and September 2021) that selection of Lab Technicians and Counselor was under process and Group IV staff was available in all blood banks through outsourcing agency. However, audit observed that (August 2021) there was no grade IV staff in the blood bank at test-checked DHs except blood

bank at DH-Jehanabad and DH-Madhepura. Besides, SHS was also unaware about the sanctioned strength of all blood banks situated at DHs.

B. Equipment for blood bank

As per NHM Assessor's Guidebook, there should be 19 types of equipment & instruments and 10 types of furniture & fixtures required for Blood Bank. Audit observed that blood banks at test-checked DHs were deficient in required equipment & instruments and furniture & fixtures. Further, among the available 219 equipment & instruments and 59 furniture & fixtures, 80 and five were non-functional respectively, out of which 38 and three were repairable (*Appendix -2.11 and Appendix -2.12*).

SHS replied (September 2021) that after gap analysis, all equipment and furniture was replaced from NHM fund and State Blood Transfusion Council (SBTC). Reply is not tenable as details of gap analysis, benchmark opted for gap analysis and equipment replaced had not been provided and audit noticed (August 2021) that shortcomings persisted (except ELISA reader) at blood bank in the test-checked DHs.

Maintenance of equipment

Contrary to IPHS norm and NHM Assessor's Guidebook, Audit observed that equipment of test-checked blood banks were not under AMC (except at DH-Hajipur and DH-Madhepura where newly purchased equipment were under AMC/CMC). In the test-checked blood banks, some important equipment was non-functional and lying idle, as shown in **Table 2.29**.

Table- 2.29
Non-functional equipment in blood bank

Sl. No.	Name of the DH	Non-functional equipment
1	Biharsharif	Two refrigerators (repairable), one blood collection monitor (repairable) and one donor couch (repairable)
2	Hajipur	Two refrigerators (repairable), one Deep Freezer -80 degree, (non-repairable)
3	Jehanabad*	Two refrigerators (repairable), one water bath -37 degree (non-repairable), one water bath 56 degree (non-repairable) and one microscope (out of order). Besides, one refrigerator was lying idle.
4	Madhepura*	Three blood bank refrigerators (repairable), one table top centrifuge (non-repairable), one compound microscope (non-repairable).

(Source: Test-checked DHs) * These were not under AMC/CMC

Besides, in remaining blood banks at DHs, non-functional instruments were also noticed as detailed in *Appendix-2.12*.

Above facts indicated the requirement of AMC for the smooth functioning and safeguarding of equipments/instruments. In absence of AMC or lack of repair and maintenance, non-functional equipment/instruments may become non-repairable. Thus, the needful facilities could not be ensured at the concerned blood banks. Besides, lack of timely repair and maintenance may entail additional expenditure on new purchases. Shortage of functional equipment may lead to non-renewal of license of blood bank.

SHS replied (March 2021 and September 2021) that all new equipment supplied through BMSICL have provisions for AMC and CMC. Reply is an acceptance of the fact that AMC and CMC were in place only for new equipment.

2.4.15.7 Quality Assurance of Blood Bank

Contrary to IPHS guidelines, Audit observed that blood banks of test-checked DHs did not follow SOP⁴⁷. Audit observed (March 2021) that 4,591 whole blood units were discarded during 2014-19 in the blood banks situated in the DHs. Out of which 1,337 blood units (29 per cent) were discarded due to its expiry (**Appendix-2.13**). Further, among the blood bank at test-checked DHs, 228 whole blood units (26 per cent) were discarded due to expiry during 2014-20, as shown in **Table 2.30**.

Table- 2.30

Details of whole blood discarded in the blood banks in the test-checked DHs

Name of blood bank in DHs	Details of discarded blood units	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2014-20
Jehanabad	Due to Expiry	23	9	7	16	12	25	92
	Due to other reason	29	13	16	30	34	31	153
	Total	52	22	23	46	46	56	245
Biharsharif	Due to Expiry	15	2	3	6	3	1	30
	Due to other reason	61	46	62	54	53	61	337
	Total	76	48	65	60	56	62	367
Madhepura	Due to Expiry	23	13	26	6	23	15	106
	Due to other reason	5	2	18	19	28	47	119
	Total	28	15	44	25	51	62	225
Hajipur	Due to Expiry	0	0	0	0	0	0	0
	Due to other reason	1	1	0	3	9	10	24
	Total	1	1	0	3	9	10	24
Grand Total	Due to Expiry	61	24	36	28	38	41	228
	Due to other reason	96	62	96	106	124	149	633
	Total	157	86	132	134	162	190	861

(Source: SHS & Test-Checked DHs)

Audit did not notice any steps taken by the blood bank to avoid discarding of those blood units despite GoI instruction to obviate the wastage of blood (October 2015).

SHS replied (September 2021) that all blood banks were following quality assurance scheme of NACO and first in first out was followed to avoid expiry of blood. Reply is not tenable since, despite direction (December 2013) of Bihar State AIDS Control Society to issue blood within last seven days of the expiry date to emergency patients without replacement and direction to Blood bank of *Mahavir Cancer Sansthan*, Patna to obtain excess blood as per requirement, it was noticed that 1,337 blood units expired at the blood banks during 2014-19.

⁴⁷ NACO Standard and Drugs and Cosmetics Act

2.4.16 Dietary Services

IPHS guidelines and NHM Assessor's Guidebook envisages standard for dietary services as per the requirement of patients in DHs viz. requisition, preparation, handling, storage and distribution of diets and maintenance of records like diet registers, outsourcing of dietary services, nutritional assessment, hygiene and sanitation, quality assurance and quality control and regular check-up of staffs. Manpower and outsourcing work could be done through local tender mechanism.

Audit observed that dietary services were provided in test-checked DHs by outsourced agency and shortcomings therein were as follows:

- Statutory license was not obtained by the outsourced agencies in DH-Madhepura whereas records related to it were not available at DH-Jehanabad. No formal agreement was executed with the agency in DH-Patna.
- Contrary to NHM Assessor's Guidebook, diet register was not maintained in two test-checked DHs i.e., at DH-Hajipur and DH-Madhepura, whereas in DH-Biharsharif, though maintained, it was not verified by the competent authority.
- In DH-Patna, dietary service was outsourced. However, neither tender nor formal agreement was executed with the agency. Besides, approval of *Rogi Kalyan Samiti* (RKS) was also not taken. In DH-Hajipur, the outsourced agency was changed (January 2019) and agency "*Bhavishya Didi Ki Rasoi*" (JIVIKA initiative) was chosen (March 2019) and agreement was executed by DHS, but without following tendering process.
- Contrary to IPHS, local⁴⁸ agency was neither given preference nor was such clause mentioned in the Notice Inviting Tender (NIT) at DH-Jehanabad. Despite local agency qualified in tendering process, decision was taken through lottery, as the bid quoted by agencies were the same.
- Requirement of statutory license for providing dietary service was not mentioned in the agreements.
- In DH-Jehanabad, period of agreement was not mentioned in the agreement executed⁴⁹ (September 2011).
- **Nutritional Assessment**
 - Audit observed that despite the sanctioned post of Dietician in test-checked DHs (except DH-Patna), none was posted there for nutritional assessment of patients. Resultantly, nutritional assessment, diet counselling and formulation of caloric requirement for the patients were not done during 2014-20 in test-checked DHs.

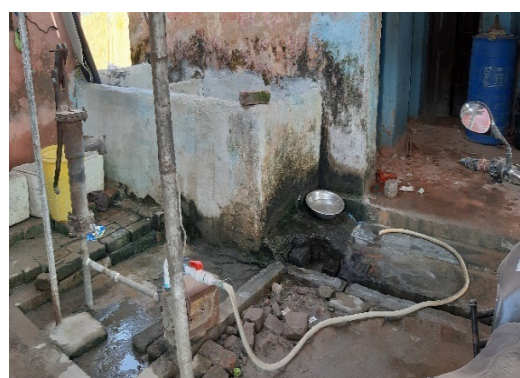
⁴⁸ *Samta Gramin Vikas, Katihar in Jehanabad*

⁴⁹ *With Vikky Store, Jehanabad (Agreement executed on 25/9/2011)*

- None of the test-checked DHs⁵⁰ ensured different diet to different patients viz. regular, low fat for babies; low sugar, low fat, high protein, high carbohydrate for malnourished children under the age of six; special diet for critically ill patients. The same diet was provided to all patients.
- **Preparation, handling, storage and distribution of diet**
 - **Requisition of diet:** Audit observed that in DH-Madhepura and DH-Jehanabad, there was no proper system to place indent to the agency outsourced for diet whereas in remaining three DHs, though hospital stated that they have system of indenting of diet system, they failed to furnish the copies of indents during 2014-19. In 2019-20, none of the test-checked DHs maintained the indent register except DH-Biharsharif. Instances of false distribution of diet were noticed in DH-Jehanabad where scrutiny of relevant records⁵¹ of one of the sampled months⁵² disclosed distribution of diet to patients⁵³ who had left the hospitals.
 - **Storage of food item:** Audit noted that proper storage procedure should have been ensured either by frequent checking or verification of storage system/kitchen of the agencies but such verification was not done by the test-checked DHs. It might have affected the quality of diet.
 - **Hygiene and sanitation in the kitchen:** Audit observed that test-checked DHs neither had standard procedure for cleaning of utensils, hygiene and sanitation in the kitchen nor it was inspected by the hospital authority to ensure the same. Joint physical verification in DH-Madhepura disclosed that dietary service was in pathetic condition i.e. kitchen was dirty, non-airy, small, linen and utensils were being washed at same place and that too in unhygienic condition, electric wires were placed haphazardly at the entrance of kitchen. Besides, domestic LPG was used in kitchen of DH-Madhepura and DH-Biharsharif.



Kitchen at DH-Madhepura



Utensils and linen washing area at DH-Madhepura

⁵⁰ except DH-Patna where it could not be ascertained as records were not available

⁵¹ log book of ambulance, labour register, indoor register and diet register

⁵² August 2015 (log book of the ambulance pertaining to other four test-checked months i.e. May 2014, November 2016, February 2018 and May 2018 was not presented before the audit hence cross-checking for these months could not be ascertained)

⁵³ Total 19 patients each for 1-3 days totaling 36 days

In DH-Biharsharif, cooking without head mask and on the floor was observed while in DH-Jehanabad, kitchen was being operated in a condemned building.



Kitchen at DH-Jehanabad in a condemned building

- **Distribution of clean and hygienic diet:** Timely and hygienic diet should be supplied in covered container three times a day. In test-checked DHs, neither any inspection/check regarding adherence to diet schedule, timeliness, maintaining hygiene and distribution in covered container was carried out nor they had any tool to check this issue.
- **Quality assurance and quality control:** Audit observed that test-checked DHs neither had standard procedure of quality test nor system of periodical quality test for dietary services. Quality of diet was not tested in any of the test-checked DHs during 2014-20. Audit noted that there was no clause in the agreement with the outsourced agency that quality would be checked by the hospital authority, except in DH-Hajipur. However, in DH-Madhepura and DH-Jehanabad, it was mentioned in the agreement from July 2016 and July 2018 respectively. No evaluation or internal assessment of dietary services in the test-checked DHs was carried out during 2014-20. Absence of quality tests indicated weak control over the outsourced agencies towards supply of quality diet.
- **Regular checkup of staff:** Audit observed that neither such procedure was documented nor the check-up of kitchen staffs was ensured⁵⁴. However, DH-Hajipur had done the same from December 2018⁵⁵. However, there was no clause to this effect in the agreement executed with the outsourced agencies.

No specific reply was furnished to this audit observation.

2.4.17 Ambulance services

As per IPHS and NHM Assessor's Guidebook, District Hospital should ensure adequate, timely and round the clock availability of ambulances, having valid licenses and equipped with Basic Life Support (BLS), preferably Advanced

⁵⁴ Except for a short period of 2018 to March 2019 at Hajipur.

⁵⁵ In 2019-20, no such health check-up was done.

Life Support (ALS), communication system and online medical help facility. There should be three and four ambulances for 100-300 bedded and 301-500 bedded hospital respectively. There should be demarcated parking area for the ambulances.

Contrary to the provisions of the *ibid*, Audit observed the following shortcomings:

- In the State, all the ambulance services (ALS, BLS and mortuary van) are operated and managed through centralised call centre-102.
- Shortage in respect of number of ambulance was observed in DH-Biharsharif and DH-Patna. In DH-Patna, there was neither ALS Ambulance (ALSA) nor BLS Ambulance (BLSA). However, two ambulances of general type were available.
- No GPS linkage and online medical help facility was there in ambulance at DH-Madhepura.
- No demarcated area was there for parking of Ambulances except in DH-Jehanabad and DH-Patna. During joint physical verification (August 2021) it was observed that parking area for the ambulance was demarcated⁵⁶ in DH- Jehanabad. However, space for six ambulances and one mortuary van was insufficient due to parking of many condemned ambulances which were dumped in the hospital premises. These ambulances were declared condemned and the concern agency had left them in the hospital premises.



Condemned Ambulances dumped in the premises of DH-Jehanabad

- Shortage of essential equipment like emergency first aid kit, manometer, venoclysis equipment, Minimal equipment for resuscitation manoeuvres, daily check list, blanket, suction equipment, supplies for immobilising fracture and attendance records in most of the available ambulances in the test-checked DHs were also observed.

⁵⁶ *One shade was available for one ambulance but roof of the shade was damaged and another shade was available in front of emergency ward.*

Shortcomings in ambulance services are detailed in **Table- 2.31**.

Table -2.31
Adequacy of ambulances in test-checked DHs

SI. No.	District Hospital	Bed strength of hospital	No. of ambulances		Remarks
			Required + Desirable [#]	Available (Required + Desirable)	
1	Biharsharif	300	3+1	1+1	Number of ambulance with BLS was less than requirement
2	Hajipur	500	4+1	7+2	-
3	Jehanabad	300	3+1	4+2	-
4	Madhepura	300	3+1	2+1+1*	* one ambulance was of general type. One BLSA was less. No GPS linkage (except one) and online medical help facility was there in ambulance. One ambulance was without registration.
5	Patna	100	3+1	2**	** ALSA/BLSA-Nil, however, there are two ambulances in general nature

(Source: Test-checked DHs), # indicates desirable ambulance with ALS

Table -2.32
Deficiency of essential equipment in ambulances observed during joint physical verification

	Test-checked DHs				
	Biharsharif	Hajipur	Jehanabad	Madhepura	Patna
Number of ambulances verified	1	3	6	4	2
Availability of equipment					
Emergency first aid kit	Yes	No (2)	Yes	No (1)	Yes
Oxygen mask	Yes	Yes	Yes	Yes	Yes
Manometer	No	No	No	No (3)	Yes
Venoclysis equipment	No	No	No	No(3)	No
Minimal equipment for resuscitation manoeuvres	No	No	No	No(3)	No
Daily checklist	No	No	Yes	No (3)	No
Blanket	No	No	No	No (2)	No
Suction equipment	Yes	No (2)	Yes	No (2)	Yes
Supplies for immobilising fracture	No	No	No	No (3)	Yes
Attendance record	No	No	No	No (3)	No (1)

(Source: Test-checked DHs)

SHS replied (September 2021) that all CS-cum-CMO and DHS were directed to demarcate parking area for ambulance in their respective DHs. As per the agreement, ambulance service providers had to provide essential drugs, consumables and equipment. Specific reply to other audit observations was not furnished. Directives of SHS regarding demarcation of parking area for ambulance was not being followed in DHs. Drugs, consumables and equipment available in ambulances were not as per IPHS requirement.

2.4.18 Cold chain

NHM Assessor's Guidebook stipulates provision of cold chain room for storage of vaccines and other drugs requiring controlled temperature. GoI established institute⁵⁷ to provide technical training to cold chain technicians in repair & maintenance of cold chain equipment and cold chain management.

Audit observed that temperature chart/log in respect of vaccines was maintained in all DHs except DH-Biharsharif. In DH-Biharsharif⁵⁸, there was no cold chain⁵⁹. No designated cold chain handler was posted in test-checked DHs (except DH-Jehanabad) during 2014-20 for maintenance of equipment but it was being handled by nurses⁶⁰. However, in DH-Hajipur and DH-Patna, the nurses handling cold chain were imparted training⁶¹. In DH-Jehanabad, cold chain handler was posted and was given regular⁶² training. Further, during joint physical verification (August 2021) of cold chain in DH-Jehanabad, it was observed that cold chain room was too small to accommodate eight freezers. Besides, building of the cold chain was in critical condition *i.e.* room was damped and electrical circuit was installed on the seepage wall.



Space constraint in cold chain room in DH-Jehanabad

Condition of cold chain room in DH-Jehanabad

No specific reply to this audit observation was furnished.

2.4.19 Mortuary services

As per IPHS, there should be mortuary in a separate building in the hospital premises for keeping of dead bodies and conducting autopsy and there should be a mortuary van in the DH. In mortuary, there should be a post-mortem room having stainless steel autopsy table with sink, running water in sink for specimen washing and cleaning and cup-board for keeping instruments. Proper illumination and air-conditioning should also be there. Further, there should be a separate room for body storage with at least two deep freezers for preserving

⁵⁷ National Cold Chain Training Centre (NCCTC), Pune and National Cold Chain & Vaccine Management Resource Centre (NCCVMRC) -NIHFW, New Delhi

⁵⁸ Vaccines were collected in the morning and quantity remaining unutilized were returned on the same day in the evening to PHC Sadar.

