सत्यमेव जयते

Report of the Comptroller and Auditor General of India

Performance Audit of Select District Hospitals in Meghalaya

for the year ended 31 March 2019

भारतीय लेखापरीक्षा और लेखा विभाग ✦ INDIAN AUDIT AND ACCOUNTS DEPARTMENT

लोकहितार्थ सत्यनिष्ठा
Dedicated to Truth in Public Interest

GOVERNMENT OF MEGHALAYA

Report No. 2 of 2020

Report of the Comptroller and Auditor General of India

on

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TABLE OF CONTENTS

PREFACE

This Stand Alone Report of the Comptroller and Auditor General of India containing the results of Performance Audit of Select District Hospitals in Meghalaya for the period 2014-19 has been prepared for submission to the Governor of Meghalaya under Article 151 of the Constitution of India.

District Hospitals are set up for providing a plethora of services for preventive, diagnostic and curative health care to the people in the district, at an acceptable level of quality, and be responsive and sensitive to the needs of the people. The focus of the audit is to assess the role of the district hospitals in providing the envisaged health care services to the people in an affordable and timely manner and of the expected quality standards and norms.

Audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

EXECUTIVE SUMMARY

About the Report:

The Report is about the Results of a Performance Audit of Select Public Health facilities of secondary care (District-level Hospitals) and primary care (one CHC and one PHC), in the State of Meghalaya. We covered the period from 2014-15 to 2018-19. The audit examination included records maintained in the office of the Commissioner & Secretary, Health and Family Welfare Department, Director of Health Services (DHS), Mission Director of National Health Mission (NHM), State Project Management Unit (SPMU) of NHM, Joint Director of Health Services (SS)/ Medical Superintendents of selected District Hospitals (DHs), DM&HOs of four selected districts *i.e.* Shillong, Nongpoh, Tura and Jowai and Senior Medical Officer/ Medical Officer of selected CHC and PHC.

What has been covered in this audit?

In this Performance Audit we have focussed on patient care given by the primary and secondary care levels in the State. We assessed the availability of basic infrastructure facilities in the State, adequacy of manpower in the selected DHs and various Services provided therein like Out-Patient and In-patient Services, Maternity Services, Emergency Services, Drug Management, Infection Control, Bio Medical Waste Management, Diagnostic Services, Fire control measures *etc.* based on pre-determined performance indicators/ criteria in the sampled district level and block level hospitals (CHC and PHC). We have adopted the Indian Public Health Standards (IPHS) guidelines as prescribed by Government of India which are a set of uniform standards envisaged to improve the quality of health care delivery in the country as well as State norms as applicable for benchmarking various audit findings.

What have we found?

We found significant areas for improvement in the healthcare needs of the people as highlighted below:

Financial Resources

Funds under State Budget

The budget allotment and expenditure of the Health and Family Welfare Department against the State Budget during the period 2014-19 was 6.19 *per cent* and 7.51 *per cent* respectively as against an envisaged allocation of at least eight *per cent* of the total budget for health as per the National Health Policy, 2017. However, in 2018-19, the State Government increased its health spending to 8.76 *per cent* of its total expenditure. The Department failed to fully utilise the allotted funds during 2014-19, except during 2015-16, with the unspent funds ranging from six (₹ 41.56 crore) to 14 *per cent* (₹ 172.24 crore). The capital expenditure on creation/ strengthening of infrastructure facilities constituted only 9.2 *per cent* of the total expenditure during the period. We

therefore recommend that the Department could further improve its spending on health care.

(Paragraph 2.1.1)

Funds under National Health Mission (NHM)

Out of the total available funds of ₹ 1407.85 crore under NHM (a CSS programme) during 2014-19, the Mission Director NHM utilised only ₹ 795.04 crore *i.e.* the expenditure was 56 *per cent* and the unspent funds during 2014-19 ranged between 30 to 58 *per cent*. The DHS did not provide the itemised details of matching share to be contributed by the State Government on this CSS programme and hence adequacy of State's contribution could not be analysed.

(Paragraph 2.1.3)

Recommendations

- *The State Government may enhance the budget provision and expenditure on healthcare services to ensure that adequate and quality healthcare infrastructure and services are provided to the people of the State; and*
- *The State Mission Director, NHM may enquire the reasons for suboptimal or no spending on specific health programmes being administered in the State and ensure optimum utilisation of funds received under various National Health Programme through effective implementation and monitoring.*

Essential Resources Management

Shortage of doctors and nurses

There was a shortage of 50 doctors including specialist (24 *per cent*) in the hospitals in the State against the State's norms while the shortfall ranged from 13 to 65 *per cent* (87 Doctors) in the test-checked DHs during the period 2014-19. The sanctioned posts of doctors were not fully filled up resulting in overall 15 *per cent* vacant posts against the 136 sanctioned posts in the test-checked DHs. The vacant posts of doctors were nine *per cent* in Shillong CH and 29 *per cent* in Nongpoh CH.

We noticed that the State Government had neither enforced the Bond Conditions for doctors to compel them to serve in State Hospitals nor had they taken positive measures to incentivise the doctors to join government service, resulting in acute shortage of general and specialist doctors in the State and the test checked districts.

As regards Nursing Staff, based on the IPHS norms, there was a 22 *per cent* shortage of staff nurses in the test-checked DHs.

Though the OPD and IPD patient load at Shillong CH increased by 10.71 *per cent*, Nongpoh CH by 50.73 *per cent* and Jowai CH by 52 *per cent*, over the period, the sanctioned strength of the medical and para-medical staff, the Department had not revised the same, putting immense pressure on the existing health systems.

(Paragraphs 3.1.1, 3.1.2 & 3.1.3)

Recommendations

- *Keeping in view the fact that Health is a State subject, the State Government may come up with a policy intent to address shortfalls in the Human Resources for the State Health Sector, to improve quality of health care.*
- *To arrest the tendency of Doctors not joining the Government Health Facilities, State Government needs to take stringent action to enforce the Bond conditions for enforcing services of Doctors in rural areas. The State Government also needs to take positive measures such as special allowances, availability of accommodation, etc. to incentivise doctors to get posted to rural/ hilly area of the State. They can enquire about such measures being taken by other States.*

Non availability of District Hospital in three districts

Three districts *viz.* (i) North Garo Hills district; (ii) East Jaintia Hills district and (iii) South West Khasi Hills district are yet to have DHs (December 2019), since the Department had not planned for them.

(Paragraph 3.2.1)

Overall shortage of CHCs, PHCs and SCs

There was an overall shortage of 536 Centres/ 113 Primary Health Centres and eight CHCs across the eleven districts of the State, constituting a shortfall of 54, 24 and 23 *per cent* respectively (as on March 2019), underlining the need to improve the health infrastructure in the districts and villages.

(Paragraph 3.2.2)

Recommendation

The State Government may ensure setting up of district hospital in all the districts as well as adequate number of SCs/ PHCs/ CHCs so that universal accessibility of healthcare is provided to all sections of society.

Non availability of blood bank services

Blood bank was available only in the Civil Hospital (CH) of Jowai while no functional blood bank was available in other test-checked DHs, as required as per norms. The blood bank at Nongpoh CH was not made functional (December 2019) even after incurring an expenditure of ₹ 1.14 crore since the State Government had not sanctioned manpower for running the service. As a result, we saw maximum referrals being made out of these districts to Shillong and other places, risking life of patients in critical conditions.

(Paragraphs 3.2.3 & 3.2.4)

Recommendation

The State Government may ensure availability of blood bank in all the DHs, ensure completion of sanctioned projects in a timely manner and make them functional with required manpower and equipment.

Non-availability of critical equipment for health facilities

The State Government has no Equipment Procurement Policy (EPP) or any Standardised norms/ procedures for procurement of equipment for different health facilities and have neither adopted the IPHS norms. None of the test-checked DHs were fully equipped with the essential equipment. Further we observed frequent breakdown of available critical equipment due to inadequate maintenance thereby impacting the efficiency and appropriateness level of health care provided in the test-checked DHs.

(Paragraph 3.3)

Recommendations

- *State Government may ensure availability of full range of essential equipment in every hospital, particularly in view of the increasing reliance on diagnostics for treatment of patients.*
- *Proper maintenance of equipment through Annual Maintenance Contracts may also be ensured to reduce the breakdown time of critical equipment for diagnosis.*

Non-availability of essential drugs

The Health Department had persistently provided less funds than those demanded by the hospitals for drugs, during the period 2014-19. As a result, out of the 60 sampled essential drugs, 42 to 53 *per cent* of the drugs were never supplied to the test-checked DHs, while 6 to 18 drugs were 'stock out' for a period ranging from 1 to 29 months. The serious non-availability of essential drugs in the test-checked DHs, defeated the State's free drugs policy and compelled the patients to purchase the prescribed medicines from the open market out of their pocket.

(Paragraph 3.4.2)

Recommendations

- *The State Government may put in place a comprehensive drug policy according to the need of hospitals to ensure all time availability of essential drugs in each hospital in order to avoid 'stock outs'.*
- *They may ensure that a formulary of drugs is prepared by each hospital on the basis of disease patterns and inflow of patients. The State Essential Drug List (SEDL) be updated accordingly.*
- *Storage of drugs under conditions prescribed in the Drugs and Cosmetics Rules, 1945 to maintain their efficacy may be ensured, before being administered to the patients.*

Delivery of Healthcare Services

OPD Services

The average patient load per counter per hour in Shillong and Tura MCH was 33 and 26 respectively as against the norm of 20 patients per hour for registration. We also found that the OPD hours adopted by the test checked DHs were not uniform ranging from three to five hours which was below the standard of six hours, thereby impacting availability of OPD services to the patients.

(Paragraph 4.1.2)

The Out-patient Department of the test-checked district hospitals had various shortcomings in availability of basic facilities like non-availability of separate toilets for men and women, disabled friendly toilet and washbasin, portable drinking water, online registration, crowding and in-adequacy of suitable seating facility, *etc.* Further, except for Shillong, the registration of patients was not computerised in the other three DHs.

(Paragraph 4.1.4)

Recommendation

- *The State Government may ensure availability of basic facilities/ services in the OPD of each hospitals as prescribed in the Assessor's Guidebook for Quality Assurance of Services in District Hospitals, 2013 (Vol-1).*
- *They may ensure documentation/ computerisation of referral cases and clinical history of patients.*

IPD Services

Services for IPD were not comprehensive since Centres/ Units for Accidents & Trauma and Burns were not available in any of the test-checked DHs, while Dialysis and Psychiatry indoor services were available only in Shillong CH and Jowai CH respectively. Further, Nangpoh and Jowai CH could not provide surgical interventions in ENT/ Ortho related cases for want of OT facilities and apparatus. Due to non-availability of all in-patient services, the DHs could not provide comprehensive health care services and patients had to visit costly private hospitals/ clinics or Shillong CH for their healthcare needs. None of the test-checked DHs had maintained computerised data of admissions/ referrals and treatment given to the patients.

(Paragraphs 4.2.1 & 4.2.2)

Intensive Care Unit services

ICU service was available only in Shillong CH. The DHS had not even planned for ICU services in the remaining three hospitals. Due to absence of ICU facility in the three DHs, patients in emergent conditions were likely to be referred and/or passed on to other/ private hospitals, thereby exposing them to risks of delayed care.

(Paragraph 4.3)

Absence of Accident/ Trauma and Burns Care Centres

Despite the requirement to have Trauma and Burns care centre, the facility was not available in any of the test-checked DHs. In absence of functional Trauma care centre, patients with serious injuries were referred out to facilities located within and outside the State thus, thereby losing the golden hour, to save the life of the victims.

The construction of State Spinal Injury centre sanctioned in 2018 and the Trauma Centre for Shillong CH due for completion by September 2018, did not even commence despite funds of ₹ 9.08 crore made available by GOI.

(Paragraphs 4.2.2 & 4.6)

Diagnostic Services

The Diagnostic Services in the test checked hospitals were inadequate to the extent of radiological equipment not being available. The imaging equipment available were frequently non-functional for want of proper maintenance. As regards Laboratory Equipment, in test checked DHs, non-availability of essential equipment and shortages in available equipment impacted the availability and timeliness of comprehensive diagnostic services to the public. There was an overall shortage of 25 Lab Technicians (69 *per cent*) in the four test checked hospitals, which was one of the main reasons for the high turnaround time for testing services in the selected DHs.

(Paragraphs 4.7 & 4.8)

Patient Rights, Grievance Redressal

The State Government launched (December 2012) Megha Health Insurance Scheme (MHIS) to provide health insurance to all the residents of the Meghalaya, excluding State and Central Government employees and reduce out-of-pocket expenses of the residents of the State. There were about 168 empanelled hospitals/ health facilities in the State and about 5.54 lakh beneficiaries (households) registered under the scheme.

Grievance Redressal Committee/ Cell were not found in all the hospitals impacting feedback on the adequacy and quality of patient services.

(Paragraphs 4.10.2 & 4.10.3)

Patient safety

We found that fire safety of patients, attendants, medical personnel and the hospital buildings had not been ensured by the Hospital administration and neither was any documentation available of fire safety measures taken during the period covered.

(Paragraph 4.11)

Recommendations

- *Government may proactively synergise availability of specialised in-patient services along with the essential drugs, equipment and human resources in district hospitals.*
- *OT services be made available in all the DHs with required manpower, equipment and drugs.*
- *The availability of round the clock accident and trauma services in DHs needs to be ensured as per the norms for DHs.*
- *The quality of diagnostic services which are crucial for patient care and treatment be made comprehensive as per requirements. The State Government/ hospital administration must ensure that available equipment are functional and turnaround time for services is reduced.*
- *The hospitals may rigorously adhere to the National Building Code 2016 to ensure safety of patients/ attendants/ visitors and the hospital staff from fire incidents. The Hospital administration may also ensure adequate documentation of availability of fire safety measures for verification.*

- *The grievance redressal mechanism be activated so that hospitals improve performance by tailoring interventions effectively to address the issues related to patient satisfaction.*

Support Services

Storage of Drugs

The prevailing system of storage of drugs in the test-checked hospitals was not conducive for orderly storage and as per norms/ parameters making the drugs susceptible to damage, contamination and theft. The Hospital administration was negligent in risking lives by storing poisonous material not meant for human consumption, along with the drugs.

(Paragraph 5.1)

Cleanliness in Hospitals

In the test checked DHs the Cleaning services and hygiene practices were not satisfactory to provide an assurance regarding an infection free environment to the medical staff and patients, due to poor conditions of toilets, drainage facilities, seepages in hospital rooms, linen maintenance, norms for safe distance between hospital beds and for size of corridors not being met.

(Paragraphs 5.3.1, 5.3.2 & 5.3.3)

Bio-medical waste management

BMW was not being collected on daily basis in the test-checked DHs as envisaged in the BMW Rules. The Staff had been trained on BMW handling in only two of the four test-checked hospitals. Effluent Treatment Plants were not established in Shillong, Jowai and Tura hospitals, thereby posing an environment and patient safety hazard, while the ETP at Nongpoh constructed at a cost of ₹ 45.35 lakh could not be made functional for want of inspection by State Pollution Control Board as on June 2020.

(Paragraphs 5.4.4, 5.4.5 & 5.4.6)

Recommendations

- *The infection control mechanism should be embedded in hospital through proper monitoring by the Hospital Infection Control Committee. Adoption of pest and rodent control measures, methods of sterilisation of OT instruments prescribed, microbiological survey, proper immunisation, medical check-up and training of staff should be ensured by the hospital administration.*
- *The BMW Rules should be adhered and followed rigorously to provide an infection free environment in the hospital.*
- *Effluent Treatment Plants may be constructed in all the hospitals. State Government needs to effectively pursue the matter of inspection of ETP at Nongpoh CH with SPCB.*

Maternal and Child Care and Cancer

Maternal Mortality Rates (MMR) and Infant Mortality rates (IMR) in the State

During 2014-19, the State's average MMR was 226 per one lakh live births and that of IMR was 28 per 1000 live births. Both the MMR and IMR showed a declining trend, which is a positive sign. However, the State's target of 150/100000 live births set-forth for achievement by 2017 was yet to be achieved. The State's MMR at 197 continued to be higher than the all India MMR of 113 for 2016-18.