⁵⁹ PHC Sadar situated within the campus of DH Biharsharif has cold chain.

⁶⁰ Records related to training were not maintained in 2019-20 in DH-Madhepura

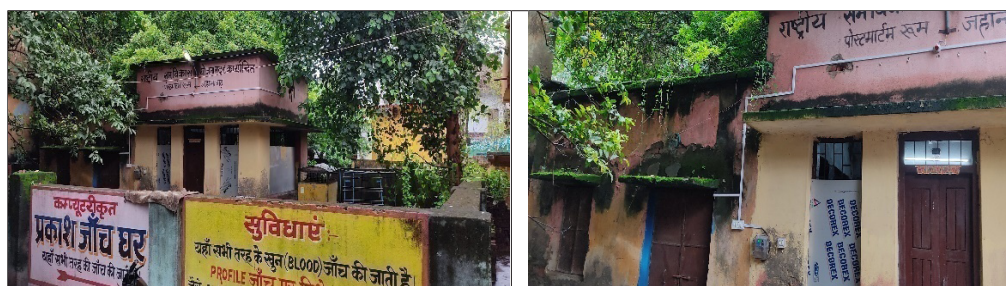
⁶¹ Cold chain handler (eVIN) training for two days every year during 2014-19 and one day in 2019-20 at DH-Hajipur and one day every year during 2014-20 at DH-Patna.

⁶² Cold chain handler (eVIN) training for two days every year during 2014-19 and eight days in 2019-20 at DH-Jehanabad

the body. Besides, there should be waiting area for relatives and a space for religious rites.

Audit observed that three⁶³ test-checked DHs did not have facility for mortuary. Though mortuary was available at DH-Jehanabad, it was situated outside the hospital premises and without any arrangement to preserve the dead body and autopsy thereof.

Further, DH-Biharsharif (November 2015) and DH-Hajipur (May 2015) had new building for mortuary but was non-functional due to lack of equipment and accessories. Mortuary vans were available at these DHs except DH-Patna. Space for religious rites was not available in the test-checked DHs except DH-Hajipur. Besides, post-mortem room was not available in DH-Patna. However, remaining four test-checked DHs had post-mortem room⁶⁴ but the specified items such as autopsy table, sink with running water and cup boards were not available. Further, proper illumination in post-mortem room was lacking in DH-Jehanabad whereas Air Conditioner in post-mortem room was not available in two⁶⁵ DHs. Further, none of the test-checked DHs had separate room with two deep freezers for storage/preserving the dead body. Thus, Government failed to protect the human rights after death as it is their obligation in law⁶⁶ to provide necessary facilities for its preservation and disposal in accordance with human dignity and respect.



At DH-Jehanabad, post-mortem room is situated in densely populated area

Post-mortem room was in poor condition at DH-Jehanabad

During joint physical verification (August 2021), it was noticed that post-mortem room⁶⁷ was situated outside the hospital premises in the densely populated area which may spread diseases in the locality.

2.4.20 Water Supply

As per IPHS guidelines for DH, there should be uninterrupted water supply for 24 hours. Test-checked DHs, except DH-Biharsharif, neither planned nor took any initiative to ensure uninterrupted supply of water during 2014-20.

⁶³ DH-Hajipur, DH-Madhepura and DH-Patna

⁶⁴ In DH-Jehanabad the post mortem room was available outside the campus of the DH

⁶⁵ DH-Jehanabad and DH-Madhepura

⁶⁶ Article 21 of the constitution of India (Allahabad High Court in its decision (PIL No. 38985 of 2004) extended the meaning of 'person' in Article 21 and include a dead person in a limited sense and his rights to his life which includes his right to live with human dignity.

⁶⁷ Building condition was poor

Two⁶⁸ DHs did not ensure adequate storage and supply for water in all functional areas of the hospital such as emergency, ICU, Maternity *etc.* The test-checked DHs, except DH-Biharsharif and DH-Hajipur did not have back up storage of water or arrangement of external supply of water. None of the test-checked DHs had carried out biological testing of water samples.

2.4.21 Disaster management

As per IPHS norms, building structure and internal structure of hospital should be made disaster proof especially earthquake proof, flood proof and equipped with fire protection measures. District Hospitals need to be ready for disaster at all times *i.e.* every district hospital should have a dedicated disaster management plan in line with State Disaster Management Plan. Disaster Plan clearly defines the authority and responsibility of all cadres of staff and mechanism of mobilisation resources. All health staff should be trained and well conversant with disaster prevention and management aspects. Regular mock drill should be conducted. After each drill, the efficacy of disaster plan, preparedness of hospital and competence of staff shall be evaluated followed by appropriate changes to make plan more robust. Further, as per NHM Assessor's Guidebook, Hospital should constitute disaster management committee and prepare SOP. Hospital should maintain buffer beds (five *per cent* of the total beds) for handling mass casualty.

Contrary to NHM Assessor's Guidebook and IPHS, audit observed the following:

- None of the test-checked DHs had earmarked additional beds for disaster and mass casualty.
- Neither disaster management plan was in place nor disaster management committee was constituted in test-checked DHs.
- None of the test-checked DHs had the SOPs to manage the disastrous situations.
- No training/mock drill was conducted in three⁶⁹ out of five test-checked DHs.
- During joint physical verification (August 2021) in DH-Jehanabad, it was observed that hospital was running in condemned building and it may collapse any time.

⁶⁸ DH-Jehanabad and DH-Patna

⁶⁹ DH-Biharsharif, DH-Jehanabad and DH-Madhepura



Hospital building is about to collapse in DH-Jehanabad

Thus, efficacy of disaster plan and preparedness of hospital and competence of staff was not evaluated. District hospitals may not be able to manage the situation during disasters.

2.4.22 Fire safety

Contrary to NHM Assessor's Guidebook, Audit observed that none of the test-checked DHs had fire safety plan, and evacuation plan. Further, fluorescent fire exit signage/plan, fire hydrants and fire safety alarms were also not available in test-checked DHs. Only fire extinguishers were installed in all the test-checked DHs. Sufficiency of fire extinguishers in the test-checked DHs could not be ascertained in absence of any prescribed norms. However, numbers of available fire extinguishers were not uniform even in the same bedded hospitals⁷⁰ Details of availability of fire extinguisher in the test-checked DHs are as given in **Table -2.33**.

Table -2.33
Availability of fire extinguishers in test-checked DHs

District Hospital	Sanctioned beds (functional beds)	Number of fire extinguishers available	Availability of one fire extinguisher w.r.t. number of sanctioned beds (functional beds)	Total no. of fire extinguishers with expired validity
Biharsharif	300 (300)	16	19 (19)	10
Hajipur	500 (120)	22	23 (5)	NIL
Jehanabad	300 (97)	5*	60 (19)	5
Madhepura	300 (91)	22	14 (4)	NIL
Patna	100 (100)	39	3 (3)	NIL

(Source: Test-checked DHs) * Excluding Sick Newborn Care Unit (SNCU)

One fire extinguisher was available for three to 19 beds in the test-checked DHs. Situation is better in DH Patna and worse in DH-Jehanabad and DH-Biharsharif. Further, 10 (63 per cent) and five (100 per cent) fire extinguishers' validity had expired in DH-Biharsharif and DH-Jehanabad respectively. None of the test-checked DHs had obtained "No Objection Certificate (NOC)" from fire safety authority. Thus, vulnerability of hospital, patients, staffs, attendants to fire risks was not adequately addressed. No reason for inadequacies discussed above was on record.

⁷⁰ 300 bedded DH-Jehanabad, DH-Madhepura and DH-Biharsharif

2.4.23 Evaluation of in-patient services through outcome indicators

As per NHM Assessor’s Guidebook, IPD services provided in the DHs were to be evaluated on monthly basis through certain outcome indicators *viz.* Bed Occupancy Rate (BOR), Leave Against Medical Advice (LAMA) Rate, Patient Satisfaction Score (PSS), Average Length of Stay (ALOS), Adverse Event Rate (AER), Completeness of Medical Records, Absconding Rate, Discharge Rate (DR) and Bed Turnover Rate (BTR).

Audit observed that outcome indicators for IPD services were not assessed by the test-checked DHs during 2014-20. In absence of information/data such as date of discharge, patient status (Discharge, LAMA and Absconding) *etc.* in the IPD register against each patient, separate discharge register and records related to adverse event, Audit too could not assess outcomes indicators such as LAMA rate, Adverse Event Rate, Absconding Rate, Discharge Rate and Bed Turnover Rate.

Superintendents/Deputy Superintendents replied (January-February 2020) that outcome indicators were not prepared and maintained due to shortage of human resource.

However, BOR and ALOS were calculated by Audit on the basis of Health Management Information System (HMIS) data, as mentioned below:

Bed Occupancy Rate: As per IPHS, the BOR (an indicator of the productivity of the hospital services) of hospitals should be at least 80 *per cent*. The BOR of test-checked DHs is shown in **Table 2.34**.

Table 2.34
Average Bed Occupancy Rate (2014-20)

District Hospital	Bed Occupancy Rate ⁷¹ (BOR)						Average BOR	Formula Total patient bed days in a month x 100/ (Total no. of functional beds in hospital x calendar days in a month)
	May-2014	Aug-2015	Nov-2016	Feb-2018	May-2018	Aug-2019		
Biharsharif	97	91	84	85	85	84	88	
Hajipur ⁷²	DNA*	DNA	70	99	100	80	87	
Jehanabad	55	41	81	22	24	19	40	
Madhepura	95	110	117	116	107	112	110	
Patna	DNA	8	5	12	8	11	9	

(Source: Test-checked DHs) * DNA –Data not available

The BOR in test-checked DHs ranged between nine and 110 *per cent*. Further, the productivity of DH-Jehanabad (40 *per cent*) and DH-Patna (nine *per cent*) was far below whereas average BOR in DH-Madhepura was higher against the benchmark. No reason for this was available except in case of DH-Jehanabad, where Superintendent (In-charge) stated (August 2021) that shortcoming was due to lack of manpower and infrastructure facilities.

⁷¹ In the absence of proper maintenance of indoor records, the BOR is calculated on the basis of Health Management Information System (HMIS) data except DH-Hajipur.

⁷² Census register was maintained in DH-Hajipur thus BOR was calculated on the basis of census register. Further, no census register was maintained for May 2014 and August 2015.

Average Length of Stay: Average Length of Stay (ALOS) is average number of days that patients spend in hospital. As evident from **Table- 2.35**, ALOS was relatively higher in DH-Madhepura and DH-Biharsharif. No reason for this was available.

Table -2.35
Average Length of Stay (2014-20)

District Hospital	Average Length of Stay in days						Average ALOS	Formula
	May-2014	Aug-2015	Nov-2016	Feb-2018	May-2018	Aug-2019		
Biharsharif	DNA*	DNA	DNA	2.7	2.96	1.72	2.46	Total patient bed days/ Total no. of admissions
Hajipur	DNA	DNA	0.45	0.62	0.49	DNA	0.52	
Jehanabad	DNA	0.82	1.04	DNA	1.04	1.04	0.98	
Madhepura	4.44	3.53	2.58	2.51	3.12	2.11	3.05	
Patna	DNA	0.37	0.34	0.41	0.21	0.30	0.33	

(Source: Test-checked DHs) * DNA: Data not available

Patient Satisfaction Survey: Audit observed that none of the test-checked DHs except DH-Jehanabad, conducted patient satisfaction survey to take feedback on quality of services during 2014-20. In this survey in DH-Jehanabad, patients have graded “Average” in most of the cases. However, analysis of Patient Satisfaction Survey was not done by the DH and hence, no corrective action was taken.

SHS replied that third party patient satisfaction survey was being done under “*Mera Hospital Programme*”. Reply is not tenable, as details (such as where and when this survey was conducted, response of the patients, action taken on the survey etc.) regarding Patient Satisfaction Survey was not furnished.

2.4.23.1 Completeness of medical records

Indian Medical Council Regulation requires that every physician shall maintain the medical records pertaining to his/her indoor patients for a period of three years from the date of commencement of the treatment in a standard proforma.

Scrutiny of 374⁷³ test-checked BHTs of five DHs pertaining to sampled months *i.e.* February 2018, May 2018 and August 2019 disclosed that the required details were not filled completely. Occupation of patient (100 per cent), investigation advised (80 per cent), diagnosis after investigation (89 per cent), follow up (89 per cent) and date (73 per cent) were the major particulars, which were not recorded in BHTs. Further, systematic maintenance and record keeping of BHTs was not available in test-checked DHs. Improperly filled BHTs might have impacted continuity and efficiency of medical care provided to a patient, especially in case of follow up or referral to higher facilities.

⁷³ DH-Biharsharif (70), DH-Hajipur (95), DH-Jehanabad (30), DH-Madhepura (116) and DH-Patna (63)

2.4.24 National Programme for the Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)

Contrary to operational guidelines of NPCDCS and NRHM Framework 2012-17, Audit observed the following:

- i. Facility of diagnosis and management of cases of Cardio Vascular Disease, Stroke and Cancer, Myocardial Infarction and stroke facilities were not available in any of the test-checked DHs.
- ii. None of the test-checked DHs had Cardiac Care Unit (CCU) for treatment of Ischemic heart disease, stroke and other cardiovascular emergencies.
- iii. In DH-Hajipur, Government approved (September 2012) ₹1.61 crore⁷⁴ for establishment of CCU, strengthening of laboratory and Non-Communicable Disease (NCD) clinic and ₹0.94 crore was released to DHS Vaishali (Hajipur) in 2011-12. However, CCU unit was not functional despite availability of equipment (such as CCU ventilator, Defibrillator, Cardiac monitor, ECG machine *etc.*) there. Joint Physical Verification (December 2019) confirmed the non-functional status of CCU and idle equipment therein. CCU was locked since 2014. There was no cardiologist posted in the hospital (July 2021).
- iv. None of the test-checked DHs had screening facility of NCD clinics including common cancers (Oral, Breast and Cervix) and follow up of chemotherapy service in cancer cases.
- v. None of the test-checked DHs except DH-Biharsharif had facility for treatment of chronic kidney diseases.

2.4.25 National Programme for Control of Blindness

National Programme for Control of Blindness and Visual Impairment⁷⁵ (NPCB&VI) has goal of reducing the prevalence of blindness from 0.45 *per cent* during 2015-18 to 0.3 *per cent* by 2020. Cataract is one of the main causes of blindness covering 63 *per cent* of the total cases.

To reach every nook and corner of the country to provide eye-care services, provision for setting up of Multipurpose District Mobile Ophthalmic Units in the District Hospitals was decided as a new initiative under the programme. Government is committed to make cataract surgery at every government health facilities free of cost and under NHM, cash assistance is also provided towards expenses of consumables and medicines.

Number of cataract surgeries performed in test-checked DHs and respective districts during 2014-20 are as shown in **Table- 2.36:**

⁷⁴ ₹1.50 crore for CCU, ₹0.1 crore for laboratory and ₹0.01 crore for NCD clinic

⁷⁵ A Centrally Sponsored Scheme launched in 1976 and for Bihar, funding pattern is 60:40 between Centre and State

Table-2.36
Number of cataract surgeries in the district and DH

District	No. of surgeries in the district	No. of surgeries in the DH (per cent)
Biharsharif	52,465	298 (0.56)
Jehanabad	4,031	0 (0.00)
Hajipur ⁷⁶	71,033	294 (0.41)
Madhepura	8,941	354 (4.00)
Patna	NA	0 (NA)

(Source: Additional Chief Medical Officers of respective districts)

Audit observed that contribution of the District Hospital was negligible in this programme and noticed that in two⁷⁷ test-checked DHs, number of surgeries performed was approximately half *per cent* of the total surgeries done in the respective districts, whereas in DH-Madhepura, it was four *per cent* and no surgery was performed in DH-Patna and DH-Jehanabad during the period 2014-20. In DH-Madhepura, surgeries were not performed during 2014-17 due to unavailability of eye surgeon. Lesser number of surgeries was attributable to lack of specialist doctor and basic infrastructure in DH-Biharsharif and DH-Hajipur. In DH-Patna, no surgery was performed by the hospital during 2014-20 due to unavailability of surgeon, however, 4,031 surgeries were performed by NGOs in the district hospital for which they have been paid ₹0.29 crore by DHS under NHM during the period 2014-20.

Thus, though state could achieve⁷⁸ 74 to 94 *per cent* against the target of cataract surgeries during 2016-19 under the programme, DHs did not contribute significantly.

2.4.25.1 Strengthening of Eye OPD in DHs

Under the National Programme for Control of Blindness, a non-recurring grant-in-aid of ₹2.00 crore for strengthening of five identified district hospitals was proposed in 2017-18 but was not approved. In 2018-19, the state again proposed ₹3.20 crore⁷⁹ for eight identified districts including Jehanabad and Vaishali and approved accordingly. Under this intervention, specified⁸⁰ equipment for Eye OPD were to be purchased through BMSICL. Scrutiny of financial guidelines and fund allocation of the state for 2018-19 revealed that total approved amount of ₹3.20 crore was allocated to BMSICL. Audit observed in test-checked DHs that the equipment could not be supplied to both the District Hospitals *i.e.* DH-Jehanabad and DH-Hajipur (Vaishali) and thus purpose of the scheme remained unserved. Reason for this was not available.

⁷⁶ Data only for 2014-19

⁷⁷ DH-Biharsharif and DH-Hajipur.