During 2014-19, the average IMR of two test-checked DHs *viz.* Tura MCH and Jowai CH with 72 and 36 per 1000 live births was much higher than the State average of 28 per 1000 live births. The IMR of Tura MCH had gone up to 78 in 2018-19. Neonatal deaths was the main contributor to the State's IMR. Further, the State could not convincingly explain for the huge mismatch of figures (667,464) between pregnant women registered and the deliveries (428,917) in the State, thereby indicating that they needed to monitor institutional deliveries of registered women, more strictly.

(Paragraphs 6.1.1, 6.1.2 & 6.1.3)

Special New born Care Unit

A review of only nine sampled types of essential equipment for Labour Ward, Neonatal and Special New born Care Unit (SNCU) revealed that the test checked hospitals did not have all the essential equipment such as incubators, foetal Doppler and vacuum extractors, required for child deliveries and care of new born babies. None of the test-checked DHs had achieved 100 *per cent* immunisation of new born babies for the four Zero day vaccines.

(Paragraphs 6.1.7 & 6.1.8)

Recommendations

- *Concerted efforts may be made to reduce the IMR to the target of* 150/100000 live births *set by the State Government. This can be achieved to a great extent by providing adequate and timely ANC and PNC to all pregnant women.*
- *The State Government may ensure achievement of 100 per cent institutional delivery to improve its MMR and also ensure Immunisation of all new born babies.*
- *The Government may ensure that the hospitals are equipped completely with all the essential equipment for child deliveries and new born baby care.*
- *Pregnancy outcomes of stillbirths and neonatal deaths needed to be addressed by the State Government by more positive measures including awareness/ communication campaigns.*

Cancer incidence and treatment in the State

The number of cancer incidences in the State had increased by 30 *per cent* from 1248 in 2014 to 1621 in 2018. Oesophagus/ Oesophageal cancer with 30 *per cent* followed by Oral (16 *per cent*) and Hypo pharynx (seven *per cent*) all associated with the use of tobacco also known as Tobacco Related Cancer (TRC), were the three most common cancer in the State. The Department had not provided adequate number of SCs/ PHCs/

UPHCs/ CHCs for screening of common NCDs in the population for early detection and treatment of cancer.

Due to serious negligence on the part of the implementing authority, the Cancer Treatment Centre at Civil Hospital, Shillong could not be completed despite funds of ₹ 26.16 crore being made available by the Department of Atomic Energy (DAE), Government of India.

(Paragraphs 6.2.1, 6.2.2 & 6.2.4)

Recommendation

- *Screening centres for early detection and treatment of cancer may be provided adequately in the CHCs, PHCs and SCs to ensure that target set for coverage of population based screening of common cancer is achieved and all CHCs are strengthened to enable them to conduct conformity test.*
- *The Commissioner & Secretary of Health and Family Welfare Department cum Chairman of the State Cancer Society may ensure early completion of the Cancer Hospital at the Shillong CH, funded by GoI. They also need to make an enquiry and fix responsibility on those responsible for the delay in completion of the facility.*

Overall Recommendations on Outcome Indicators

- *The Government needs to adopt an integrated approach, allocate resources in ways which are consistent with patient priorities and needs to improve the monitoring and functioning of the district hospitals towards facilitating a significant change in health outcomes.*
- *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. The high LAMA and Absconding rates in test-checked DHs may also be addressed by improving counselling services.*

What has been the response of the Government?

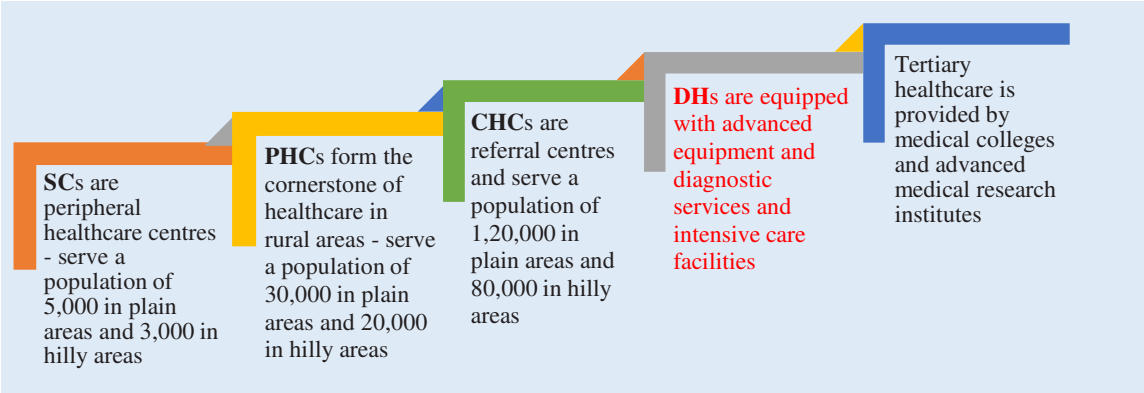
While providing general and specific response regarding efforts made at their level, which we have incorporated suitably in the Report, the Government have agreed with the recommendations and assured to take necessary action to improve the systems.

Chapter-1 Introduction and Audit Framework

1.1 Introduction

Public healthcare delivery system in India is organised at three levels – primary, secondary and tertiary. The vast network of Sub-centres (SCs), Primary Health Centres (PHCs) and Urban Primary Health Centres (UPHCs), and Community Health Centres (CHCs) form the primary tier of Public healthcare delivery system for rural and urban population respectively. These health centres provide preventive and protective health care services like immunisation, epidemic diagnosis, childbirth and maternal care, family welfare, *etc.* District Hospitals (DHs) serve as the secondary tier for rural and urban population. These hospitals handle treatment and management of diseases or medical conditions that require specialised care. Tertiary healthcare involves providing advanced and super-speciality services to be provided by medical institutions in urban areas, which are well equipped with sophisticated diagnostic and investigative facilities. The ascending levels of healthcare facilities are shown in the Chart given below:

Chart-1.1



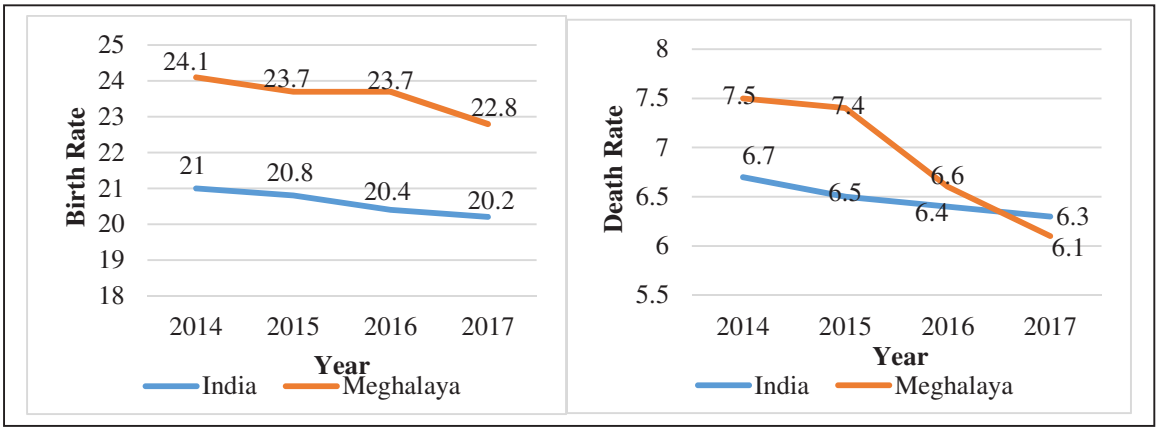
Public healthcare facilities in Meghalaya are structured into two levels for providing primary care and secondary care. In absence of medical colleges, the State Government is yet to provide the third level *i.e.* Tertiary healthcare facilities to its citizens.

1.2 Overview of Public Healthcare Facilities in Meghalaya

Meghalaya had a population of 29.66 lakh as per Census 2011. To cater to the healthcare services of its citizens at different levels, the State Government established 11 District Hospitals (DHs), 27 Community Health Centres (CHCs), 113 Primary Health Centres (PHCs), 450 Sub-Centres (SCs), 13 State Dispensaries and 20 Urban Health Centres (UHCs); out of which, two CHCs and 19 PHCs are operated by NGOs under Public Private Partnership mode.

As per Sample Registration Survey[1] (SRS) report 2014-17, Meghalaya scored higher than the National average in two main health indicators *viz.* Birth Rate and Death Rate during the period, except in the case of 'death rate' in 2017, where the State rate of 6.1 was lower than the National average rate of 6.3. The graphic comparison between the State and National figures of Birth Rate and Death Rate during 2014-17 is given below:

Chart 1.2: Comparison of Birth rate and Death rate of Meghalaya with National average



Source: Ministry of Health and Family Welfare, GoI website.

The State's high birth and death rates therefore need to be addressed *inter alia* in the Health Sector too.

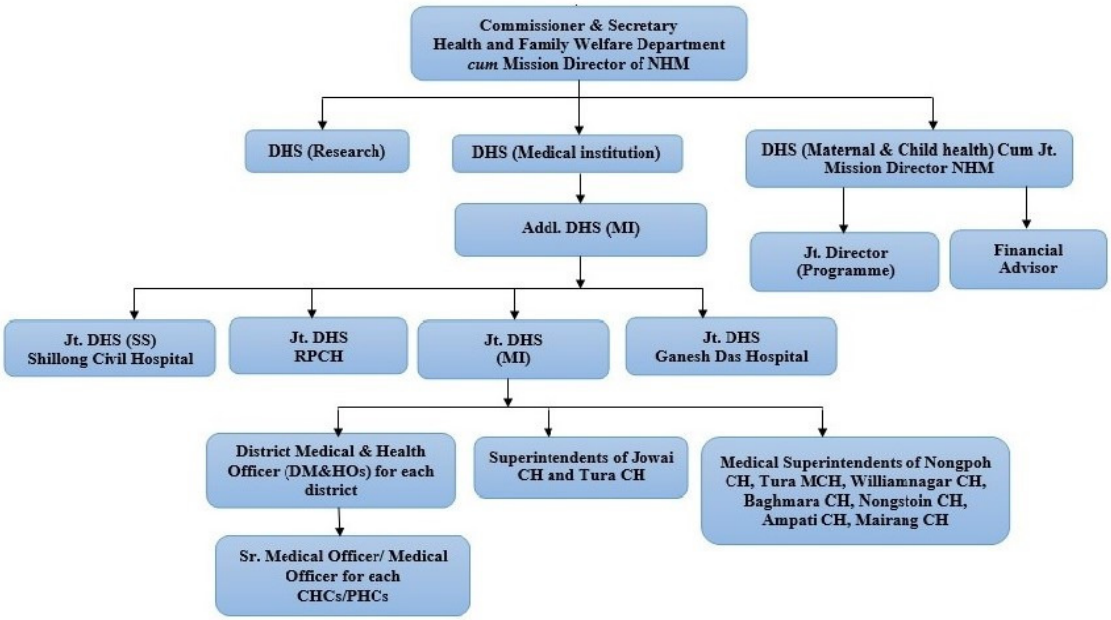
1.3 Accountability Structure for Healthcare in the State

At the Apex level, District Hospitals come under the purview of the Health and Family Welfare Department, which is responsible for policy formulation and oversight. At the organisational level, the Directorate of Health Services (MI) is responsible for implementation of the policy initiatives and developmental programmes relating to healthcare. At the administrative level, the District Medical and Health Officer (DM&HO) is responsible for coordinating all the activities relating to healthcare services in the district. At the operational level, the Medical Superintendent (MS) heads the District Hospitals and is directly responsible for functioning of the DHs. However, the financial and administrative autonomy at this level (MS) is quite limited, with powers delegated only with regard to contingent and establishment matters.

The organisational set up of Health and Family Welfare Department of Government of Meghalaya is given in the following chart:

[1] SRS is being conducted by the Registrar General and Census Commissioner of India, Ministry of Home Affairs for arranging, conducting and analysing the results of demographic surveys.

Chart 1.3: Organogram of Health and Family Welfare Department



1.4 Audit Framework

1.4.1 Background

Healthcare services in the North Eastern Region (NER) are inadequate, in terms of the number of health facilities available, as well as the quality of facilities provided. The primary reasons for inadequacy of the health services are hilly and difficult terrain, insufficient budgetary outlay on health, shortage of generalist and specialist doctors and other medi-care personnel and absence/ shortage of sophisticated diagnostic equipment, limited presence of private sector, *etc*. As per Government of India (GoI) (written statement of the Union Minister of State for Health & Family Welfare in Parliament), as of June 2019, the entire NER accounted for about 10 *per cent* (88 out of 851) of the district hospitals available across the country. Meghalaya accounted for 11 out of these 88 (13 *per cent*) district Hospitals.

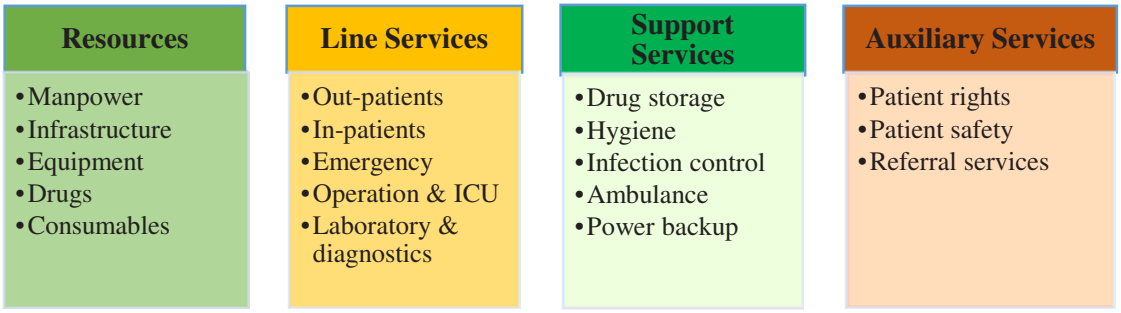
The Comptroller and Auditor General of India (CAG) has reviewed the Provision of Healthcare services by Government of Meghalaya, at periodic intervals. The C&AG had earlier (2015-16) reviewed the Functioning of Primary Health Centres (PHCs) and Community Health Centres (CHCs) of the State. Key healthcare institutes and hospitals are also audited annually on a sample basis.

During 2019, the CAG decided to carry out a Performance Audit of healthcare services being provided at District Hospitals across all the States to assess the availability of resources identified as essential by Indian Public Health Standards (IPHS) for District Hospitals and to evaluate the overall quality of healthcare services provided by these hospitals and in some selected domains.

1.4.2 Audit Domains

The following audit domains/ themes were identified for the Performance Audit of select District Hospitals:

Chart 1.4: Audit Domains



1.4.3 Audit objectives

In pursuance of the audit domains/themes identified above, the objectives of carrying out an Performance Audit of selected district hospitals were to assess whether:

i. adequate and essential resources - manpower, drugs, infrastructure, equipment, and consumables were available for effective functioning of the district hospitals;
ii. timely and quality healthcare was delivered through line services like OPD, IPD, ICU, OT, trauma & emergency, *etc.* and diagnostic services;
iii. support services like drug storage, sterilisation, hygiene, waste management, infection control, ambulance, power back-up/ UPS, *etc.* were aiding the line departments in providing a safe and sterile environment in the hospitals; and
iv. adequate and timely healthcare services were available in selected services relating to maternal and infant care and specialities like cancer care.