⁷⁸ 74 per cent in 2016-17, 76 per cent in 2017-18 and 94 per cent in 2018-19

⁷⁹ ₹40.00 lakh for each district

⁸⁰ Operating Microscope, A-Scan Biometer, Keratometer, Slit Lamp, Refraction Units, Auto Refractometer, Flash Autoclave, Streak Retinoscope, Tonometers, Direct Ophthalmoscope Nd-Yag Laser etc.

SHS replied that equipment for eye OPD has been supplied and installed (July 2021) in DH-Hajipur and DH-Jehanabad by BMSICL. The reply was not tenable as out of 23 type of machines/equipment required, only four and two equipment were supplied to DH-Jehanabad and DH-Hajipur respectively.

2.4.26 National Vector Borne Disease Control Programme

NHM Assessor's Guidebook envisages that District Hospitals should have test facility for Malaria (Smear and RDTK), Kala azar, Dengue, Japanese Encephalitis (JE) and Chikungunya under National Vector Borne Disease Control Programme.

Audit observed that test-checked DHs did not have the facility to provide diagnostic services like test for JE and Chikungunya even though four⁸¹ test-checked districts were JE endemic districts.

Further, for clinical management of Dengue and Chikungunya, establishment of ELISA⁸² Reader was under process in all the test-checked DHs. Thus, all the test-checked DHs were deprived of test-facility for Dengue and Chikungunya.

The SHS accepted the audit findings.

2.4.27 Referral system

NHM Assessor's Guidebook for District Hospital, requires that the facility provides appropriate referral linkages to the patients/services for transfer to other/higher facilities to assure continuity of care. To ensure this, checkpoints included – referral slip of patients, advance communication with higher centre, maintaining referral in and referral out register, functional referral linkages to lower facilities, discharge summary to Leaving Against Medical Advice (LAMA)/referral patients, system of follow up of referred patients *etc.*

Audit observed that:

- Four⁸³ test-checked DHs did not maintain the records related to number of referral in-patients who were treated, cured, became LAMA, absconded and died. Resultantly, Audit could not ascertain why such patients were referred in and whether desired health services were provided to them. However, in DH- Biharsharif, information for the period of June 2016 to March 2019 in respect of maternity ward was available.
- Records related to particulars such as number of patients referred, reason of referral, hospital to which referred *etc.* were not maintained in any of the test-checked DHs except in maternity ward of three DHs for partial⁸⁴ period. In DH-Jehanabad, Audit observed that number of referred out patients

⁸¹ Except DH-Madhupura

⁸² Enzyme-Linked Immunosorbent Assay

⁸³ DH-Hajipur, DH-Jehanabad, DH-Madhupura and DH-Patna

⁸⁴ DH-Biharsharif-18/6/2016 to March 2019, DH-Hajipur -2016-19, DH-Jehanabad -except 1/4/2014 to 24/2/2015, 30/8/2016 to 3/10/2016, 18/7/2018 & 16/1/2019.

gradually increased during 2014-19, which was indicative of inadequate services at DHs.

Critical patients were referred to higher Centres due to lack of specialist doctors and infrastructure in DHs. However, there was no specific referral linkages as per NHM Assessor's Guidebook in the test-checked DHs.

2.5 Maternity Services

2.5.1 Antenatal care to the registered pregnant women

A proper antenatal check-up provides necessary care to the mother and helps to identify any complications of pregnancy such as anaemia, pre-eclampsia and hypertension *etc.*, in the mother and slow/inadequate growth of the fetus.

2.5.1.1 Scheduled check-ups of pregnant women

As per guidelines of Antenatal Care (ANC), every pregnant woman should be provided at least four antenatal check-ups including first visit/registration. Hospital has to provide a Mother and Child Protection Card to the pregnant woman which she will carry for all subsequent check-ups/visits and it should be recorded in antenatal register. This helps in monitoring antenatal check-up and post-delivery care.

Audit observed that total number of registered pregnant women was 99,868⁸⁵ in test-checked DHs during 2014-20. However, ANC check-ups wise (1st ANC- within 12 weeks- preferably as soon as pregnancy is suspected, 2nd ANC- between 14 and 26 weeks, 3rd ANC- between 28 and 34 weeks and 4th ANC- between 36 weeks and term) break-up of all registered pregnant women were either not recorded⁸⁶ (except DH-Hajipur where from 2019-20, ANC register was properly maintained) or the ANC register was not maintained⁸⁷ during 2014-20. Thus, monitoring of antenatal check-up was deficient.

Scrutiny of ANC register of sampled month (August 2019) of 2019-20 in DH-Hajipur disclosed that out of total 243 registered pregnant women for ANC, 1st ANC was provided to 243 (100 *per cent*) and subsequently among them 2nd ANC to 91 (37 *per cent*), 3rd ANC to 49 (20 *per cent*) and 4th ANC to 10 (four *per cent*) women was provided. Thus, all four ANC checkups was ensured in only four *per cent* cases.

⁸⁵ 2014-15 (DH-Biharsharif: 1,263, DH-Hajipur:1,920, DH- Jehanabad: 696, DH-Madhepura: 825 and DH-Patna: 7302 = Total-12,006), 2015-16 (DH-Biharsharif: 872, DH-Hajipur: 2,920, DH-Jehanabad: 1,565, DH-Madhepura: 1,872 and DH-Patna: 6,727 = Total-13,956), 2016-17 (DH-Biharsharif: 604, DH-Hajipur: 3,417, DH-Jehanabad:1,017, DH-Madhepura: 3,029 and DH-Patna: Data not available = Total-8,067), 2017-18 (DH-Biharsharif: 827, DH-Hajipur: 3,972, DH-Jehanabad: 5,735, DH-Madhepura: 947 and DH-Patna: 7,950 = Total-19,431), 2018-19 (DH-Biharsharif: 872, DH-Hajipur:5,931, DH-Jehanabad: 6,539, DH-Madhepura: 897 and DH-Patna: 8,876 = Total-23,115) and 2019-20 (DH-Biharsharif: 2,099, DH-Hajipur: 10,463, DH-Jehanabad: 2,561, DH-Madhepura: 914 and DH-Patna: 7,256 = Total-23,293)

⁸⁶ DH-Jehanabad, DH-Madhepura and DH-Hajipur (Maintained during 2019-20)

⁸⁷ DH-Biharsharif and DH-Patna

SHS replied that all registered pregnant women were recorded at ANC clinic in Jehanabad and Vaishali (Hajipur) district. Though, reply may be factually correct, however, ANC check-ups wise breakup of all registered pregnant women was not recorded in DH-Jehanabad.

Identification of pregnant women for special care during checkup

As per guidelines of ANC, each healthcare facility is expected to maintain proper record of pregnant women for better case management and follow-up. Audit observed that despite detection of pregnant women needing special attention⁸⁸, DH-Patna did not maintain their records. Though, record was maintained in other test-checked DHs, special care was not provided to them. Lack of special care was evident from inadequate distribution of IFA (Iron and Folic Acid) tablets, non-availability of medicines required to manage case of eclampsia *etc.*

2.5.1.2 Screening for special blood tests

As per the directive of GoI, each pregnant woman should be tested for Sickle cell trait, β -Thalassemia and Hemoglobin variants. For the screening of these diseases, reagent Nestroft solution was required and NHM fund was also approved separately for this reagent. Audit observed that none of the test-checked DHs had the facility of these tests and reagent Nestroft solution. Reason for the same was not available.

SHS informed that these facilities were available in all Medical Colleges. Though reply may be factually correct, government Medical Colleges are available only in eight districts of Bihar.

2.5.1.3 Iron and Folic Acid supplement to pregnant women

As per guidelines of ANC, all registered pregnant women should be given IFA (100 mg elemental iron and 0.5 mg folic acid) every day for at least 100 days⁸⁹, starting after the first trimester as a preventive measure and two IFA tablets per day for three months as a therapeutic dose to check anemia. This dosage is to be repeated for three months, post-partum. Audit observed that supplementation of IFA tablets to registered pregnant women and anemic pregnant women was not ensured in all the cases in any of the test-checked DHs during 2014-20. In DH-Biharsharif, DH-Hajipur, DH-Jehanabad and DH-Patna⁹⁰ only 53, 46, 61 and 39 *per cent* of registered pregnant women were given IFA supplementation during 2014-20 whereas in DH-Madhepura, it was 87 *per cent* during 2014-20⁹¹.

SHS replied that supplementation of IFA tablets to registered pregnant women and anemic pregnant women was ensured in most of the cases. Reply of SHS

⁸⁸ Hypertension (Blood Pressure more than 140/90), Eclampsia (hypertension with proteinuria and convulsion) and having Hemoglobin less than 11 gm/dl

⁸⁹ Increased to 180 days from 2017-18 as evident from HMIS data.

⁹⁰ Excluding 2016-17 as data for 2016-17 was not available in DH-Patna

⁹¹ Excluding 2017-18 as the data for the year 2017-18 was not readily available

was not acceptable as it was not in line with the actual status observed in the District Hospitals during Audit, as described in the paragraph.

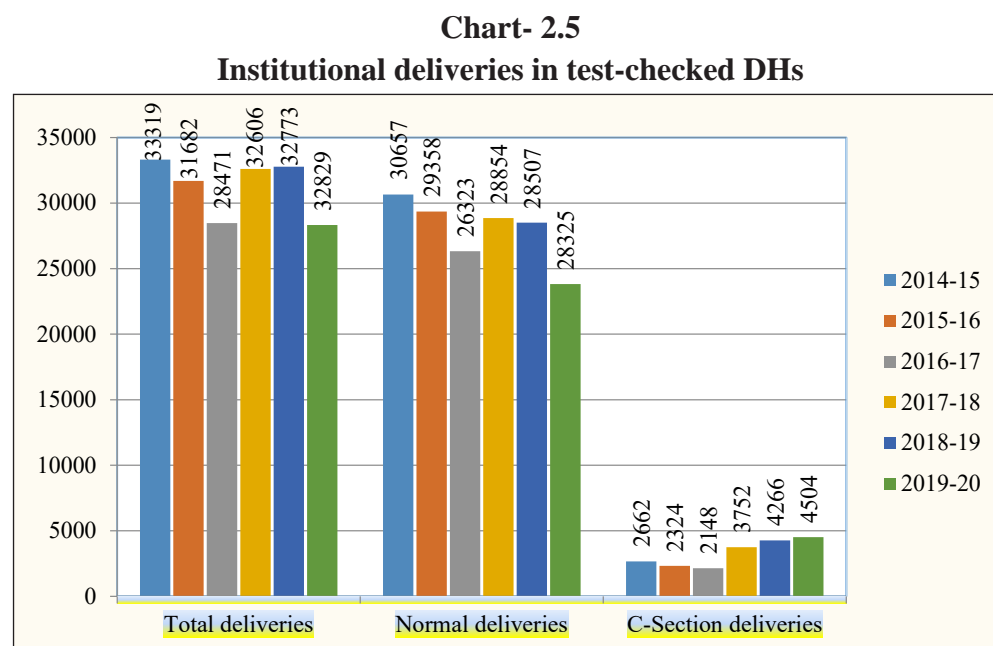
2.5.1.4 Administering of Tetanus injection

Tetanus Toxoid (TT) injection⁹² to all pregnant women is required for prevention of maternal and neonatal tetanus. The first dose should be given immediately and preferably, when women registers for ANC. Audit observed that TT injection was not given to all pregnant women in the test-checked DHs except DH-Biharsharif during 2014-20, despite their availability in stock. In DH-Jehanabad and DH-Patna, cases of non-administering of TT injection were higher. It indicated lack of attention of doctors towards the care of mother and neonates.

In its reply, SHS claimed that TT injection was administered to all pregnant women in DH-Hajipur (Vaishali) and DH-Jehanabad. However, the claim of SHS was not correct as in DH-Hajipur and in DH-Jehanabad, total 45,375 pregnant women were registered during 2014-20, whereas TT injection was administered to only 33,996 women.

2.5.2 Institutional deliveries

Guidelines of *Janani Shishu Suraksha Karyakaram* (JSSK) envisages that both maternal and infant deaths could be reduced by ensuring timely access to quality services, both essential and emergency, in public health facilities without any burden of out-of-pocket expenses. Details of institutional deliveries of five test-checked DHs are shown in **Chart-2.5**.



(Source: Test-checked DHs)

It can be seen from **Chart-2.5** that institutional deliveries decreased by one per cent in test-checked DHs during 2019-20 as compared to 2014-15.

⁹² One or two doses as the case may be.

A negative trend was also noticed in performance of normal deliveries which decreased by eight *per cent* in 2019-20 as compared to 2014-15. Decreasing trend in institutional delivery was attributable to shortage of resources (drugs, consumables, equipment and human resource) available in maternity department of test-checked DHs, as elaborated in succeeding paragraphs.

Further, performance of C-section deliveries increased during 2019-20 as compared to 2014-15 in test-checked DHs. This was due to the fact that out of 14⁹³ test-checked Sub-district hospitals, only one⁹⁴ hospital had C-section facility, otherwise maternity cases requiring C-section were referred to DHs. Absence of C-section deliveries in other test-checked Sub-district hospitals was due to shortage of Specialist Doctors (Obstetrics and Gynecologist).

Despite transfer of C-section deliveries cases from Sub-district hospitals to District Hospitals, total C-Section deliveries in District Hospitals were less than the norm of 10 *per cent* (mentioned in NHM guidelines⁹⁵).

Table -2.37
Percentage of C- Section deliveries during 2014-20

District Hospitals	Range of percentage of C-section deliveries
Biharsharif	15 to 25
Hajipur ⁹⁶	4 to 16
Jehanabad	3 to 4
Madhepura	1 to 5
Patna	3 to 16

(Source: Test-checked DHs)

As shown in **Table 2.37**, C-section deliveries were less than 10 *per cent* in four out of five test-checked DHs. Thus, possibility of compelling the complicated pregnancy cases, which required C-section towards private clinic, could not be ruled out, entailing out-of-pocket expenses contrary to stipulations made in JSSK⁹⁷. This situation too was attributable to insufficient resources such as drugs, consumables, equipment and human resource in test-checked DHs, as discussed in succeeding paragraphs.

SHS attributed the decrease in institutional delivery to ASHA strike during 2018-19. However, no comment was furnished by SHS in respect of status during years other than 2018-19.

⁹³ **Biharsharif** (RH Kalyanbigha, PHC Katrisarai and PHC Noorsarai), **Hajipur** (RH Lalganj, PHC Bidupur and PHC Rajapakar), **Jehanabad** (PHC Kako, PHC Ghosi and RH Makhdumpur), **Madhepura** (PHC Gamharya, PHC Kumarkhand and PHC Gwalpara) and **Patna** Sub Divisional Hospital (SDH), Danapur and RH Mokama) RH: Referral Hospital, PHC: Primary Health Centre.

⁹⁴ SDH, Danapur

⁹⁵ NHM Guidelines on "Engaging General Surgeons for Performing Caesarean Sections and Managing Obstetric Complications" state that around 10 *per cent* of total delivery cases may require C-section.

⁹⁶ Data only for sampled months of 2016-20

⁹⁷ Janani Shishu Suraksha Karyakram (JSSK), entitles all pregnant women to C-section services with provision for free drugs, consumables, diagnostics etc.

2.5.3 Availability of resources

2.5.3.1 Drugs in maternity services

Maternal and New-born Health (MNH) Toolkit prescribes 21 types of drugs for maternity services at hospitals. Drug wise availability in six sampled months (total 182 days of six sampled months) during 2014-20 in test-checked DHs is shown in **Table-2.38**.

Table-2.38
Availability of drugs in test-checked DHs during 2014-20

Sl. No.	Name of the drugs	Availability of drug during sampled months (out of 182 days)				
		Biharsharif	Hajipur	Jehanabad	Madhepura	Patna
1	Inj. Oxytocin	163 (90)	182 (100)	151 (83)	182 (100)	121(66)
2	Tab Metronidazole 400 mg	120 (66)	57 (31)	30 (16)	0	31(17)
3	Tab Paracetamol	182 (100)	31 (17)	30 (16)	29 (16)	0
4	Tab Ibuprofen	45 (25)	0	0	0	0
5	Tab B complex	107 (59)	120 (66)	31 (17)	61 (34)	0
6	Inj. Oxytocin 10 IU	0	0	0	0	0
7	Tab. Misoprostol 200 mcg	110 (60)	182 (100)	121 (66)	123 (68)	25 (14)
8	Inj. Gentamycin	113 (62)	123 (68)	151 (83)	84 (46)	31 (17)
9	Inj. Betamethasone	182 (100)	0	0	0	0
10	Ringer lactate	128 (70)	182 (100)	182 (100)	176 (97)	151 (83)
11	Normal saline	176 (97)	182 (100)	182 (100)	175 (96)	121 (66)
12	Inj. Hydralazine	0	0	0	0	0
13	Methyldopa	99 (54)	0	0	0	0
14	Inj. Calcium gluconate – 10%	59 (32)	20 (11)	31 (17)	31 (17)	90 (49)
15	Inj. Ampicillin	182 (100)	31 (17)	0	0	35 (19)
16	Inj. Metronidazole	138 (76)	61 (34)	59 (32)	87 (48)	31 (17)
17	Inj. Lignocaine – 2%	117 (64)	30 (16)	31 (17)	151 (83)	31 (17)
18	Inj. Adrenaline	27 (15)	31 (17)	92 (51)	146 (80)	31 (17)
19	Inj. Hydrocortisone Succinate	86 (47)	124 (68)	92 (51)	58 (32)	31 (17)
20	Inj. Diazepam	31 (17)	31 (17)	61 (34)	145 (80)	31 (17)
21	Inj. Carboprost	0	0	0	0	26 (14)
Average availability of drugs altogether		98 (54)	66 (36)	59 (33)	69 (38)	37 (21)

(Source: Test-checked DHs) Note: Number in parenthesis indicates percentage

Out of 21 drugs, no drug was available during entire period in all test-checked DHs. However, availability of only four drugs (Inj. Oxytocin, Tab. Misoprostol 200 mcg, Ringer lactate and Normal saline) were found satisfactory during entire period in all test-checked DHs. Further, two drugs (Inj. Hydralazine and Inj. Carboprost) were not available during entire period in all test-checked DHs, three drugs (Tab Ibuprofen, Inj. Betamethasone and Methyldopa) were not available during entire period in three test-checked DHs, Inj. Ampicillin was not available during entire period in two test-checked DHs and Tab Metronidazole 400 mg was not available during entire period in DH-Madhepura.