1.4.4 Audit criteria

Audit findings were benchmarked against the criteria sourced from the following:

- Indian Public Health Standards (IPHS) guidelines for district hospitals, (Revised 2012);
- National Rural Health Mission (NRHM)/ National Health Mission (NHM) Guidelines 2005 and 2012;
- National Quality Assurance Standards (NQAS) for District Hospitals;
- Assessor's Guide Book for Quality Assurance in District Hospitals 2013, GoI;
- Maternal and New born Health Toolkit, 2013;
- Indian Council of Medical Research (ICMR) on Hospital Infection Control Guidelines;
- Bio-Medical Waste (Management and Handling) Rules, 1998 & 2016;
- Government policies, norms, orders, circulars, budgets, annual reports, *etc.* related to healthcare.

1.4.5 Audit Scope and methodology

Audit scope involved scrutiny of records for the period 2014-15 to 2018-19 in the offices of the Commissioner & Secretary, Health and Family Welfare Department, Director of Health Services (DHS), Mission Director of National Health Mission (NHM), State Project Management Unit (SPMU) of NHM. Besides, the audit also reviewed the offices of the Joint Director of Health Services (SS)/ Medical Superintendents of selected DHs, DM&HOs of selected districts, Senior Medical Officer/ Medical Officer of selected CHC and PHC.

We test checked records of the Department and the Directorate of Health and Family Welfare to understand the policy initiatives, prioritisation of activities, funding and overall support. Field audit was carried out (October 2019 to February 2020) in selected district hospitals, health facilities and infrastructure were physically inspected along with concerned hospital authorities to assess the quality of healthcare services being provided.

The benchmarks were with reference to National Quality Assurance Standards (NQAS) for district hospitals. Data in Hospital Management Information System (HMIS) of the State were analysed and compared with the HMIS data at the hospital level. Samples were drawn from hospital level data and direct substantive checking was carried out to gain assurance about the integrity of data.

Photographic evidence was taken where necessary, to substantiate audit findings. Patient feedback was obtained through a structured questionnaire to gauge the extent and quality of healthcare services being provided by the sampled district hospitals.

An entry conference was held (30 October 2019) with the Joint Secretary, Health and Family Welfare Department, concerned District Medical & Health Officers (DM&HOs), Medical Superintendents (MS) and other officers wherein the audit objectives, scope, criteria, *etc*. were discussed and the inputs of the Department were obtained.

Audit findings were reported to the Government on 26 May 2020 and the written responses and responses during the exit conference (16 July 2020) have been suitably incorporated in the Report.

1.4.6 Audit Sample

Four out of the eleven District Hospitals (DHs), also known as Civil Hospitals in the State, were selected using Probability Proportional to Size Without Replacement (PPSWOR) method with size measure being the total number of patients in the DHs during the period 2014-15 to 2018-19. The selected hospitals were:

(i) Shillong Civil Hospital (East Khasi Hills district);
(ii) Nongpoh Civil Hospital (Ri-Bhoi district);
(iii) Jowai Civil Hospital (West Jaintia Hills district); and
(iv) Tura Maternal and Child Hospital (West Garo Hills district).

Besides, one Community Health Centre (CHC) and one Primary Health Centre (PHC) *viz*., Mawiong CHC and Pomlum PHC located within the district hospital radius in the capital district (East Khasi Hills) were randomly selected to examine the number and nature of cases that are being referred to the DH from the primary health care facilities, relating, especially to maternal and child care issues.

1.5 Acknowledgement

The Office of the Accountant General (Audit), Meghalaya acknowledges the co-operation extended by the Health and Family Welfare Department and the sampled district-level hospitals and CHC/ PHC in the conduct of this Performance Audit.

Chapter-2 Financial Resources

2.1 Fund Management

The Health & Family Welfare Department, Government of Meghalaya received funds from two main sources: (i) State budget, which also included funds from North Eastern Council (NEC) and (ii) Grants-in-Aid from GoI, under National Health Mission (NHM) with corresponding share of the State Government.

2.1.1 Funds under State Budget

National Health Policy (NHP), 2002 envisaged the State Governments to increase commitment to Health Sector up to eight *per cent* of their budget by 2010, while NHP 2017 envisaged raising Public Health Expenditure to more than eight *per cent* of the budget by 2020. The overall budget allotment and expenditure of the State Government and of the Health and Family Welfare Department during 2014-19 was as shown in the table below:

Table 2.1: Budget allocation and expenditure during 2014-19

(₹ in crore)

Year	State		Health & Family Welfare Department	
	Budget Allocation	Expenditure	Budget Allocation *(% of State budget)*	Expenditure *(% of State expenditure)*
(1)	(2)	(3)	(4)	(5)
2014-15	12577.06	7636.97	660.91 *(5.25)*	571.25 *(7.48)*
2015-16	10629.36	7958.75	589.11 *(5.54)*	604.87 *(7.60)*
2016-17	12246.30	10172.86	759.12 *(6.20)*	687.09 *(6.75)*
2017-18	13621.73	9858.37	744.04 *(5.46)*	702.48 *(7.13)*
2018-19	15391.88	12159.25	1237.50 *(8.04)*	1065.26 *(8.76)*
Total	**64466.33**	**47786.20**	**3990.68 *(6.19)***	**3630.95 *(7.51)***

Source: Finance Accounts and Appropriation Accounts.

As can be seen from the above table, budgetary outlay on health services in the State during the four years period 2014-18 ranged from 5.25 *per cent* of the State budget in 2014-15 to 6.20 *per cent* in 2016-17. It was only during 2018-19 that the State Government allocated 8.04 *per cent* of its budget to the Health Sector.

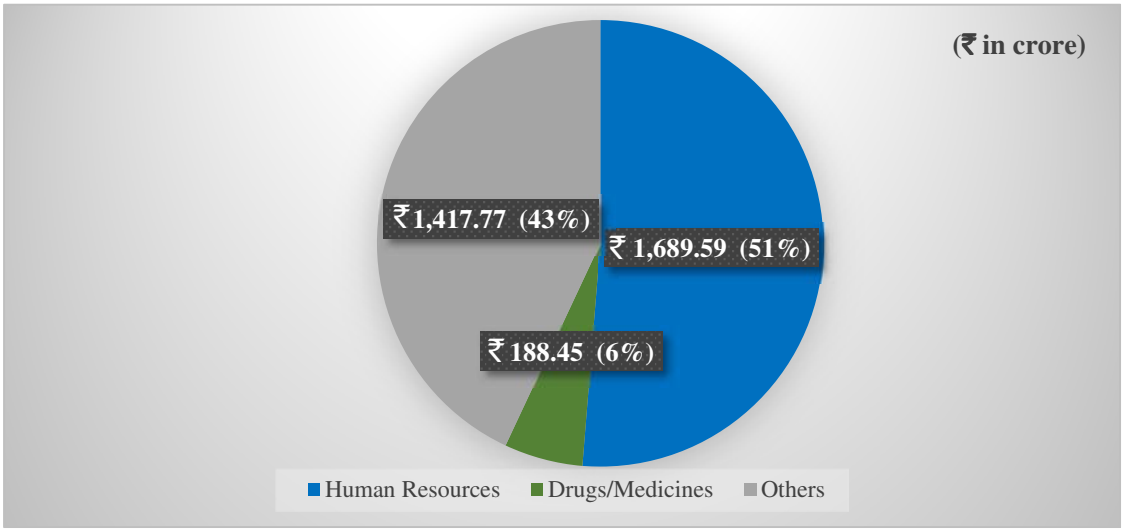
Expenditure on health services ranged from 7.60 *per cent* of total expenditure of the State in 2015-16 to 6.75 *per cent* in 2016-17. As with budgetary outlay, expenditure on health services touched and exceeded eight *per cent* (8.76 *per cent*) of total expenditure of the State only during 2018-19.

The Department did not utilise the allocated funds optimally in four years out of the five year period 2014-19, with the savings ranging from ₹ 41.56 crore (six *per cent*) in 2017-18 to ₹ 172.24 crore (14 *per cent*) in 2018-19.

Further, NHP 2017 stipulated that States increase expenditure on Health Sector to 2.5 *per cent* of Gross State Domestic Product by 2025. Against this benchmark, the State's expenditure on Health Sector ranged between 2.28 *per cent* and 3.09 *per cent* during the period 2014-15 to 2018-19.

Out of the total expenditure of ₹ 3630.95 crore incurred on health during 2014-19, the revenue expenditure constituted ₹ 3295.81 crore (90.8 *per cent*) while the capital expenditure was ₹ 335.14 crore (9.2 *per cent*). Revenue expenditure (component-wise) incurred by the Health & Family Welfare Department during 2014-19 is presented in the following chart:

Chart 2.1: Component wise revenue expenditure during 2014-19



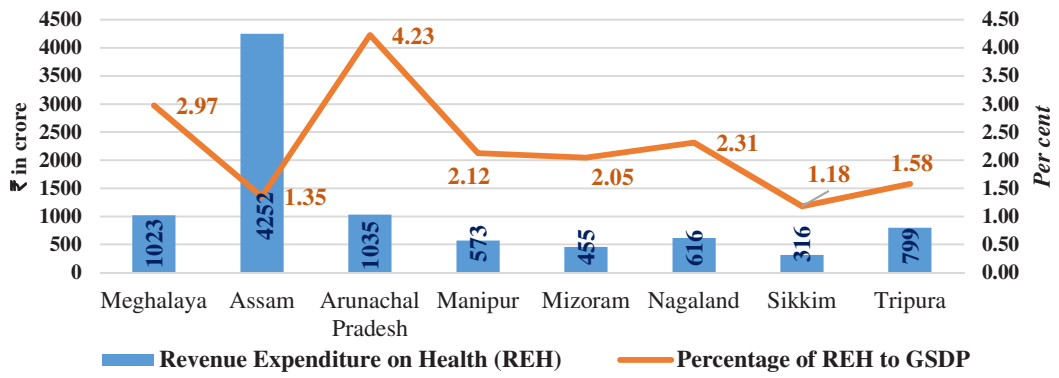
As can be seen from the chart above, 51 *per cent* of the revenue expenditure was incurred on human resources (salary). The Department spent only six *per* cent of the total revenue expenditure on procurement of drugs/ medicines. As detailed in **paragraph 3.4.1**, it was seen in audit that the successive budget proposals submitted by the DHS (MI) during the 2014-19, were less than the demand projected by the respective DHs for drugs procurement. Consequently, several instances of shortage or non-availability of essential drugs were observed by Audit.

The remaining 43 *per cent* revenue expenditure in the category "Others" included minor works (maintenance), repair/ purchase of vehicles, OE, Advertisements, Rent, Rate and Taxes, Scholarship & Stipend, 108 Ambulance Services, payments to NGOs who run the health facilities, Machinery and Surgical Equipment, *etc.* While the Department failed to provide category wise expenditure on items classified as "Others", several cases of essential medical equipment being out of order were seen in the audit (**paragraph 4.7.1.2***)* and thus, possibility of scarcity of funds for annual repair and maintenance could be one of the reasons.

2.1.2 Revenue expenditure on Health compared to other North Eastern States

In terms of revenue expenditure on Health during the financial year 2018-19, Meghalaya (₹ 1023 crore) stood third after Assam (₹ 4252 crore) and Arunachal Pradesh (₹ 1035 crore). However, when we compare the revenue expenditure on Health with GSDP, the position of Meghalaya (2.97 *per cent*) was better than other North Eastern States except for Arunachal Pradesh (4.23 *per cent*), as shown in the following Chart:

Chart 2.2 : Comparison of Revenue Expenditure on Health *vis-à-vis* GSDP of North Eastern States for the year 2018-19



Source: *Appendix 1.1 of SFAR 2018-19, Government of Meghalaya.*

The State Government have not furnished specific reasons for their failure to utilise fully the allocated resources, however, the Commissioner & Secretary during exit conference (16 July 2020), stated that the directives given by the NHP for spending on Health will be looked into.

The response of the Government during Exit Conference indicates that the Government has not taken into account the NHP guidelines while making budgetary allocation to the Health Sector. Moreover, the expenditure profile in Health Sector during the previous five years amply indicates that there is considerable scope for strengthening/ providing adequate health infrastructure since capital expenditure was merely nine *per cent* of the total expenditure incurred during 2014-19.

2.1.3 Funds under National Health Mission (NHM)

Based on the Approved State Programme Implementation Plans (SPIP), GoI sanctions funds under NHM to the State in the form of Grants-in-Aid and the same were released to the Mission Director, NHM, Government of Meghalaya (GoM). The funding pattern of NHM to the State of Meghalaya is in the ratio of 90:10 between the GoI and GoM. Year-wise position of receipt of funds and expenditure incurred there against during the five-year period from 2014-15 to 2018-19 is given in the table below:

Table 2.2: Receipts and expenditure under NHM during 2014-19

(₹ in crore)

Year	Allotment as per SPIP			Opening balance	Funds received from		Interest accrued/ misc. receipts	Total funds available	Expenditure	Unspent balance (%age)
	Total	GoI	GoM		GoI	GoM				
2014-15	175.96	158.36	17.60	*69.32*[2]	115.62	44.30	3.49	232.73	97.94	134.79 (58)
2015-16	264.98	250.42	14.56	134.79	93.31	57.57	5.97	291.64	154.20	137.44 (47)
2016-17	272.84	258.56	14.28	137.44	70.07	9.55	19.50	236.56	165.14	71.42 (30)
2017-18	199.98	184.39	15.59	71.42	189.98	29.87	6.79	298.06	152.99	145.07 (49)
2018-19	295.80	278.24	17.56	145.07	189.31	9.91	4.57	348.86	224.77	124.09 (36)
Total	**1209.56**	**1129.97**	**79.59**		**658.29**	**151.20**	**40.32**	**1407.85**	**795.04**	

Source: Information furnished by the Jt. Mission Director, NHM, Shillong.

[2] RCH (₹ 55.28 crore); Communicable Diseases (₹ 3.68 crore); Non-Communicable diseases (₹ 2.42 crore); AYUSH (₹ 0.73 crore) and Interest (₹ 7.21crore).

As can be seen from the table above, out of the total funds of ₹ 1407.85 crore available during 2014-19, the Mission Director NHM utilised only ₹ 795.04 crore (56 *per cent*) and the unspent funds during 2014-19 ranged between 30 to 58 *per cent*. The State Mission Director (NHM) did not provide the itemised details of contribution of the State's matching share, as such adequacy of State's contribution could not be analysed.

Further, during 2014-19, the total expenditure was less than 50 *per cent* of the available funds in respect of the following six programmes:

Table 2.3: Healthcare programmes where the expenditure was less than 50 *per cen*t during 2014-19

(₹ in lakh)

Name of the programme	Amount received during 2014-19	Interest earned	Total fund available	Expenditure (*per cent*)	Closing Balance
Iodine Deficiency Disease Control Programme (IDD)- RCH	139.06[3]	12.54	**151.60**	10.07 (7)	141.53
National Mental Health Programme (NMHP)- NCD	613.03	24.17	**637.20**	114.67 (18)	522.53
NPCDCS (NCD)	959.63	61.36	**1020.99**	444.87 (44)	576.12
National Tobacco Control Programme (NTCP)- NCD	129.40	13.21	**142.61**	Nil (0)	142.61
Health Care for Elderly	69.20	0.25	**69.45**	Nil (0)	69.45
National Rabies Control Programme	10.00	0.00	**10.00**	Nil (0)	10.00

Source: Information furnished by the Jt. Mission Director, NHM, Shillong.

Healthcare cannot be considered in isolation but has to be seen in a holistic and integrated manner. Each one of the above programmes pooled under NHM have an impact on other health indicators and overall well-being of citizens.

The above table indicates that despite availability of allocated funds and unspent balances under various specific important programmes such as NCD, NTPC, NMPH and IDD-RCH, the resources were not spent. The Healthcare for elderly, NTCP-NCD and Rabies Control did not see any spending at all during the period. The expected outcomes and treatment would consequently suffer.

During Exit Conference (16 July 2020), the Commissioner & Secretary assured that necessary steps will be taken to ensure utilisation of the allotted funds.