As per office order (May 2014) of Health Department, Deputy Superintendent, Health Manager and District Programme Manager of concerned DH were

directly responsible for ensuring availability of drugs in District Hospitals. However, CS-cum-CMOs of concerned District, being Head of the medical set up in the district, may also be responsible for ensuring availability of drugs in State Government health facilities in the district. In addition, as a sole procuring agency, BMSICL was responsible for seamless supply of drugs to all State Government health facilities. Non-availability/shortage of drugs was mainly attributable to the fact that rate contract of all drugs was not available with the BMSICL. Non-availability/shortage of drugs had cascading impact on the ability of the hospitals to provide emergency and critical care in maternity cases which was evident from the fact that stillbirth rate in test-checked DHs was much higher than average stillbirth rate of the state.

SHS claimed that sufficient drugs were available in Nalanda (Biharsharif) district. However, specific reply regarding shortage of drugs in maternity department of DH-Biharsharif was not furnished. In DH-Biharsharif, out of prescribed 21 medicines, two medicines (Inj. Carboprost and Inj Hydralazine) were not available in entire test-checked months, 15 medicines were partially available as shown in **Table -2.38**.

2.5.3.2 Essential consumables in maternity services

MNH Toolkit prescribes 20 types of consumables for maternity services at hospitals. Audit observed that average shortage of essential consumables during the sampled period ranged between 30 and 65 per cent. All the test-checked DHs, except DH-Biharsharif and DH-Patna, had heavy shortfalls (more than 50 per cent) of essential consumables required for maternity services as shown in **Table-2.39**.

Table -2.39
Shortage of essential consumables in test-checked DHs during 2014-20

District Hospital	Type of consumables available						Average availability	Shortage (per cent)
	May 2014	August 2015	November 2016	February 2018	May 2018	August 2019		
Biharsharif	DNA*	DNA	12	12	13	11	12	8 (40)
Hajipur	DNA	DNA	4	6	9	8	7	13 (65)
Jehanabad	3	10	9	9	7	14	9	11 (55)
Madhepura	6	11	9	12	12	14	11	9 (45)
Patna	DNA	DNA	DNA	DNA	12	15	14	6 (30)

(Source: Test-checked DHs) *DNA- Data not available

Scrutiny of records revealed that the essential consumables such as draw sheets, baby wrapping sheets, thread for suture, gown for labouring woman, plastic apron (disposable) and identification tags were mainly not available in test-checked DHs during sampled months, which were required for delivery and other maternity services. This adversely impacted providing a clean and safe environment for mother and newborn care in the labour room and wards.

SHS accepted the audit findings and stated that essential consumables were available in Nalanda (Biharsharif) district but specific reply for non-availability

of consumables in DH-Biharsharif and documents in support of reply were not provided. However, reply given by SHS was not acceptable due to the fact that 40 per cent of test-checked consumables were not available during sampled months of 2016-20. Further, essential consumables such as draw sheets, baby wrapping sheets, thread for suture, gown for labouring woman, plastic apron (disposable) and identification tags were mainly not available in the DHs during entire sampled months.

2.5.3.3 Availability of essential equipment in maternity services

IPHS prescribes 28 types (*Appendix-2.6*) of equipment for examination and monitoring of patients under maternity department.

Table -2.40
Equipment not available in maternity wards (March 2020)

District Hospital	Number and name of essential equipment not available
Biharsharif	Baby incubators, Newborn care equipment, Cardio tocography monitor, Crainotomy, Vaccum extractor metal, Silastic vacuum extractor, Cardiac monitor baby and adult, Haemoglobinometer and Public address system – nine (32 per cent) .
Hajipur	Baby incubators, Emergency resuscitation kit – baby, Standard weighing scale, Newborn care equipment, Room warmer, Cardio tocography monitor, Forceps delivery kit, Crainotomy, Vaccum extractor metal, Silastic vacuum extractor, Cardiac monitor baby and adult, Head box for oxygen, Public address system, and Wall clock – 14 (50 per cent) .
Jehanabad	Baby incubators, Emergency resuscitation kit – baby, Standard weighing scale, Newborn care equipment, Double-outlet oxygen concentrator, Room warmer, Cardio tocography monitor, Forceps delivery kit, Crainotomy, Vaccum extractor metal, Silastic vacuum extractor, Cardiac monitor baby and adult, CPAP machine, Head box for oxygen, Haemoglobinometer and Public address system - 16 (57 per cent) .
Madhepura	Baby incubators, Phototherapy Unit, Cardio tocography monitor, Crainotomy, Silastic vacuum extractor, Cardiac monitor baby and adult, Nebulizer baby, CPAP machine and Public address system – nine (32 per cent) .
Patna	Baby incubators, Phototherapy Unit, Emergency resuscitation kit – baby, Newborn care equipment, Double-outlet oxygen concentrator, Cardio tocography monitor, Forceps delivery kit, Crainotomy, Vaccum extractor metal, Silastic vacuum extractor, Cardiac monitor baby and adult, Nebulizer baby, CPAP machine, Head box for oxygen and Public address system - 15 (54 per cent) .

(Source: Test-checked DHs)

As evident from **Table -2.40** that out of 28 essential equipment, nine to 16 types of essential equipment was not available (March 2020) in test-checked DHs. Significant shortage of equipment was observed in DH-Jehanabad (57 per cent), DH-Patna (54 per cent) and DH-Hajipur (50 per cent). Shortage of essential equipment compromised the ability of the hospitals to provide emergency and critical care in maternity cases leading to 21 maternal deaths in three test-checked DHs (DH-Biharsharif-nine, DH-Jehanabad-seven and DH-Hajipur-five) during the

period 2014-20⁹⁸. Further, in the event of non-availability of essential resources, 718 delivery patients were referred to tertiary care hospitals from three⁹⁹ test-checked DHs during 2019-20. Refer-out Register of maternity department was not maintained in DH-Madhepura whereas no records pertaining to refer-out patient from maternity department was made available in DH-Jehanabad.

Further, none of the test-checked DHs executed AMC/Comprehensive Annual maintenance Contract (CMC) for equipment although 14 equipment of four types viz. Pulse oximeter - baby and adult, Head box for oxygen, Double outlet oxygen concentrator and oxygen concentrator were in non-functional condition in DH-Biharsharif, DH-Jehanabad and DH-Hajipur.

2.5.3.4 Human Resource (HR)

MNH Toolkit prescribes skilled personnel for maternity services based on an average of 100 to 200, 200 to 500 and 500 & above deliveries per month in a hospital for quality service delivery and for providing best possible care during pregnancy, delivery and postpartum to the patients as depicted in **Table 2.41**.

Table-2.41

HR required under Maternity services as per MNH Toolkit

Average deliveries per month	Doctors (D)	Supporting Personnel (S)	Total
100-200	4	19	23
200-500	15	26	41
500 & above	17	30	47

Table-2.42

Availability of HR against requirement for maternity services during 2019-20

Particular	Biharsharif	Hajipur	Jehanabad	Madhepura	Patna
Average monthly delivery for the year 2019-20	636	1,075	392	492	141
Requirement of HR (D+S)	17 +30	17+30	15+26	15+26	4+19
Available Manpower					
Doctors	7	7	8	7	7
Supporting Personnel	32	20	13	8	13
Total	39	27	21	15	20

(Source: Test-checked DHs)

As evident from **Table -2.42** that availability of human resource in maternity ward during 2019-20 was not according to MNH Toolkit. Out of five test-checked DHs, four DHs had significant shortage of doctors and supporting staff in maternity department, which ranged from 47 to 59 per cent and 32 to 69 per cent respectively.

Short deployment of manpower in maternity ward of test-checked DHs indicated that due care was not given to manage the delivery related

⁹⁸ In DH-Jehanabad, data of only 2017-20 could be made available whereas in DH-Madhepura, record of maternal death was not made available.

⁹⁹ DH-Biharsharif (240), DH-Hajipur (397) and DH-Patna (81)

complications, ensure satisfactory newborn care and manage other maternal health emergencies.

SHS replied that recruitment has been made by Health Department under NHM during 2021-22. However, no details were provided to Audit, so that the extent of veracity of claim to be ascertained.

2.5.3.5 Physical infrastructure

Contrary to MNH toolkit, Audit noticed that building of DH-Biharsharif comprised three floors including ground floor and maternity department was operationalised on ground floor as well as first floor in the DH. However, ramp was not available in DH-Biharsharif from ground floor to upper floors. Besides, lift facility was also not available in the DH. In absence of ramp or lift, patients were taken to the upper floor through stairs and thus exposing critical patients to risks.

2.5.4 Clinical efficiency

2.5.4.1 Preparation of Partographs

According to Guidelines for Ante-natal care and skilled attendance at birth by ANMs and Lady Health Visitors, Partograph is a graphic recording of progress of labour and salient conditions of mother and fetus. It assesses need for timely action, referral to higher medical facility, if required, for further management. The partograph is to be recorded when a woman reaches active labour.

Scrutiny of records disclosed that partographs were not plotted during 2014-20 in DH-Hajipur while this was not plotted in two¹⁰⁰ test-checked DHs during 2014-19. However, partographs were partially maintained in DH-Jehanabad (Out of test-checked 65 BHTs, partographs were plotted in 22 cases) and DH-Patna (Out of test-checked 25 BHTs, partographs were plotted in 19 cases) during 2019-20. Partograph was partially maintained in DH-Madhepura (out of 110 test-checked BHTs, partographs were plotted only in 16 cases) and DH-Biharsharif (out of 62 test-checked BHTs, partograph were plotted only in 30 cases) during 2017-20 and 2018-20 respectively.

In maternal death audit report of a maternal death in January 2019 in DH-Hajipur, non-maintenance of partograph was mentioned as one of the reasons for the maternal death. Thus, non-preparation of partograph exposed the patients to risk of adverse pregnancy outcomes.

SHS replied that partograph was being recorded in DH-Jehanabad, DH-Hajipur and DH-Biharsharif. Reply was only partially correct, as partograph was not prepared in three (in DH-Hajipur during 2014-20, in DH-Jehanabad and DH-Patna during 2014-19) out of five test-checked DHs.

¹⁰⁰ DH-Jehanabad and DH-Patna

2.5.4.2 Management of preterm labour

As per Operational Guidelines for use of Antenatal Corticosteroids in preterm labour issued by GoI, preterm birth is a risk factor in at least 50 *per cent* of all neonatal deaths. The most common cause of death among preterm babies less than 34 weeks is Respiratory Distress Syndrome (RDS). RDS can be largely prevented by administering injection Corticosteroids (such as Dexamethasone or Betamethasone) to the pregnant woman as soon as she is diagnosed with preterm labour.

Selected labour room register of five test-checked DHs disclosed that age of pregnancy (gestation period) at the time of delivery was not recorded in the labour room records in 1,159 (21 *per cent*) cases out of the total 5,505 delivery cases during the sampled period (May 2018 and August 2019). Out of the remaining, 75 deliveries were recorded as pre-term deliveries, which needed administration of Corticosteroid injection. The injection, however, was not administered in 43 deliveries, while no records regarding administration of the injection were available for the 28 pre-term deliveries, thus constraining Audit examination as detailed in **Table -2.43**.

Table -2.43
Administering Corticosteroids in pre-term deliveries

District Hospital	No. of test-checked delivery cases 2018-20	Deliveries in which age of pregnancy was not recorded	Pre-term delivery cases requiring Corticosteroids		
			No. of pre-term delivery cases	Deliveries not administered with Corticosteroid	Deliveries with no documentation
Biharsharif	1,238	250	10	*RNA	10
Hajipur	2,246	238	35	31	0
Jehanabad	782	268	8	RNA	8
Madhepura	1,047	379	10	RNA	10
Patna	192	24	12	12	0
Total	5,505	1,159	75	43	28

(Source: Test-checked DHs)*RNA-Record not available

Cases of deliveries in which age of pregnancy was not recorded was mainly in DH-Madhepura (36 *per cent*), DH-Jehanabad (34 *per cent*) and DH-Biharsharif (20 *per cent*) during sampled months.

Out of 43 cases in which Corticosteroid was not administered in preterm deliveries, in 13¹⁰¹ cases, Corticosteroid was not administered due to the fact that such injection (Dexamethasone or Betamethasone) was not in stock. However, in 30¹⁰² cases, Corticosteroid was not administered even after availability of the injection in stock due to negligence on the part of in-charge doctors. Further, cross check of Labour Room Register and SNCU admission register of DH-Hajipur disclosed that seven¹⁰³ critical cases of neonates were referred to SNCU

¹⁰¹ DH-Hajipur

¹⁰² DH- Hajipur (18) and DH-Patna (12)

¹⁰³ DH-Hajipur (May 2018-2 cases and August 2019- 5 cases)

from maternity ward. However, only four cases in which Corticosteroid was not administered were found admitted in SNCU. Out of these four cases admitted in SNCU, two neonates did not survive. Further, one case in which Corticosteroid was not administered was born as stillbirth.

SHS accepted the audit observation and stated that administration of Corticosteroid was in practice in DH-Biharsharif. Other districts have been directed to record administration of Corticosteroid for preterm deliveries. Reply of SHS was not verifiable for want of proper documentation.

2.5.4.3 C-section medical records

Audit examined 51 BHTs of C-section surgery cases pertaining to the period 2016-20 in DH-Biharsharif, and observed that contrary to NHM Assessor's Guidebook, records of patient evaluation before surgery, use of surgical safety check-list and post-operative notes were not recorded with any of the BHTs. BHTs of C-section surgery cases were not provided to Audit in other test-checked DHs. It was informed by DHs that records of patient evaluation before surgery, use of surgical safety checklist and post-operative notes were not recorded. In absence of the documentation, there was no assurance that the doctors and other support staff took sufficient measures to deliver quality C-section surgery services.

In its reply, SHS claimed that format¹⁰⁴ for documenting the aforesaid were printed and sent to all districts by the State. Reply, though may be factually correct, Audit noted (during scrutiny of records) that these formats were not filled in test-checked DHs.

2.5.5 Postpartum care

As per guidelines for Antenatal Care and Skilled Attendance at Birth, six weeks after delivery are considered the postpartum period and 48 hours after delivery are the most critical in the entire postpartum period. Therefore, stayal of mother at healthcare facility is required for at least 48 hours after delivery and she should be discharged thereafter in normal case.

Audit observed in test-checked DHs that stayal of mother for 48 hours after delivery could not be ensured in 89 *per cent* of the cases during 2014-20. In DH-Hajipur, DH-Jehanabad and DH-Madhepura, patients either left hospitals themselves or were discharged due to scarcity of beds in the hospital. In DH-Biharsharif and DH-Patna, patients left the hospital within six to eight hours after the delivery at their own risk and against doctor's advice. No reason for this was furnished by the hospital. These facts corroborated that the mother and child were not monitored after delivery in postpartum period.

Year-wise trend of discharge within 48 hours of delivery in percentage of total deliveries in test-checked DHs during the year is given in **Table-2.44**.

¹⁰⁴ L-3 Case Sheet

Table -2.44
Women discharged within 48 hours of delivery in percentage

Name of the DHs	Discharge percentage within 48 hours					
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Biharsharif	79	83	86	81	78	75
Hajipur	96	94	92	86	84	85
Jehanabad	90	90	86	88	96	95
Madhepura	96	99	98	96	98	98
Patna	96	90	DNA*	94	86	86

(Source: Information received from test-checked DHs) *DNA- Data not available

In all hospitals, 75 to 99 per cent mothers were either discharged or left hospital before 48 hours, which is risky for the lives of mothers as well as the new born.

SHS accepted the audit observation and stated that due to high case load and unwillingness of mothers, post-partum stay of 48 hours in hospital could not be ensured.

2.5.5.1 Routine Immunisation at birth

As per national immunisation schedule, Bacillus Calmette Guerin (BCG), Oral Polio Vaccine (OPV)-zero dose and Hepatitis-B vaccine are mandatorily to be given at birth and hospital should ensure their adequate availability.

Scrutiny of records¹⁰⁵ in DH-Biharsharif disclosed that all the newly born children were not ensured mandatory vaccination i.e. BCG, OPV and Hepatitis-B at birth and minimum 11 to 16 per cent of children were deprived of these mandatory vaccines, as shown in **Table 2.45**.

Table -2.45
Details of children not vaccinated

Name of the DHs	Period	Total No. of Children born	BCG	OPV	Hepatitis-B
			Children not vaccinated (per cent with respect to new born children)		
Biharsharif	2018-20	15,312	2,413 (16)	1,681 (11)	1,859 (12)

(Source: Information received from test-checked DHs)

Not administering mandatory vaccines to new born children indicated negligence of the respective hospital authority as vaccines were available during the period in the hospitals.

SHS accepted the audit findings and stated that improvement had been reported in coverage of BCG, OPV and Hepatitis-B during 2020-21.

2.5.6 Janani Suraksha Yojna

Janani Suraksha Yojna (JSY) is a centrally sponsored scheme for promoting institutional delivery. The scheme integrates cash assistance¹⁰⁶ with delivery

¹⁰⁵ Records related to vaccination of children born at hospital was not maintained in DH-Hajipur, DH-Jehanabad, DH-Madhepura and DH-Patna for the period 2014-20, in DH-Biharsharif for the period 2014-18.

¹⁰⁶ Assistance of ₹1,400/- for rural area and ₹1,000/- for urban area.

and post-delivery care. The objective of the scheme is to reduce maternal and neonatal mortality through institutional care.

Table-2.46
Percentage of beneficiaries who got payment under JSY

Year	District Hospitals				
	Biharsharif	Hajipur	Jehanabad	Madhepura	Patna
2014-15	98.14	101.44	96.23	100.84	68.28
2015-16	99.63	86.62	102.81	96.50	64.43
2016-17	97.63	56.92	100.74	68.18	60.71
2017-18	95.52	61.13	97.38	86.08	78.68
2018-19	94.88	57.45	93.93	106.25	66.80
2019-20	84.97	63.26	100.51	79.98	31.91
Overall percentage	95.07	70.53	98.53	89.10	62.78

(Source: Test-checked DHs)

Audit observed shortcomings in payment of entitlement to the beneficiaries in DH-Hajipur, DH-Madhepura and DH-Patna. In DH-Hajipur, 57 to 87 per cent of beneficiaries could get the payment during 2015-20, in DH-Madhepura 68 to 86 per cent of beneficiaries could get the payment during 2016-18 and 2019-20 and in DH-Patna 32 to 79 per cent of beneficiaries could get the payment during 2014-20.

Reason for non-payment as provided by DH-Biharsharif and DH-Jehanabad was non/delayed submission of bank account number. However, reason provided by the DHs was not acceptable as the payment was to be made to the beneficiary immediately after delivery. No specific reason was provided by DH-Hajipur and DH-Patna while no reply was given by DH-Madhepura.

Further, more than 100 per cent payment was made in DH-Hajipur during 2014-15, in DH-Jehanabad during 2015-17 and 2019-20 and in DH-Madhepura during 2014-15 and 2018-19, which was indicative of the fact that payment pertaining to previous year was made in subsequent year.

Further, Audit examined the details of sampled 2,171 beneficiaries in three¹⁰⁷ test-checked DHs during 2014-20 and noticed delays in payment to beneficiaries. The range of delay was 31 to 60 days in 19 per cent, 61 to 180 days in 17 per cent and more than 180 days in three per cent of the test-checked cases. In 13 per cent of the cases, payment was not made. Thus, purpose of immediate pecuniary help to the mothers for better healthcare after birth of child was defeated.

Despite Bihar being among the low performing states in respect of institutional deliveries, due to active participation of Accredited Social Health Activists (ASHAs) and care at public health facilities, there has been substantial increase in number of institutional deliveries in Bihar. Institutional delivery has registered an increase of 7.2 per cent between 2014-15 and 2018-19. However, scrutiny of data of institutional deliveries in test-checked DHs (except DH-Hajipur)

¹⁰⁷ DH-Biharsharif (904), DH-Jehanabad (568) and DH-Madhepura (699); in remaining two DHs, it could not be checked due to unavailability of relevant details

revealed that contribution of DHs has decreased during 2014-15 to 2019-20. Poor implementation of JSY may be one of the reasons for this downfall.

SHS accepted the audit observation.

2.5.7 Maternal Death¹⁰⁸ Review

Maternal Death Review (MDR) is a process to reduce maternal mortality by exploring the lacunae in the health system. As per Maternal Death Review guidebook of NHM, all maternal deaths should be investigated within 24 hours using the prescribed Facility Based Maternal Death Review (FBMDR) format and a copy of the reviewed format should be sent to the District Nodal Officer (DNO) and to the Facility Maternal Death Review (FMDR) committee of the hospital along with case sheet. Hospital will keep a record of all maternal deaths in a register.

Audit observed that total 21 cases of maternal deaths occurred in three test-checked DHs (DH-Biharsharif-nine, DH-Jehanabad-seven and DH-Hajipur-five) during the period 2014-20¹⁰⁹ against which maternal death review was conducted in only seven¹¹⁰ cases. In DH-Madhepura, neither the record of maternal death was maintained nor was any death review conducted. Audit further observed the following:

- i. Maternal death register was not maintained in three¹¹¹ test-checked DHs.
- ii. Total four¹¹² out of seven FBMDR forms were furnished to Audit and scrutiny of which disclosed that these were not filled up fully and the cause and factor leading to death were left blank. Thus, the reason of death was not analysed and therefore, question of taking of corrective measures did not arise.
- iii. Maternal Death Review committee at hospital level headed by hospital superintendent were not formed in test-checked DHs except DH-Jehanabad where committee was constituted in November 2017.
- iv. In two¹¹³ out of three hospitals, where death review was conducted, nothing was on record regarding convening of district level meeting by DNO, recommending corrective measures and action taken by the hospitals as an outcome of those review.
- v. State Health Society also sought a monthly report on maternal death and their review through DHS but the same was not found submitted which indicated deficient monitoring of Department also.

¹⁰⁸ *Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes*

¹⁰⁹ *In DH-Jehanabad, data of only 2017-20 could be made available*

¹¹⁰ *One in DH-Biharsharif, three in DH-Jehanabad and three in DH-Hajipur*

¹¹¹ *DH-Biharsharif (not maintained after January 2015), DH-Hajipur (maintained from January 2019 upto January 2020), and DH-Madhepura (maintained from 27.9.2020)*

¹¹² *One in DH-Biharsharif, two in DH-Hajipur and one out of three in DH-Jehanabad*

¹¹³ *DH-Biharsharif and DH-Hajipur*

Thus, maternal death review was not conducted in most of the cases and the cases in which it was claimed to be conducted was a mere formality.

SHS replied that MDR Committee at DH level was constituted in DH-Hajipur (Vaishali) and DH-Biharsharif. Maternal Death Register were maintained in both the districts.

Audit noted absence of MDR committee in DH-Biharsharif and DH-Hajipur. Moreover, claim of SHS was not accompanied by documentary evidence. However, audit observed that Maternal Death Register only for the period from January 2019 to January 2020 was maintained in DH-Hajipur and no updation had done in the register after January 2020. Maternal Death Register was also not maintained in DH-Biharsharif after January 2015. Constitution of MDR committee in DH-Biharsharif and DH-Hajipur were contrary to the fact.

2.5.8 Healthcare facility for newborn and children

2.5.8.1 Availability of SNCU Services

As per NHM Assessor's Guidebook, Sick Newborn Care Unit (SNCU) is meant to provide medical treatment to low birth weight and preterm infants. Audit observed that all test-checked DHs had SNCU services except DH-Patna. Resources available in these SNCUs and capacity building through training are discussed in succeeding paragraphs.

SHS replied that establishment of Mother Newborn Care Unit (MNCU) is under process in DH-Patna.

(a) Equipment

NHM Assessor's Guidebook prescribes 17 types (*Appendix -2.6*) of equipment and instrument for SNCU. Audit observed shortage of essential equipment and instruments in test-checked DHs as shown in **Table-2.47**.

Table- 2.47
Shortage of equipment in SNCU of test-checked DHs during 2019-20 and neonatal deaths in sampled months during 2018-20

District Hospital	Type of equipment not available (<i>per cent</i>)	Neo natal death (<i>per cent</i>)	Name of essential equipment not available in DHs
Biharsharif	5 (29)	8 (4)	Multipara monitor, Thermometer, Bilrubinometer, Dextrometer and ET Tube.
Hajipur	8 (47)	29 (12)	Multipara monitor, Bilrubinometer, Dextrometer, Phototherapy Machine, Infusion Pumps, Oxygen Hood, Bag and Mask and ET Tube
Jehanabad	4 (24)	7 (4)	Multipara monitor, Bilrubinometer, Dextrometer and ET Tube.
Madhepura	4 (24)	6 (5)	Multipara monitor, Bilrubinometer, Dextrometer and ET Tube.

(Source: Test-checked DHs)

As evident from **Table-2.47**, shortage of essential functional equipment in SNCU ranged between 24 and 47 *per cent* in test-checked DHs during 2019-20. Thus,

the equipment available for SNCU were not sufficient, implying that quality of treatment might have been affected. Audit also noted a positive correlation between unavailability of equipment in SNCU and neonatal deaths in DHs.

SHS replied that one time supply of essential equipment was ensured at the time of inception of SNCU at DH. Afterwards, the supply of equipment is ensured based on demand for respective SNCU. However, gap analysis of essential equipment was not carried out and fact remained that shortage of essential functional equipment in SNCU ranged between 24 and 47 *per cent* in test-checked DHs during 2019-20.

(b) Human Resource

NHM Assessor's Guidebook prescribed availability of fulltime Pediatrician, one Medical Officer per shift, three Nursing staff per shift and one Technician for side lab in SNCU. Audit observed that Lab Technician was not posted for SNCU in test-checked DHs. As per duty roster of August 2019, only two nursing staff in each shift, one to two nursing staff in each shift and two to three nursing staff in each shift were posted in SNCU in DH-Biharsharif, DH-Madhepura and DH-Hajipur respectively against the norms of three per shift. Thus, nursing care in SNCU of these DHs was deficient which was also corroborated from lower discharge rate, higher referral out rate and higher LAMA rate (discussed in succeeding *paragraph 2.5.8.2*) as compared to SNCU of DH-Jehanabad where sufficient nursing staff were posted.

SHS replied that laboratory services of SNCU were provided through the attached DH of SNCU. Nursing staff posting at SNCU was ensured based on availability of staff nurse at DH. Now the strength of nursing was also increased with fresh recruitment. Reply was not tenable because deployment of nursing staff in SNCU was still short against the norms in three test-checked DHs.

(c) Special Newborn Care Ward

IPHS envisages additional 10 beds, where both the mother and the newborn can stay together for neonates who require minimal support such as phototherapy and uncomplicated low birth weight for observation in SNCU. Audit, however, observed that Special Newborn Care Ward (SNCW) was not available in test-checked DHs except in DH-Hajipur (only six bedded) where SNCU facility was available. Thus, the facility of SNCW was not ensured in SNCU for minimal support of neonates through staying together with mother. However, Newborn Care Corners (NBCC) was available in each of the test-checked DHs except DH-Biharsharif.

SHS replied that as per the norms of GoI, there is a provision of establishment of MNCU for stay of mother and new born together in the SNCU unit. Currently, establishment of 17 MNCUs have been provisioned at the DH/SDH level in the current financial year. There is no provision of SNCW at the district level presently.

2.5.8.2 Evaluation of SNCU on the basis of outcome indicators

Test check of records related to SNCU of four test-checked DHs revealed that the average discharge rate, referral out rate, LAMA rate, neonatal death rate *etc.* during sampled months of 2018-20 were as per **Table- 2.48**.

Table- 2.48
Average rate during 2018-20 in test-checked DHs

District Hospital (Total Admission) →	Biharsharif (184)	Hajipur (247)	Jehanabad (157)	Madhepura (132)
Base and Indicators ↓				
Discharge rate (Discharge cases)	56(104)	57(141)	82(128)	58(77)
Referral out Rate (ROR) ¹¹⁴ (Referred cases)	30(56)	25(59)	14(22)	29(39)
LAMA Rate ¹¹⁵ (LAMA cases)	1.10(2)	5.20(14)	0	4.55(6)
Neonatal death rate in percentage (Neonatal death cases)	4.35(8)	11.74(29)	4.46(7)	4.55(6)
Bed Occupancy Rate (BOR) ¹¹⁶	71	67	77	104

(Source: Test-checked DHs)

Analysis of **Table 2.48** disclosed the following:

- Discharge Rate (DR) measures the number of patients leaving a hospital after receiving due healthcare. High DR denotes that the hospital is providing healthcare facilities to the patients efficiently. The DR in three test-checked DHs was lower in comparison to DH–Jehanabad. This indicated that the SNCU of other District Hospitals was under-performing.
- Referral to higher centres denotes that the facilities for treatment were not available in the hospitals. Referral out rate of neonates from SNCU in DH- Biharsharif, DH-Hajipur and DH-Madhepura was extremely higher as compared to DH-Jehanabad during 2018-20.
- LAMA rate of neonates in SNCU of DH-Hajipur and DH-Madhepura was high in comparison to DH-Jehanabad during the period 2018-20, which indicates that service quality of these hospitals was well below the desired level.
- Neonatal death rate in DH-Hajipur was high as compared to other test-checked DHs during the period 2018-20.
- As per IPHS, it is expected that the BOR of a hospital should be at least 80 *per cent*. High BOR is a sign of good productivity of the hospital. The average BOR in SNCU of three test-checked DHs out of four was low against the norm of 80 *per cent*.

2.5.8.3 Family Participatory Care (FPC) in SNCU

As babies in the SNCU are either sick or born with low birth weight, it is important that essential care be provided at home over a longer period of time.

¹¹⁴ ROR = Total No. of patients referred to higher facility × 100 ÷ Total No. of Admissions.

¹¹⁵ LAMA = Total No. of LAMA cases × 100 ÷ Total No. of Admissions

¹¹⁶ BOR = Total patient bed days during the sampled months × 100 ÷ (Total No. of functional beds in SNCU × No. of days in sampled months).

This intervention under the NHM is to provide continuity of care for which parents are trained during their stay in the hospital to provide essential care to their sick and small newborns and explained what to do at the time of crisis.

Audit observed that in two¹¹⁷ out of four¹¹⁸ test-checked DHs where SNCU was functional, FPC was not provided despite allocation of funds¹¹⁹ in 2018-19. This led to non-implementation of FPC under NHM and non-utilisation of funds.

SHS replied that all the SNCUs have at least two KMC chairs, four beds in the step down unit, locker, shoe rack, IEC etc. which has been procured through annual operational cost. This is why the FPC's funds were not utilised. However, there is a requirement of FPC for replenishment of consumables as per requirement of the unit as well as planning of capacity building of caregivers. Budget has been reallocated in the current financial year also and the state is following up for the utilisation of the same.

2.5.8.4 *Pediatric Ward*

NHM Assessor's Guidebook prescribes availability of dedicated pediatric ward in DH. The facility should ensure 24x7 nursing care services, adequate specialist doctors *etc.* in pediatric ward.

Audit observed that out of five test-checked DHs, functional pediatric ward was available (since October 2015) only in DH-Biharsharif. It was noticed that infrastructure of pediatric ward was available in DH-Jehanabad but it was non-functional due to shortage of specialist doctor and nurse. In DH-Madhepura, a room with attached toilet and hand washbasin was upgraded to start pediatric ward but could not be made functional due to shortage of doctor and staff. Further, Audit observed that Pediatric Intensive Care Unit (PICU) was not available in all test-checked DHs during 2014-20. However, In DH-Hajipur, PICU was established in June 2019 and became functional. Thus, proper pediatric care was not available in the test-checked DHs.

SHS replied that the nine out of 38 districts have Pediatric Ward. As of now, 11 districts has established and functional PICU. The process of establishment of PICU in rest of the 27 districts is under process.

2.5.8.5 *Maternity outcomes*

(a) **Stillbirths:** The stillbirth¹²⁰ rate is a key indicator of quality of care during pregnancy and childbirth. As per National Family Health Survey (NFHS)-4 (2015-16), the average stillbirth rate of Bihar was 0.96 per 100 live births. Audit observed that average stillbirth rate in test-checked DHs was even higher, as shown in **Table 2.49**.

¹¹⁷ DH-Hajipur and DH-Jehanabad

¹¹⁸ Excluding DH-Patna, as there was no SNCU, so fund was not approved for them.

¹¹⁹ 0.75 lakh to each district

¹²⁰ Stillbirths are foetal deaths in pregnancies lasting seven or more months.

Table-2.49
Stillbirths during sampled months of 2014-20

District Hospital	Number of live births	Stillbirths	Percentage of stillbirths	Average shortage of resources (percentage) in maternity wards		
				Drugs (sampled months of 2014-20)	Equipment (31 March 2020)	Manpower (31 March 2020)
Biharsharif	3,980	65	1.63	46	32	17
Hajipur ¹²¹	5,283	64	1.21	64	50	43
Jehanabad	2,510	36	1.43	68	57	49
Madhepura	2,905	63	2.17	62	32	71
Patna	1,030	10	0.97	79	54	13

(Source: Test-checked DHs)

High stillbirth rate was observed in DH-Madhepura (2.17 per cent) and DH-Biharsharif (1.63 per cent). Higher stillbirth rate in DHs may be attributed to shortage of drugs, equipment and manpower. This was indicative of inadequate antenatal care and resources in the test-checked DHs.