Conclusion

The budget allotment and expenditure of the Health and Family Welfare Department against the overall State Budget during 2014-19 was 6.19 *per cent* and 7.51 *per cent* respectively even as the National Health Policy, 2017 envisaged allocation of at least eight *per cent* of the total budget of the State for Health Sector. However, in 2018-19, the State made efforts to increase its spending on health to 8.76 *per cent* of its Budget. State's expenditure on Health Sector stood at 3.09 *per cent* of Gross Domestic State Product. The State spent very little on strengthening/ providing health infrastructure, capital expenditure being merely nine *per cent* of the total health expenditure incurred

[3] Including an opening balance of (-) ₹ 1.27 lakh.

during 2014-19. The Department did not utilise the allocated funds optimally in four years out of the five-year period 2014-19, with the savings ranging from ₹ 41.56 crore (six *per cent*) in 2017-18 to ₹ 172.24 crore (14 *per cent*) in 2018-19.

Further, NHM funds pooled under various important National Health Programmes were poorly utilised or not spent at all.

Recommendations

i. The State Government may enhance the budget provision and expenditure on healthcare services to ensure that adequate and quality healthcare infrastructure and services are provided to the people of the State; and

ii. The State Mission Director, NHM may enquire the reasons for suboptimal or no spending on specific health programmes being administered in the State and ensure optimum utilisation of funds received under various National Health Programme through effective implementation and monitoring.

Chapter-3 Essential Resources Management

Adequacy of essential resources - Manpower, Drugs &Consumables, Equipment and Infrastructure for effective functioning of District Hospitals

3.1 Manpower Resources

Indian Public Health Standards (IPHS) guidelines envisage that doctors and nurses should be available round the clock in IPD to provide due medical care to the in-patients. These guidelines also prescribed the minimum number of doctors and nurses to be available in different hospitals according to the number of sanctioned beds. The DHS, Medical Institutions (MI) stated (January 2020) that the State has its own norms[4] for human resources and does not adopt/ follow the IPHS norms.

3.1.1 Shortage of doctors in the test-checked DHs

Scrutiny revealed shortage of doctors (including specialists) in all the test-checked DH *vis-à-vis* State norms. Out of the total 208 sanctioned post of doctors in 14 Hospitals of the State, the State had 158 doctors (76 *per cent*) posted in these hospitals. Availability of doctors with reference to the State norms and sanctioned posts in test-checked DH as of March 2019 is shown in the table below:

Table 3.1: Availability of doctors *vis-à-vis* State norms in test-checked DH as of March 2019

Parameter	Shillong CH	Nongpoh CH	Jowai CH	Tura MCH	Total
Requirement as per State norms	101	31	31	60	**223**
Sanctioned Strength (SS)	67	21	27	21	**136**
Actual position (March 2019) (PIP)	61	15	21	18	**115**
Shortfall of SS against State norms (per cent)	***34 (34)***	***10 (32)***	***4 (13)***	***39 (65)***	***87 (39)***
Shortfall of PIP against State norms (per cent)	***40 (40)***	***16 (52)***	***10 (32)***	***42 (70)***	***108 (48)***
Vacancies against Sanctioned posts (per cent)	***6 (9)***	***6 (29)***	***6 (22)***	***3 (14)***	***21 (15)***

Source: Records of test-checked DH.
Note: SS and MIP as furnished by the hospitals do not match the data with the DH due to non-updation.

The State had an overall shortage of 87 doctors against its own norms and in the test-checked DH, the shortfall with respect to sanctioned posts ranged from 13 *per cent* (Jowai CH) to 65 *per cent* (Tura MCH). Clearly, the State had not complied with their own norms for sanctioned posts of doctors. Further, even the sanctioned posts were not fully filled up, as there was an overall vacancy of 15 *per cent* against 136 sanctioned posts of the test-checked DHs. The vacant posts in the test checked DHs ranged from nine *per cent* (Shillong CH) to 29 *per cent* (Nongpoh CH).

Thus, failure of the Department to adhere to State's norms while sanctioning the posts of doctors and in not ensuring recruitment of doctors to fill up the vacant posts, had resulted in acute shortage of doctors in all the test-checked DHs.

[4] The State norms of human resources for hospitals, CHCs and PHCs was notified in August 2007 and for MCH in September 2007.

During exit conference (16 July 2020), the DHS (MI) while agreeing with the shortage of doctors as pointed out by Audit, attributed the shortage to reluctance of the State sponsored MBBS/ MD, *etc.* candidates, to join the State Government services after completion of the course due to the prospect of getting posted to rural areas. The DHS (MI) further added that the doctors prefer working in corporate hospitals than in Government hospital for better facilities/ package.

The Commissioner & Secretary Health informed that they had increased the Surety Bond amount for State sponsored medical students for not joining the State services after completion of the course and have taken other initiatives to formulate a comprehensive package for doctors.

The reply of the Government is not convincing since the Government has not been able to enforce the Bond conditions signed between the Department and the student, which states that the student, on completion of medical studies, shall join the Meghalaya Health Service and in the event of breach, shall be liable to pay the amount[5] laid down in the bond. Attention is also drawn to the Comptroller & Auditor General of India's comments in their earlier Audit Report[6] on the failure of the Department to enforce bond conditions. Thus, the condition of Surety Bond was merely on paper and the State has not addressed the shortage of doctors in rural/ hilly areas by implementing incentivising measures to improve availability of doctors in the government hospitals.

3.1.2 Shortage of nurses in DHs

The IPHS envisaged the following nurse-bed ratio for a functional District Hospital of different bed strengths; 45 nurses for 100 beds; 90 nurses for 200 beds; 135 nurses for 300 beds; 180 nurses for 400 beds and 225 nurses for 500 beds. Thus, the nurse-bed ratio should be 0.45:1.

We noted that out of the total 958 sanctioned post of nurses in 14 Hospitals of the State, the State had 890 nurses (93 *per cent*) posted in these hospitals. Further, there was an overall shortfall of 22 *per cent* of nursing staff in the test-checked DHs as per IPHS norms. The hospital wise requirement of nursing staff and actual position (PIP) as per IPHS norms are presented in the following table:

Table 3.2: No. of functional beds, required No. of nurses, PIP and shortfall in the test-checked DHs

Sl. No.	District hospital	No. of functional beds	Required No. of Staff Nurses as per IPHS norms @0.45 nurse per bed	PIP as on 31.03.2019	Shortfall (%)
1	Shillong CH	475	214	170	44 (21)
2	Jowai CH	135	61	53	8 (13)
3	Nongpoh CH	102	46	35	11 (24)
4	Tura MCH	102	46	29	17 (37)
	Total	**814**	**367**	**287**	**80 (22)**

Source: IPHS and records of test-checked DHs.

[5] Fixed at ₹ 10 lakh for Academic years 2000-10, ₹ 25 lakh up to 2016-17 and ₹ 30 lakh 2017-18 onwards.

[6] Report of the Comptroller & Auditor General of India (Social, General & Economic Sectors and PSUs) for the year ended 31 March 2013.

From the table above, it can be seen that Tura MCH had a maximum shortfall (37 *per cent*) of staff nurses followed by Nongpoh CH (24 *per cent*), Shillong CH (21 *per cent*) and Jowai CH (13 *per cent*). The shortage of nurses leads to poor quality of nursing care for the patients and adds to workloads of nursing staff, which may again impact safe and effective patient care.

During Exit Conference (16 July 2020), the Commissioner & Secretary while accepting the shortage of staff nurse in the DHs as pointed out by Audit, stated that the Department will take steps to fill up the posts according to hospitals strength.

In the absence of specific action during the period to address the shortage of nurses, the assertion made during the Exit conference are at best statement of intent.

3.1.3 Adequacy of Manpower

District Hospitals provide health and diagnostic services to a large number of patients in the State, besides performing surgical operations and other medical treatments for in-patients.