(b) **Neonatal deaths:** Neonatal Mortality Rate is measured as the number of neonatal deaths more specifically in the first 28 days per 1,000 live births. It reflects the availability and quality of the prenatal, intrapartum and neonatal care services. Neonatal mortality rate of the State (Bihar) was 25 whereas National neonatal mortality rate was 23 per 1,000 live births in 2018. As per Sample Registration System report 2018, Bihar ranked 17 among 22 bigger States/UTs. Among the 22 bigger States/UTs, Kerala, Tamil Nadu and Delhi have already reached the 2030 SDG target for neonatal mortality rate, which is 12 per 1000 live births. Besides, Himachal Pradesh (13), Maharashtra (13) and Punjab (13) were about to reach the SDG target. Thus, Bihar was in the group of higher neonatal mortality rate.

Audit could not ascertain neonatal death rate *vis-à-vis* live births in DHs, as with respect to live births in DHs, Audit could access information about neonatal death in DHs only and not of neonatal deaths occurring in other hospitals/places. However, as per available records produced to Audit, it was observed that higher neonatal death was in DH-Hajipur in comparison to other test-checked DHs as detailed in **Table 2.50**. It was also observed that Peri-natal Asphyxia, Prematurity and Low Birth Weight (LBW) were the main causes of neonatal deaths in test-checked DHs.

Table-2.50
Neonatal deaths during sampled months of 2014-20

District Hospital	Number of live births	Neonatal deaths
Biharsharif	3,980	7
Hajipur	6,124	31
Jehanabad	2,510	9
Madhepura ¹²²	1,999	2
Patna	1,030	Record not maintained

(Source: Test-checked DHs)

¹²¹ Stillbirth data for the sampled month of 2014-15 was not available.

¹²² Neonatal deaths record available only for 2016-20.

SHS informed that 5,612 medical and para medical persons were trained in *Navajat Shishu Suraksha Karyakaram* for managing asphyxia and special care to LBW babies was provided facility of home visit through Field Level Worker (FLW).

Short availability of equipment was mainly attributable to non-identification of essential medical equipment imperative for the functioning of the hospitals, inadequate coverage of medical equipment under rate contract, delay in placement of procurement orders, delay in delivery of medical equipment by the Suppliers. Non-availability/shortage of drugs was mainly due to the fact that drugs were not supplied to DHs by BMSICL because of delay in framing of BMSICL's procurement policy, inadequate coverage of (only nil to 63 per cent) EDL drugs under rate contract, delay in supply of drugs by suppliers. Resultantly, in test-checked DHs, availability of drugs throughout the year could not be ensured.

From the above narration, it is evident that DHs of the State suffered from lack of resources, infrastructure, clinical efficiency and adequacy of services. Because of these deficiencies, patients approaching district hospitals for OPD services, IPD services, maternity services, surgeries and treatment in emergent conditions were likely to be referred and/or passed on to higher facilities, public or private hospitals. Moreover, patients were to purchase drugs from outside.

2.6 Infection and Control

2.6.1 Infection Control Management

2.6.1.1 Standard Operating Procedures: Contrary to IPHS and NHM Assessor's Guidebook, Audit observed that none of the test-checked DHs had prepared SOPs for infection control. Non-availability of SOPs resulted in lack of structured and standard response to issues of hygiene and infection control.

2.6.1.2 Hygiene and infection control: As per Hospital Infection Control Guidelines issued by Indian Council of Medical Research (ICMR), each hospital should constitute a Hospital Infection Control Committee (HICC¹²³) that play role in investigating and controlling outbreak, formulate appropriate guidelines for admission, nursing and treatment of infectious patients, surveillance on sterilisation and disinfectant practices, determining antibiotic policies and immunisation schedules and educating patients and hospital personnel on infection control. The hospital infection measures help in reducing the incidence of hospital infections. Contrary to ICMR Guidelines and NHM Assessor's Guidebook, Audit observed that infection control and prevention and measurement of hospital associated infection were not followed in the test-checked DHs during 2014-20, as shown in **Table 2.51**.

¹²³ *Hospital Infection Control Committee consisting of infectious disease physicians, microbiologists, medical and nursing staff and hospital administrators.*

Table -2.51
Availability of different procedures for prevention and measurement of infection in test-checked DHs

District hospitals	HICC established	Measurement of hospital acquired infection rates	Periodic medical check-up and immunisation of staff	Mechanism for regular monitoring of infection control practices	System for monitoring of hospital acquired infection
Biharsharif	No	No	No	No	No
Hajipur	Yes ¹²⁴	No	Yes ¹²⁵	Yes	Yes
Jehanabad	No	No	No	No	No
Madhepura	No	No	No	No	No
Patna	No	No	No	No	No

(Source: Test-checked DHs)

Thus, because of absence of prescribed structure and institution, hygiene and infection control may not be ensured.

During joint physical verification in DH-Madhepura, scattered garbage and open drainage were seen. Liquid waste was poured into the open drain in front of the emergency. These may be infectious.



Further, in DH-Jehanabad, drain water, garbage, faeces and hospital waste were found scattered. Space behind the newly established PICU was used for open defecation. An open drain of the town passed through the middle of the DH that may be hazardous for locality.

¹²⁴ Established in January 2019

¹²⁵ Total 76 staffs vaccinated with Hepatitis-B and out of these, 18 vaccinated with tetanus also in July 2019.



Open drainage, scattered excreta in DH-Jehanabad

2.6.1.3 Pest, rodent and animal control: Contrary to NHM Assessor’s Guidebook, none of the test-checked DHs had established procedures for pest, rodent and animal control. Consequently, they had no provision for them. Anti-termite treatment of the wooden furniture was also not done in all test-checked DHs. During joint physical verification (August 2021), stray dogs were seen in the campus of DH-Jehanabad. Herd of stray pigs was seen in DH-Madhepura. This may be hazardous for staff, attendants and patients (particularly kids) in the hospital.



Stray dog in DH-Jehanabad

Stray pigs in DH-Madhepura

2.6.2 Cleaning and Laundry

2.6.2.1 Cleaning services

(a) Standard operating procedure for housekeeping: Contrary to IPHS, Audit observed that SOP for housekeeping was not framed in test-checked DHs during 2014-20. This may lead to inadequate housekeeping.

(b) Hygiene practices: Contrary to NHM Assessor’s Guidebook, surface and environment samples were not taken for microbiological surveillance in critical care areas (OT, Pediatric ward) during 2014-20 in test-checked DHs (Except DH-Hajipur). DH-Hajipur collected 31 samples¹²⁶ from OT and Labour room during 2019-20 and sent to microbiological Department of PMCH, Patna for lab testing but report of the same was not provided to DH-Hajipur.

Specific reply to this audit observation was not furnished.

¹²⁶ six and 25 samples vide DS letter nos. 260/28.6.2019 & 49/27.1.2020

2.6.2.2 Laundry services

(a) **Availability of linen:** IPHS prescribes 24 types of linen¹²⁷ that are required for patient care services for hospitals with 101 beds and above. Audit observed that in test-checked DHs, two to 12 types of linen for patient care were available against the required 24 types, as shown in **Table 2.52**.

Table 2.52
Availability of linen in District Hospitals during 2019-20

District Hospital	Types of linen available	Types of linen available with full quantity as per norms	Types of linen available with shortage	Types of linen not available at all
Biharsharif	12	6	6	12
Hajipur	4	0	4	20
Jehanabad	3	1	2	21
Madhepura	4	0	4	20
Patna	2	0	2	22

(Source: Test-checked DHs)

Unavailability and shortage of different types of linen for patient care may result in deficient hygiene and cleanliness in hospitals (**Appendix-2.14**).

(b) **Deficiencies in laundry services:** Contrary to NHM Assessor's Guidebook, Audit observed the following:

- Periodic physical verification of linen inventory was not carried out in any test-checked DHs.
- Provision of separate trolley for distribution of clean linen and collection of dirty linen was not available in all five test-checked DHs.
- Infectious and non-infectious linens were neither segregated nor transported into closed leak proof containers /bags to avoid spread of infection in all test-checked DHs.
- Procedure for sluicing of soiled, infected and fouled linen and sorting of different categories of linen before putting into washing machine /wash tub was not done in test-checked DHs which decreased the chance of hygiene and uniform cleaning of different types of linen. Further, during joint physical verification, it was seen in DH-Biharsharif that washing of linen was done manually¹²⁸ in contaminated environment.
- Pre-treatment of the soiled linen (contaminated with blood and body fluids) was not done in the test-checked DHs.

¹²⁷ Bedsheets, Bedspreads, Blankets Red and blue, Patna towels, Table cloth, Draw sheet, Doctor's overcoat, Hospital worker OT coat, Patients house coat (for female), Patients Pyjama (for male) Shirt, Over shoes pairs, Pillows, Pillows covers, Mattress (foam) Adult, Paediatric Mattress, Abdominal sheets for OT, Pereneal sheets for OT, Leggings, Curtain cloth windows and doors, Uniform/Apron, Mortuary sheet, Mats (Nylon), Mackin tosh sheet (in meters) and Apron for cook

¹²⁸ In small bucket by legs

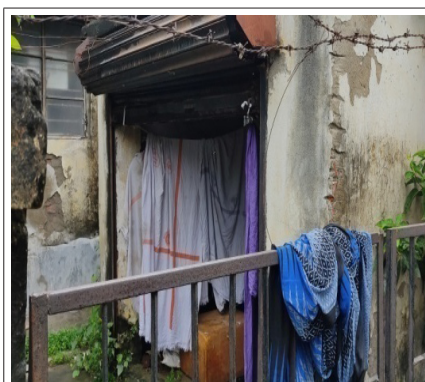
- Time for collection for dirty linen and supply of clean linen were not fixed in all the test-checked DHs (except DH-Biharsharif and DH-Jehanabad) which may cause delayed change or no change of dirty linen at time, which may cause further infection to the patients.
- Procedure for condemnation of linen did not exist in four¹²⁹ test-checked DHs. Also, in test-checked DHs, the system of checking of pilferage of linen did not exist.
- Clean linens were not packed in paper envelopes to ensure infection-free supply of linens to the patients in all test-checked DHs.
- None of the test-checked DHs (except DH-Biharsarif) had designated person to check quality of washed linen.
- During joint physical verification (August 2021) in DH-Jehanabad it was seen that laundry was running in a damp room with unhygienic environment, in the water-logged premises.



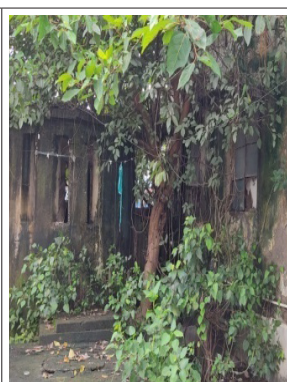
Linens were washed manually in contaminated environment in DH-Biharsharif



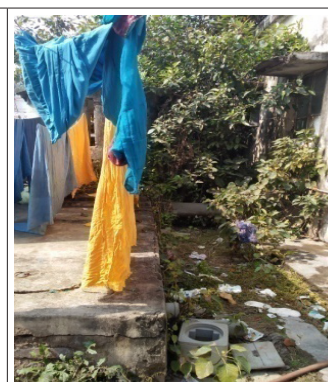
Infectious and non-infectious linen were not segregated in DH-Madhepura



Garage type room was used for laundry purposes in DH-Jehanabad



Dirty space (septic tank) in front of laundry room where linens were dried in DH-Jehanabad



Thus, the patients were not provided hygienic and clean bed linen in these hospitals, exposing them to the risk of infection.

¹²⁹ DH-Biharsharif, DH-Madhepura, DH-Patna and DH-Hajipur

Specific reply to this audit observation was not furnished.

2.6.3 Bio-Medical Waste Management System

Bio-Medical Waste (BMW¹³⁰) can be hazardous, toxic, infectious and even lethal. Therefore, it should not be allowed to get mixed with other municipal waste and needs proper handling. As per the rule¹³¹, hospital should ensure that BMW is handled without any adverse effect to human health and the environment. Handling includes generation, collection, segregation, treatment, storage, packaging, transportation, disposal *etc.* State Pollution Control Board (SPCB) is the prescribed authority for enforcement of the provisions of BMW Management Rules, 2016. IPHS guidelines and BMW Management Rules 2016 stipulates standard for the management of bio-medical waste.

Audit observed following shortcomings in adherence to BMW Management Rules, 2016.

- ***Bio-medical waste management plan***

IPHS stipulated that every hospital should develop comprehensive plan for BMW management in term of segregation, collection, treatment, transportation and disposal of the hospital waste. It should be collected on daily basis from the hospital and as per BMW Management Rules 2016, in no case, it should be beyond 48 hours. All the test-checked DHs were tied with a particular operator¹³² for bio-medical waste management. Audit observed that the operator did not collect the Bio-medical waste daily or within 48 hours from DH-Biharsharif and DH-Madhepura. Hospital did not initiate any action against the operator.

SHS replied (September 2021) that Districts have been directed to maintain the Logbook to capture the details of vehicles arriving at the facility to collect the bio-medical waste. Payment is made based on the details in logbook (*i.e.*, quantity of waste collected, date of collection *etc.*) and deducting the penalties as per KPI defined in the contract agreement. Despite the reply, the fact remained that bio-medical waste was not collected daily or within 48 hours as stipulated in IPHS.

- ***Authorisation of generation of waste***

As per BMW Management Rules, 2016 and IPHS, each hospital will have to take authorisation from SPCB for handling¹³³ of bio-medical waste.

¹³⁰ waste generated from medical activities

¹³¹ Bio-Medical Waste (Management and Handling) Rules, 1998 framed by GoI under Environment (Protection) Act 1986 further superseded and amended vide Bio-Medical Waste Management Rules, 2016

¹³² DH at Biharsharif (M/s S.S. Medical system (1) Pvt. Ltd. and M/s Sangam Mediserv Pvt. Ltd.), Jehanabad (Synergy Waste Management), Madhepura (SembRamky /Medicare Environment Mgt. Pvt. Ltd.), Patna (M/s Sangam Mediserve Pvt. Ltd.) and Hajipur (M/s Medicare Environment Mgt. Pvt. Ltd.)

¹³³ Includes the generation, sorting, segregation, collection, use, storage, packaging, loading, transportation, unloading, processing, treatment, destruction, conversion, or offering for sale, transfer, disposal of such waste

Audit observed that the test-checked DHs were not authorised for handling bio-medical waste either entirely or for major period during 2014-20. Two DHs *i.e.* DH-Hajipur and DH-Patna were not authorised whereas three¹³⁴ DHs got authorisation in latter half of 2018-19. Non/delayed authorisation was attributable to non-submission of application for grant of authorisation to SPCB.

SHS replied (September 2021) that both the DHs *i.e.* DH-Hajipur and DH-Patna have taken authorisation from Bihar State Pollution Control Board. Documentary evidence in support of the claim made by SHS was not furnished. Audit noticed (August 2021) that both the DHs were not authorised by SPCB for handling of waste.

• **Segregation of hazardous, toxic and infectious waste**

Audit observed that none of the test-checked DHs¹³⁵ had system of segregation of BMW. In DH-Biharsharif, all the medical waste was stored and collected by the operator in only yellow colour bags which indicated that segregation and disposal of bio-medical waste was not done as per the protocol.

In DH-Hajipur, only one category (yellow) of waste, *i.e.* human and anatomical waste, was collected by the operator, which indicated either absence of segregation or improper disposal of other categories of waste. During joint physical verification (January 2020 and August 2021) in DH-Jehanabad, Bio-medical waste was found scattered in open space without segregation.



No specific reply to this audit observation was furnished.

• **Segregation, Pre-treatment and disinfection of waste**

Audit observed that none of the test-checked DHs pre-treated the laboratory waste, microbiological waste, blood samples and blood bags through disinfection

¹³⁴ DH-Biharsharif and DH-Madhepura in February 2019 and DH-Jehanabad in October 2018.

¹³⁵ In DH-Hajipur, segregation was done in labour room only during 2019-20

or sterilisation. Also, none of the test-checked DHs segregated liquid chemical waste at source and pre-treated or neutralised them prior to mixing with other effluents. However, in DH-Madhepura, all types of liquid waste were discharged in drain after disinfection with five *per cent* chlorine.

No specific reply to this audit observation was furnished.

- **Labelling of plastic bag/container of BMW**

Audit observed that none of the five test-checked DHs had labelling of bags/containers of BMW.

No specific reply to this audit observation was furnished.

- **Occupational safety and training program to healthcare personnel**

- **Occupational safety:**

Audit observed that none of the test-checked DHs except DH-Biharsharif did ensure the availability of Personal Protective Equipment (PPE) for the persons involved in handling of bio-medical waste, while, in DH-Biharsharif, gloves, head cap, mask, apron and shoes were provided. Further, three test-checked DHs¹³⁶ had not immunised healthcare staff and others involved in handling of BMW, however in DH-Madhepura, it was started from 2019.

SHS replied (September 2021) that PPE were available in every district. Districts have been directed to do health checkup and immunisation of healthcare workers. Reply is acceptance of audit observation.

- **Training program:** Audit observed that no training on the hospital waste management practices was imparted to the Medical Officers and staff in test-checked DHs during 2014-20.

No specific reply to this audit observation was furnished.

- **Monitoring of waste management and maintenance of records**

Audit observed that contrary to BMW Management Rules 2016, none of the test-checked hospitals constituted waste management committee.

Further, Audit observed that test-checked DHs neither had own website nor displayed the annual report on Health Department's website.

Further, three test-checked DHs¹³⁷ did not maintain BMW management register. In DH-Madhepura, it was maintained since March 2019. Though, DH-Jehanabad claimed that they maintained the register, the same was not furnished for the entire period¹³⁸.

SHS replied (September 2021) that all the districts have been directed to maintain records. Regarding other audit observations, specific reply was not furnished.

¹³⁶ During 2019-20, no such immunization was ensured

¹³⁷ DHs at Patna, Hajipur and Biharsharif (2019-20)

¹³⁸ BMW register was not produced for the period of January 2016 to March 2019

Thus, the guidelines for orderly disposal of BMW was overlooked and human health and environment was put at risk.

2.6.4 Internal monitoring

2.6.4.1 Management information system

Audit observed that data for Management Information System (MIS) were not captured in the standard format (as per IPHS) by the DHs and Key Performance Indicators such as Bed Turnover Rate (BTR), LAMA, percentage of cancelled surgeries, number of deaths on operation table, post-operative deaths *etc.*, was not reported to the higher authorities by the DHs in any of the five test-checked DHs. Further, *Rogi Kalyan Samiti* (RKS)/Hospital Monitoring Committee failed to monitor the maintenance of MIS and performance indicators of the hospital and discussion on it. Therefore, no corrective and preventive measure was taken for improvement.

2.6.4.2 Internal audit

As per IPHS norms, internal audit of the services available in the hospital should be done on regular basis (preferably quarterly) and should be done through Hospital Monitoring Committee¹³⁹ (HMC). Findings of audit should be discussed in meetings of HMC and corrective and preventive action should be taken. Internal audit should be done through hospital monitoring committee. Contrary to this, Audit observed that internal audit for services available in the hospital was not conducted by HMC in any of the test-checked DHs as the said committee was not constituted. So, gaps in services available in hospital could not be assessed during 2014-20.

2.6.4.3 Medical audit

As per IPHS norms, medical audit committee should be constituted in the DHs. Audit should be done on regular basis (preferably monthly). Sample size for audit should be decided and records of patients should be selected randomly. Records should be evaluated for completeness against standard content format, clinical management of a particular case. Contrary to this, medical audit and constitution of medical audit committee was not done in test-checked DHs. Resultantly, the evaluation of the completeness of records against standard format and clinical management of a particular case could not be ensured.

2.6.4.4 Death review

IPHS guidelines for DHs enumerate that all mortality in the hospital should be reviewed on fortnightly basis. All maternal deaths at hospital shall come under this purview. In case of maternal death, review should be done in facility based standard form.

¹³⁹ *Hospital Monitoring Committee should comprise of civil surgeon/CMO, medical superintendent, deputy medical superintendent, departmental-in-charge, Nursing Administrator and hospital manager*

Audit observed that out of total 3,080¹⁴⁰ cases of deaths, only seven cases of maternal death and 33 cases of neonatal deaths were reviewed in test-checked DHs during 2014-20 (*Appendix-2.15*).

Further, the RKS/HMC did not discuss and analyse death cases in any of the five test-checked DHs.

2.6.5 External monitoring

2.6.5.1 Monitoring through Rogi Kalyan Samiti

IPHS provides that *Rogi Kalyan Samiti*¹⁴¹ should be constituted in each District Hospital. The RKS¹⁴² should review key performance indicators, patient satisfaction score and action plan prepared by the quality assurance committee and monitor reduction in gaps.

Audit observed that RKS was constituted in all the five test-checked DHs. However, the RKS did not monitor key performance indicators, patient satisfaction score and preparation of action plan by quality assurance committee. Thus, monitoring by RKS was deficient and responsibility for implementation of RKS activities were not discharged by the committee.

Further, State level monitoring through SQAU, SQAC and district level monitoring through DQAC, DQAU and DQT were deficient as discussed.

2.7 Resource Management

2.7.1 Drug management

Accessibility, availability and affordability of good quality drugs at minimum out-of-pocket expenditure are key functions of the public health system to protect the public from the rising cost of healthcare.

Audit observations on various components of drug management and their availability, procurement and storage in the hospitals are discussed in the succeeding paragraphs.

2.7.1.1 Availability of essential drugs in District Hospital

Essential Drug List (EDL) of the Department prescribed 33 drugs for OPD and 112 for IPD for Additional Primary Health Centre (APHC) to DH level in May 2011. Subsequently (March 2018), list was revised and contained 71 drugs for the OPD and 96 drugs for the IPD.

¹⁴⁰ Maternal death-21, Neonatal death-821 and other death 2238.

¹⁴¹ Civil Surgeon (Chairman), chairman of municipal bodies, one nominated person by Zila Parishad, two female and three male members nominated from beneficiaries, Dy. Superintendent, Chairman of District Indian Medical Association, one representative from NGO engaged in health sector of the region and District AYUSH medical officer.

¹⁴² Implementation of the RKS, implementation of all activities under RKS should be done by Chairman, Member-secretary and all members of the RKS

Audit noted non-availability of drugs in four test-checked DHs (except DH-Madhepura where record for the same was not provided). Non-availability of Drugs under EDL (for more than four months) in four test-checked DHs ranged between 69 and 83 per cent during 2018-19 and 15 and 37 per cent during 2019-20, as shown in **Table 2.53**.

Table-2.53
Non-availability of essential drugs in the test-checked DHs

Parameters	2018—19				2019-20			
No. of drugs in EDL for DH	167				167			
Stock out of procured drugs								
Name of test check District	Patna	Biharsharif	Jehanabad	Hajipur	Patna	Biharsharif	Jehanabad	Hajipur
Number of drugs not available for one to two months	3	4	3	1	10	2	11	17
Number of drugs not available for two to four months	4	13	2	3	12	38	21	22
Number of drugs not available for more than four months (<i>per cent</i> *)	125 (75)	115 (69)	122 (73)	138 (83)	25 (15)	28 (17)	62 (37)	30 (18)

(Source: Test-checked DHs)* Figure in parenthesis indicates percentage against the total EDL

2.7.1.2. Irregular/unnecessary procurement of drugs/consumables through local purchase

Department stipulated (September 2013 and December 2015) that if drugs are not available under Rate Contracts finalised by BMSICL and procurement is warranted in an emergency situation, the same could be procured from local vendors within the financial delegation of the indenting officer.

Audit observed that during 2014-19 in DH-Patna, drugs worth ₹77.14 lakh was procured by Superintendent from local vendors, out of which irregularities were noticed with respect to drugs purchased worth ₹38.67 lakh, as described in **Table-2.54**.

Table-2.54
Details of unnecessary purchase of drugs.

Sl. No.	Particulars	Amount (₹ in lakh)
1.	Monetary value of drugs not entered in Stock Register	33.37
	(i) Drugs purchased in the year 2016-17 but not entered in Stock register	3.19
	(ii) Drugs purchased in the year 2016-17, entered in the Stock Register, but not carried forward to next year i.e. 2017-18	30.18
2.	Intravenous set (IV set) purchased in March 2017 without immediate use	4.48
	(i) Intravenous sets (IV sets) transferred to Civil Surgeon, Patna - 55000	2.79

Sl. No.	Particulars	Amount (₹ in lakh)
	(ii) Intravenous sets (IV set) lying unutilised in the store of the hospital and expired in February 2020 -33257	1.69
3.	Surgical Gloves purchased in March 2017 without immediate use	0.82
	(i) Surgical Gloves transferred to Civil Surgeon, Patna -3000	0.38
	(ii) Surgical Gloves lying unutilised in the store of the hospital -3500	0.44
	Total monetary value of irregularities (1+2+3)	38.67

Drugs valuing ₹33.37 lakh were not entered into the stock register. This included drugs of ₹3.19 lakh purchased in the year 2016-17 which was not entered in the stock register and drugs valuing ₹30.18 lakh purchased in the year 2016-17 which was in stock till the year end, but the same was not carried forward next year. As such, neither the veracity of receipt and distribution nor the emergent requirement thereof compelling for the local purchase could be ascertained.

Further, one lakh Intravenous sets (IV sets) and 50,000 surgical gloves worth ₹11.40 lakh were purchased in March 2017 without immediate use thereof as was evident from the fact that only 11,743 IV sets and 43,500 surgical gloves were distributed to the different wards of the hospital. Further, 55,000 IV sets (₹2.79 Lakh) and 3,000 Surgical Gloves (₹0.38 lakh) were transferred to Civil Surgeon, Patna. Remaining 33,257 IV sets (₹1.69 lakh) and 3,500 Surgical Gloves (₹0.44 lakh) were lying unutilised in the store of the hospital. These IV sets expired in February 2020. Thus, consumables worth ₹5.30 lakh was purchased without assessing the quantity of emergent requirement.

Other observations relating to drugs and consumables in DHs

- DHs could not spend the funds available for drugs and consumables. This was mainly due to the fact that drugs were not supplied to DHs by BMSICL (*Appendix-2.16*).
- Contrary to Drugs and Cosmetics Rules, 1945 and NHM Assessor's Guidebook, Audit observed that apart from storing the drugs on the floor, several major deficiencies (such as absence of Air-conditioned pharmacy, expired drugs not stored separately in all test-checked DHs etc.) were prevalent in test-checked DHs which might have resulted in loss of efficacy, shelf life of drugs, and mixing of expired drugs with usable drugs etc. (*Appendix-2.16*).
- Drug Inspectors (DIs) visited four times in two DH (Hajipur-one and Jehanabad-three) and took sample of ten drugs (Hajipur-nine and Jehanabad-one) for quality testing out of which, results of only four drugs (Hajipur-four and Jehanabad-0) were reported and that too with a delay of five to 10 months. Moreover, this visit was done during one year only (2019-20) out of 2014-20. In remaining DHs, the DIs never took the samples of drugs from the respective drug stores during 2014-20 for quality testing.

- In CS-cum-CMO drug store (*i.e.* Central store in the district) of the five test-checked DHs, DIs visited 79 times and reported for only 86 drugs out of sampled 439 drugs and that too with a delay of two to 31 months.

Audit noted that these drugs were distributed to the patients without obtaining NABL quality test reports by DIs and thus without ensuring their quality. Thus, purpose of quality testing of drugs was defeated.

2.7.2 Equipment management

2.7.2.1 Equipment and instrument in DHs

Equipment for District Hospitals were procured and supplied by BMSICL.

Scrutiny of records disclosed deficiency of equipment in test-checked DHs, as shown in **Table No - 2.55**.

Table No - 2.55
Availability of equipment in test-checked DHs

Name of Department	Required number of equipment	Biharsharif		Jehanabad		Madhepura		Patna		Hajipur	
		A*	NA# (per cent)	A	NA (per cent)	A	NA (per cent)	A	NA (per cent)	A	NA (per cent)
Immunisation	16	13	19	7	56	7	56	13	19	7	56
ENT	23	0	100	0	100	0	100	0	100	5	78
EYE	27	17	37	14	48	16	41	0	100	19	30
Dental	34	17	50	16	53	18	47	22	35	13	62
Surgical	53	4	92	13	75	5	91	11	79	5	91

(Source: - Test-checked DHs); *A- Available, #NA-Not available

Immunisation related equipment were not available ranging from 19 *per cent* (DH-Patna and DH-Biharsharif) to 56 *per cent* (DH-Jehanabad, DH-Hajipur and DH-Madhepura). There was no equipment in ENT Departments of four test-checked DHs. Only, DH-Hajipur had 22 *per cent* equipment. In Eye, Dental and Surgical Departments 30 to 100 *per cent* equipment were not available. No survey was conducted about the requirement of equipment in DHs. Thus, in the absence of essential equipment, diseases may not be fully diagnosed. Non-availability of equipment at the DHs was attributable to the fact that procurement process by BMSICL was riddled with systemic irregularities *viz.* absence of procurement policy, inadequate coverage of rate contracts and delay in placement of procurement orders as discussed in succeeding paragraphs.

2.7.2.2 Idle equipment

Rule 126 of BFR stipulated that the specification and quantity of goods to be procured should be clearly spelt out keeping in view the specific needs of the procuring organisations. On the contrary, Audit observed the following:

- An amount of ₹60 lakh was given (April 2013) to BMSICL for 37 types of equipment (such as ICU Bed, ventilators, pulse oximeter, suction machine *etc.*) for operationalisation of ICU in DH-Biharsharif. BMSICL sent seven equipment

(three types only) between August 2013 and July 2014 and the full set (37 types) demanded by the DH was not supplied (January 2020) (**Appendix-2.17**). It was further observed that supplied seven equipment were lying idle in the DH.

(ii) In DH-Hajipur, during joint physical verification of Cardiac Care Unit (CCU) and other departments, it was found that 16 equipment were lying idle since 2014.

(iii) In DH-Patna and DH-Madhepura, two ultrasound machines worth ₹10.39 lakh and ₹6.88 lakh were supplied by BMSICL in September 2018 and January 2019 respectively. However, the machines were non-functional due to non-availability of Radiologist. In DH-Patna, the supplied machine was kept in store for a period of nine months. Further, BMSICL ordered (June 2019) the Superintendent of the hospital to transfer the machine to Medical College and Hospital (SKMCH), Muzaffarpur without specifying any reason.

Further, DH-Madhepura installed the equipment in March 2019 but the same was not in operation till date due to non-availability of technician and radiologist.

Non/short availability of drugs and equipment at the DHs and other irregularities in respect thereof as reported in the preceding paragraphs was attributable to the fact that BMSICL, the sole procurement agency designated by the GoB for supply of drugs and equipment for all establishments under the Department of Health, GoB, itself was marred by systemic flaws viz. inordinate delay in framing of procurement policy, delay in placement of procurement orders and inadequate coverage of drugs under Rate Contracts as elaborated in succeeding paragraphs.

2.7.3 Functioning of the Bihar Medical Services and Infrastructure Corporation Limited (BMSICL)

GoB established (July 2010) BMSICL with an objective to expedite creation of and streamlining of existing infrastructure and services in the healthcare sector. The Managing Director is the Executive Officer of the BMSICL and is assisted by the Chief General Manager (CGM) (Supply Chain) and CGM (Projects) and General Manager (Finance) in its day to day functioning.

2.7.3.1 Irregularities in procurement process

For procurement of drugs and consumables in hospitals, State Government makes budgetary provisions. Besides, financial assistance is also provided under NHM. District Hospitals make payment for drugs and consumables to BMSICL. Deficiencies noticed with the BMSICL are discussed below.

(A) Inordinate delay in framing of Procurement Policy

BMSICL was entrusted (March 2014) to ensure uninterrupted supply of drugs and medical equipment in all the hospitals of 38 districts in State. However, GoB could finalise procurement policy of BMSICL by October 2018, after eight years of constitution of BMSICL. Absence of a sound Procurement Planning

Framework resulted in the failure of the BMSICL to cater to the Healthcare Facilities' (HCF's) indents for medicines.

(B) Inadequate Coverage of Drugs under Rate Contracts

As per information furnished by BMSICL, Essential Drug List (EDL) (2015) stipulated 250 numbers of Medicines and 100 items comprising of medical equipment, devices, etc. The said EDL had been upgraded (March 2018) to 310 numbers of drugs.

The details of the Rate Contracts (RCs) entered into by BMSICL during the period 2014-15 to 2019-20 is shown in **Table 2.56**.

Table -2.56
Rate Contract in force during 2014-20

Year	Total No. of drugs in EDL	No. of Drugs covered under RCs (per cent)
2014-2015	250	0 (0)
2015-2016	250	111 (44)
2016-2017	250	36 (14)
2017-2018	250	38 (15)
2018-2019	310	195 (63)
2019-2020	355	218 (61)

(Source: Information furnished by BMSICL)

BMSICL could not execute the RCs for several drugs listed in EDL during the period 2014-15 to 2019-20, and the percentage of the RCs executed during the said period ranged from nil to 63 per cent only. Inadequate coverage of EDL drugs under the RCs was attributable to absence of a sound Procurement Policy and Proper Planning Framework by BMSICL in the primitive years of its formation which consequently resulted into low procurement activity. Thus, instances of short-supply of several drugs against the total indents received from various hospitals were observed. Non-supply/short-supply of drugs in test-checked districts during the period 2017-18 to 2019-20 is summarised in **Table 2.57**.

Table -2.57
Summary of drugs indented and percentage of non-issued drugs

Name of District	Financial Year	Name of Institution	Total types of drugs indented	No of drugs not issued 100 per cent	No of drugs not issued 75 per cent	No of drugs not issued 50 per cent	No of drugs not issued 25 per cent
Jehanabad	2017-18	CS -cum- CMO of the concerned districts	69	4	4	5	2
	2018-19		138	16	3	5	5
	2019-20		272	NIL	NIL	NIL	NIL
Madhepura	2017-18		68	1	2	1	NIL
	2018-19		124	12	1	3	1
	2019-20		275	17	5	8	19
Nalanda	2017-18		38	3	4	1	NIL
	2018-19		122	11	5	6	3
	2019-20		219	18	9	7	7

Name of District	Financial Year	Name of Institution	Total types of drugs indented	No of drugs not issued 100 per cent	No of drugs not issued 75 per cent	No of drugs not issued 50 per cent	No of drugs not issued 25 per cent
Patna	2017-18	CS -cum- CMO of the concerned districts	166	70	6	5	10
	2018-19		221	66	4	3	7
	2019-20		235	12	13	6	21
Vaishali	2017-18		39	NIL	NIL	NIL	NIL
	2018-19		108	NIL	NIL	NIL	NIL
	2019-20		240	28	1	5	13

(Source: BMSICL)

Following is evident from the **Table -2.57** above:

- As against the indents received from the various hospitals during 2017-18 to 2019-20, the number of EDL drugs that were not supplied by BMSICL to the aforementioned five districts ranged from nil to 70. In Patna District alone, 70 EDL drugs (42 *per cent*) and 66 EDL drugs (30 *per cent*) were not supplied at all during the financial year 2017-18 and 2018-19 respectively.
- As against the number of the EDL that were short supplied to the extent of 25 *per cent* of the total indented quantity and above ranged from nil to 21.
- Total quantity of the individually indented drugs that were not supplied at all to the test-checked five districts ranged from four units (soluble insulin injection in Patna) to 17.65 lakh tablets of Iron Folic Acid in Patna during 2017-18 to 2019-20.

BMSICL replied (August 2021) that the reason for non-supply in selected five DHs were mainly because rate contracts were not in force at that time and the indented quantity was out of stock.

The reply itself is an assertion of the fact that delay in framing the procurement policy led the instances of non-supply/short-supply of EDL Drugs which ultimately resulted into sub-standard quality of treatment consequently affecting healthcare of the patients visiting DHs.

(C) Low Procurement orders for medical equipment by BMSICL

Procurement orders for medical equipment by BMSICL during the period from 2014-15 to 2019-20 is shown in **Table-2.58**.

Table-2.58
Procurement orders of medical Equipment by BMSICL

Years	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Procurement Value (₹ in crore)	NIL	3.73	NIL	0.70	77.72	109.84
Items	NIL	Automated Blood Cell Counters ¹⁴³	NIL	Indelible Marker Ink-Pens ¹⁴⁴	Automated Blood Cell Counters, Dielectric Tube Sealers ¹⁴⁵ etc.	Automated Blood Cell Counters, Syringe pump, Radiant warmer etc.

(Source: BMSICL)

Low value of procurement orders for medical equipment by BMSICL was fraught with the risk of crippling the smooth functioning of hospitals.

BMSICL replied (August 2021) that during 2014-15 to 2017-18, tenders were floated for entering into RCs in respect of indented medical equipment but the tenders were not finalised due to disqualification of technical bids.

The reply itself is an assertion of the fact pointed out by audit.

(D) Inadequate coverage of medical equipment under Rate Contracts

Unlike the EDL, Health Department did not identify the essential medical equipment imperative for the functioning of the hospitals. Number of Rate Contracts¹⁴⁶ entered into by BMSICL for medical equipment during the period 2014-15 to 2018-19 ranged from nil to 64. However, BMSICL entered into 73 Rate Contract Agreements during 2019-20. Inadequate Rate Contracts during 2014-15 to 2017-18 was one of the main reasons for low procurement activity in respect of medical equipment on the part of BMSICL.

(E) Delay in placement of procurement orders

Scrutiny of records disclosed that *vis-à-vis* the indents received from SHS and/or District Civil Surgeon office, the delay in placing of procurement orders from BMSICL end in the test-checked five districts ranged from 15 days to 872 days. Delay in placing of supply orders against the indents received in respect of medical equipment like Automated Blood cell Counters, Blood Collection Monitor, Dielectric Tube Sealers, Donor Couches, Ultrasound Machines, ICU Beds, Radiant Warmer, Blood Bank Refrigerators *etc.* from the HCFs in the five districts ranged between 15 to 872 days¹⁴⁷ during the period 2014-15 to 2019-20.

¹⁴³ Automated Blood Cell Counters are machines that automatically count cells for blood analysis.

¹⁴⁴ Indelible marker ink pen is a fast drying ink and hence can't be wiped once applied on Index finger cuticle and upper portion for vaccination purpose.

¹⁴⁵ Dielectric blood tube sealers are used for sealing blood bag pilot tube through a radio frequency sealing system.

¹⁴⁶ 2014-15 – seven, 2015-16 – seven, 2016-17 – seven, 2017-18 – Nil and 2018-19 – 64

¹⁴⁷ Patna 15-34 days, Jehanabad 29-40 days, Nalanda 29-40 days, Madhepura 29-40 days and Vaishali 29-872 days

Such inordinate delay in placement of supply orders resulted in denial of the intended benefits of the medical equipment to the patients visiting the healthcare facilities in the test-checked districts. The main reasons for delay in placing of procurement orders as stated by the management was non-existence of RCs in respect of the medical equipment indented by the HCFs and the consequent time taken in finalisation of RCs in respect of the medical equipment vide the tendering mechanism resorted to by BMSICL.

(F) Delay in delivery of medical equipment

Scrutiny of records of BMSICL relating to the procurement of medical equipments during 2014-15 to 2019-20 for the test-checked five districts disclosed instances of delay ranging from two to 163 days in delivery of medical equipment as shown below.

Table-2.59
Delay in delivery of medical equipment in test-checked districts

Sl. No.	Item/equipment for supply in hospitals of test-checked five districts	Agreement Clause	Supply period (days)	Delay in Supply (days)	Remarks
1.	11 Automated Blood Cell Counters	Clause 4.5 of the Rate Contract	30	23 to 136	-
2.	80 Automated Blood Cell Counters	Clause 4.5 ¹⁴⁸ of the supply order	120	Two to 163 days	80 Automated Blood Cell Counters were shipped to the selected five districts. 58 machines were delivered to the indenting institutions with delay ranging from two to 163 days.
3.	Medical equipment viz. Ventilator Machines, Blood Collection Monitor, Dielectric Tube Sealer, Donor Couches, Ultra Sound Machines, ICU Beds, Radiant Warmer, Blood Bank Refrigerators etc.	Clause 4.5 of the Rate Contract	30	Seven to 131	-

(Source: BMSICL)

Further, in 2019-20, 42 numbers of Automated Blood Cell Counters machines were installed in the select five districts (namely Patna, Jehanabad, Nalanda, Vaishali and Madhepura) with inordinate delay ranging from 126 days to 337 days. Further, neither the reasons for the delayed delivery nor follow-up with the vendors to mitigate abnormal delay, if any, (other than the invocation of the Liquidity Damages as per Clause 20 of the Rate Contract Agreement at the time of effecting payment to the vendor) was on record.

¹⁴⁸ Prescribed delivery period of 30 days amended vide GM (Procurement)'s Letter dated 5/9/2018

(G) Non- installation of Medical Equipment

Scrutiny of the records of BMSICL disclosed that three medical equipment namely (i) Blood Collection Monitor, (ii) Dielectric tube sealer and (iii) Donor-couch were not installed in DH-Patna even after a lapse of more than 23 months from the date of placement of the supply order. The non-readiness of the site was the main reason for non-installation of these medical equipment for almost two years. This was indicative of deficient planning on the part of Health Department, GoB.

During 2019-20, six units of Automated Blood Cell Counters machines were not installed at HCFs in Patna district notwithstanding lapse of period ranging from 17 to 26 months from the date of placement of procurement order. Further, one unit of Automated Blood Cell Counters machine and one unit of ECG machine was not installed at Jehanabad district despite lapse of a period of 17 months and 27 months respectively from the date of placement of procurement order.

As a result of non-installation of the said medical equipment, the beneficiaries of the DH-Patna were deprived of the benefits of these medical equipment notwithstanding the emergent requirement/indent for the same on the part of the DH-Patna.

Other irregularities noticed in BMSICL

- The Procurement policy as well as the Standard Bidding Document (SBD) of BMSICL was deficient as it did not stipulate time frame for the replenishment of the Not Standard Quality (NSQ) drugs. Drugs sent for Quality tests to the empanelled laboratories were declared NSQ on 203 counts. These drugs included calcium tablets, vitamin tablets, iron folic tablets, oral rehydration salts *etc.* The timing of replenishment of these NSQ medicines to the indenting hospitals was not placed on record. Also, BMSICL did not have any information about the timing of the replenishment of these NSQ drugs to its warehouses. Thus, internal control mechanism prevalent in BMSICL was deficient as it failed to track the timing of replenishment of the NSQ drugs and check the delays, if any, on the part of the supplier.
- Information about the quantum of the drugs that expired in the BMSICL's warehouses and/or in the hospitals and their subsequent replenishment by the supplier and the timing of the replenishment was not placed on record. This was indicative of failure on the part of BMSICL to effectively implement its Drugs and Vaccine Distribution Management System (DVDMS) Portal *i.e. e-Aushadhi* as this information was not being captured and thus the inability to prepare the customised report. Further, the Procurement Policy of BMSICL too was deficient to the extent that it didn't stipulate the timings for the replenishment of the expired drugs on the part of the suppliers.

- Non-capturing of vital information (such as Quality tests failed drugs or expired drugs and their replenishment) in DVDMS portal resulted in the BMSICL's inability to generate the customised reports.

Systemic issues such as deficiency in procurement planning on the part of BMSICL and irregularities in CMC in respect of the procured medical equipment were also noticed at previous instances during the audit of BMSICL. These issues arising on the part of BMSICL had a cascading impact on the supply of drugs and equipment to the DHs, their optimal availability at the DHs, quality provision of health services to the patients visiting the DHs and eventually on the health of the people at large. Thus, BMSICL did not fully meet the intended objectives for which it was established by the GoB notwithstanding the fact that majority of the poor people of Bihar usually depend on Public/Government Health Care Delivery systems to address their preventative and curative health needs.

2.8 Building Infrastructure

To deliver quality health services in the public health facilities, adequate and properly maintained building infrastructure is of critical importance. Examination of records in the Performance Audit disclosed inadequacies and deficiencies in the availability and creation of hospital building infrastructure as discussed in the succeeding paragraph.

While onus of providing land and funds was on Administrative Department for various construction works, BMSICL prepared estimates, accorded technical sanctions and executed works. After completion of works, BMSICL handed over building to the concerned Administrative Department.

2.8.1 Disaster proof hospital building

Contrary to National Disaster Management Authority Guidelines 2016, test-checked DH buildings were neither safe for seismic condition nor they underwent any annual or special maintenance. Thus, hospital buildings were not prepared for disastrous circumstances.

2.8.1.1 Dilapidated condition of building of DH-Jehanabad and delay in commencement of new building

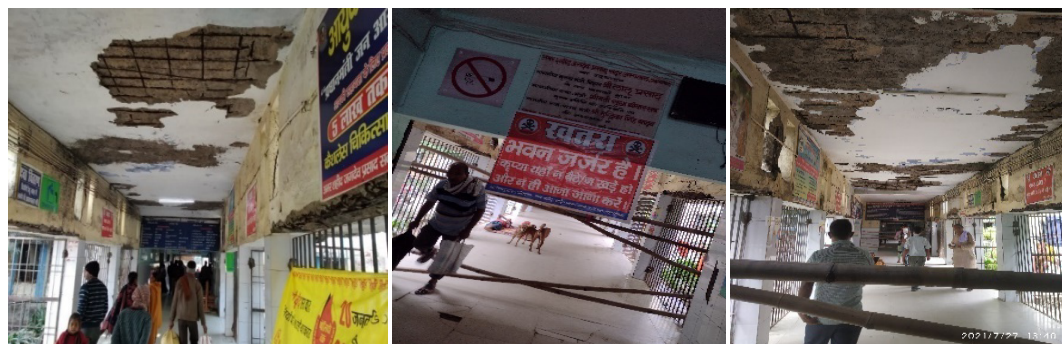
Building Division, Jehanabad¹⁴⁹ certified (July 2017) the blocks C, D and E of DH-Jehanabad as unfit for accommodation and intimated the District Administration for evacuation of these blocks within three days. However, they were continuously being used by the DH till the time of audit (August 2021), thereby seriously compromising the safety of visiting patients¹⁵⁰ and hospital staff¹⁵¹. The said blocks continued being used due to non-availability

¹⁴⁹ *The Engineers of the Building Division, Jehanabad*

¹⁵⁰ *patients and attendants*

¹⁵¹ *hospital staff including doctors, nurses, paramedical staffs, official staffs, staffs engaged in support services and all people who arrived in the hospitals or directly and indirectly engaged to ensure other services of the hospitals*

of alternative space/new building. Resultantly, two children were injured due to the falling of plaster from roof of hospital building (September 2019).



January 2020

August 2021

Condition of Corridor of Block C and D of DH-Jehanabad



January 2020

August 2021

Condition of Building of Labour ward (Block D) of DH-Jehanabad



January 2020

August 2021

Condition of building from inside and outside of DH-Jehanabad

Scrutiny of records further disclosed that though GoB resolved (April 2007) to have 300 beds in DH-Jehanabad, it continued with 97 beds. Subsequently (March 2019), GoB sanctioned ₹93.53 crore for construction of only 191 bedded District Hospital at Jehanabad in light of correspondence with the Jehanabad district administration (April 2018 and July 2018). For execution of the work, agreement was executed (agreement cost of ₹77.35 crore) with contractor (December 2020).

Thus, despite recommendation of Building Division, Jehanabad (July 2017) and injury of two children (September 2019), DH-Jehanabad continued to be run in the condemned building. The same was also confirmed during joint

physical verification (December 2019) of DH-Jehanabad, where Block C and D (labour ward) were in dilapidated condition. Delay of nearly three years in finalising the tender process was indicative of a non-serious approach by the Health Department towards this issue.

Other observations relating to building infrastructure

- Out of total available funds (₹10,742.64 crore), expenditure incurred by BMSICL on infrastructural projects was only ₹3,103.37 crore (29 per cent) during 2014-20. Slow pace of execution of infrastructure works resulted in blockage of funds. Out of the total 1,097 projects undertaken by BMSICL during 2014-20, only 187 could be completed while 523 were still in progress and 387 (35.28 per cent) were yet to commence. Out of 387 projects, 45 could not be initiated owing to non-availability of land whereas other projects were in tendering or in land acquisition stage (**Appendix-2.18**).

In test-checked districts, Audit observed that total 495 works with sanctioned cost of ₹13,434.63 crore were taken up during the period 2014-20, only 113 works (23 per cent) could be completed with a total expenditure of ₹301.27 crore.

- Assessment regarding repair, maintenance and upkeep of buildings was not carried out by Building Construction Department, as informed by DHs. No information was available about funds spent on repair and maintenance of buildings during 2014-20 from RKS. CS-cum-CMO did not maintain any record relating to repair and maintenance.

2.9 Conclusion

Department did not prescribe any specific standard/benchmark with respect to service delivery in a District Hospital. In the absence of standards/norms, the gap analysis therein could not be carried out. Resultantly, a meaningful budgetary exercise for ascertaining requirement of resources and funds for the District Hospitals could not be carried out. Planning exercise remained limited to allocating the budgeted funds to DHs, but without any perceptible basis.

Further, in the absence of registration of DHs under the Clinical Establishment Act, meeting the minimum level of standards as mentioned in the Act was unverifiable.

DHs were not assessed for ISO, NABH, NABL, JCI *etc.* accreditation, as they did not apply for the same during 2014-19.

With respect to Indian Public Health Standards (IPHS) and other guidelines, line services *viz.* OPD services, IPD services, ICU services, OT services, maternity services *etc.*, and support services *viz.* diagnostic/radiology, blood bank, diet management and ambulance services *etc.*, provided in test-checked DHs were deficient. Deficiency was in terms of inadequate basic facilities in OPD, shortage

of specialist doctors and other support staff, unavailability of emergency care facilities in accident and trauma cases and other in-patient services, shortage of drugs, consumables and equipment, unavailability of OT services for emergency surgeries or elective surgeries, unavailability of required diagnostic services, shortage of ambulances equipped with life support and other equipment *etc.* Because of these inadequacies, patients approaching District Hospitals for OPD services, IPD services, surgeries, treatment in emergent conditions were likely to be referred and/or passed on to higher facility public or private hospitals. Moreover, patients were to purchase emergency drugs from outside.

Vacancies in the cadre of doctors and other staff were attributable to inadequate recruitment and selection by GoB. Shortage of drugs and equipment was mainly due to inadequate coverage of drugs and medical equipment under rate contracts by BMSICL and delay in procurement and delivery.

District Hospitals are vital component of the public health system in Bihar. Despite increase in total public health expenditure and expenditure incurred by District Hospitals in Bihar during 2014-20, the test-checked hospitals fared woefully on the outcome indicators relating to productivity, efficiency, service quality and clinical care capability of the hospitals, as noted by Audit.

2.10 Recommendations

In light of Audit findings, the State Government may consider implementing the following recommendations.

- State Government should prescribe/adopt standards and norms for provisioning of services and resources for District Hospitals as envisaged in Clinical Establishment (Registration and Regulation) Act 2010 and Bihar Clinical Establishments (Registration and Regulation) Rules 2013.
- Efforts should be made by the DHs to get accreditation/ certification from ISO, NABH, NABL, JCI *etc.* for standardisation of services.
- Gaps between the prescribed standards and existing services delivery should be reviewed and efforts may be made to address the gaps.
- Long term planning of the Health Department may be based on gap analysis and improvement in line and support services may be attempted accordingly.
- Budgeting exercise of the Health Department should take input of District Hospitals into consideration so that funds may be allotted as per the requirement to improve service.
- Department should ensure recruitment of required number of Doctors, nurses, paramedical and other support staffs to operate essential medical services.
- Availability of adequate manpower, drugs and equipment in District Hospitals may be closely monitored by the top management of the Department.

- BMSICL/Health Department should review the gaps in supply chain of drugs and medical equipment and address the delay and shortage in supply.
- The monitoring mechanism should be revamped by including measurement of outcome indicators pertaining to productivity, efficiency, service quality and clinical care capability of the hospitals.
- Department should ensure active surveillance regarding adherence to Bio-Medical Waste Management Rules 2016 to identify any potential issues for reducing the spread of infectious diseases.
- Maintenance management of hospitals buildings should be strictly monitored to ensure a conducive environment in the hospitals.