Audit analysed adequacy of manpower (Medical and para medical staff) *vis-à-vis* increase in the number of patients (both OPD and IPD) during the period 2014-19. The details are given in the following table:

Table 3.3: Adequacy of manpower *vis-à-vis* patient load in the test-checked DHs

Hospital	Number of OPD and IPD patients (*per cent* increase over previous year)					*Per cent* increase over 2014-19
	2014-15	2015-16	2016-17	2017-18	2018-19	
Shillong CH*	181820	183967 (1.18)	186135 (1.18)	198048 (6.40)	201306 (1.65)	10.72
Nongpoh CH	25740	34828 (35.31)	37357 (7.26)	47029 (25.89)	38798 (-17.50)	50.73
Jowai CH	46108	52776 (14.46)	52380 (-0.75)	66007 (26.02)	70083 (6.18)	52.00
Tura MCH	35756	36194 (1.22)	36379 (0.51)	40973 (12.62)	43613 (6.44)	21.97

Source:-Information furnished by the hospitals.
**contains only OPD figures.*

It is evident from the table above that the patients registered at all the test-checked DHs showed an increase over the period 2014-19. The patient load at Shillong CH increased by 10.72 *per cent*, Nongpoh CH by 50.73 *per cent*, Jowai CH by 52 *per cent* and Tura MCH by 21.97 *per cent* over the period. Further, the average yearly increase in the patient load in the test-checked DHs ranged between 2.67 and 13 *per cent*.

Despite substantial increase in the number of patients in the test checked DHs, the sanctioned strength of the medical and para-medical staff was not revised. Moreover, as discussed in **Paragraph 3.1.1**, the shortage of doctors in the test-checked DHs *vis-à-vis* sanctioned strength, particularly in Nongpoh and Jowai CH where the increase in patient load over the period 2014-19 was 51 and 52 *per cent* neither did their manpower position improve but on the contrary, they had a shortage of 29 and 22 *per cent* doctors, respectively, making the situation even more alarming.

Thus, increased patient load had put an immense pressure on the medical system and inadequate infrastructure thereby, adversely impacting quality of patient care and patient safety.

Conclusion

Human resources, an essential resource for hospital management saw shortages in Meghalaya, with an overall shortage of 87 doctors against the State norms and 15 *per cent* out of the total 136 sanctioned posts lying vacant (March 2019) in the test-checked DHs. The vacant posts of doctors were nine *per cent* in Shillong CH and 29 *per cent* in Nongpoh CH. As regards staff nurses, when compared with the IPHS norms, the State had an overall shortfall of 80 nurses (22 *per cent*) with Tura MCH having maximum shortfall of 37 *per cent* followed by Nongpoh (24 *per cent*) and Shillong (21 *per cent*).

Further, despite substantial increase in the number of registered OPD and IPD patients in all the test-checked DHs, neither the sanctioned strength of the medical and para-medical staff was revised to take care of the increasing patient load nor were the existing shortages in manpower of hospitals filled up.

The State had not implemented any positive measures such as special /hill allowances, accommodation, *etc.* to address the reluctance of doctors to serve in district hospitals.

Recommendations

i. *Keeping in view the fact that Health is a State subject, the State Government may come up with a policy intent to address shortfalls in the Human Resources for the State Health Sector, to improve quality of health care.*
ii. *To arrest the tendency of Doctors not joining the Government Health Facilities, State Government needs to take stringent action to enforce the Bond conditions for enforcing services of Doctors in rural areas.*
iii. *The State Government also needs to take positive measures such as special allowances, availability of accommodation, etc. to incentivise doctors to get posted to rural/ hilly area of the State. They can enquire about such measures being taken by other States.*

3.2 Physical Infrastructure

3.2.1 Non availability of District Hospital in three districts

District Hospital is a hospital at the secondary referral level responsible for a district. Its objective is to provide comprehensive secondary health care services to the people in the district at an acceptable level of quality and to be responsive and sensitive to the needs of the people and referring centres. Every district is expected to have a district hospital.

As per information furnished (04 November 2019) by the DHS (MI), there are 11 DHs in Meghalaya located in eight out of 11 districts. Audit noticed that the Khliehriat CHC in East Jaintia Hills district which was upgraded to 100 bedded DH by the State Government in January 2014 was still (December 2019) functioning as a CHC due to lack of building infrastructure and manpower.

Thus, three districts[7] *viz.* (i) North Garo Hills district; (ii) East Jaintia Hills district and (iii) South West Khasi Hills district are yet to have a DH (December 2019). In the absence of a DH, people of the three districts were deprived of comprehensive secondary level health care services. The DHS (MI) stated (27 January 2020) that processing of setting up DH in the aforesaid three districts was underway.

3.2.2 Shortage of CHCs, PHCs and SCs

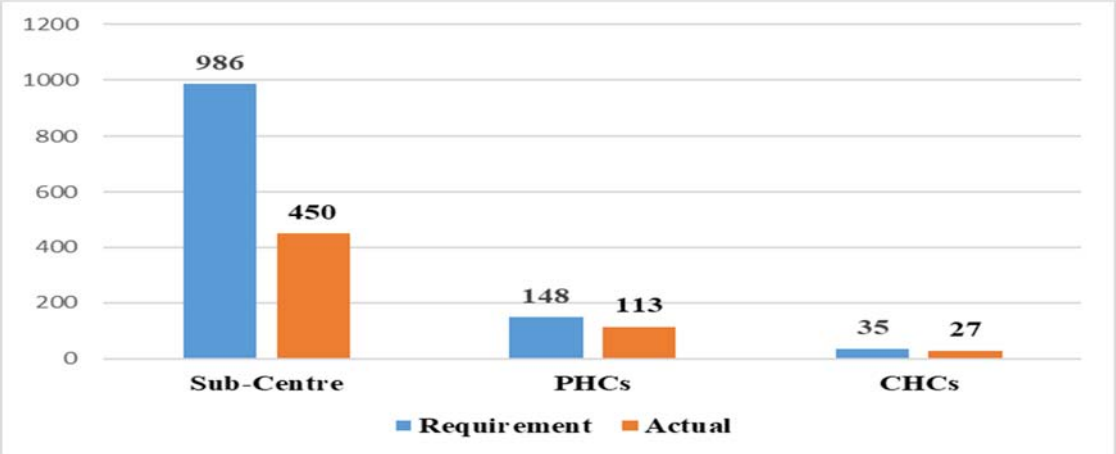
To ensure universal availability and accessibility of healthcare, the Government of Meghalaya, Health and Family Welfare Department notified (June 2006) the following norms/ criteria for setting up healthcare facilities:

Table 3.4-Norms for creation of health facilities

Health facility	As per State's Norms
Sub-centre (SC)	One SC for every 3000 people
Primary Health Centre (PHC)	One PHC for every six SCs or for every 20000 people
Community Health Centre (CHC)	One CHC for every four PHCs or for every 80000 people

Benchmarking the above norms with population as per Census 2011, we observed that there was a shortage in all categories of health facilities in the State. The required number of health facilities, availability and shortfall thereof against the three categories of healthcare infrastructure as of March 2019 is given below:

Chart-3.1



As can be seen from the Chart above, the shortfall of SCs, PHCs and CHCs was 536 (54 *per cent*), 35 (24 *per cent*) and eight (23 *per cent*) respectively, indicating that the State Government has failed to provide the required number of health infrastructure to its citizens, thereby denying universal accessibility of health facilities. Further, even the only test-checked CHC (Mawiong CHC) was found to be not well equipped to handle emergencies, since services like OT, ICU, BSU/ Blood bank and equipment like X-ray, USG were not available. Besides, there was only one doctor available in the CHC during the period 2014-19.

During exit conference (16 July 2020), the Commissioner & Secretary assured that shortage will be looked into and necessary steps to increase the number of Health

[7] All three districts were created in 2012.

Centres, wherever required, proportionate to the population and geographical regions, would be taken.

The fact, however remains that one of the important factors for shortage of DHs, CHCs, PHCs and SCs in the State is insufficient capital expenditure (9.2 *per cent)* by the Health & Family Welfare Department as pointed out in **paragraph 2.1.1**. Further, the shortage of DHs, CHCs, PHCs and SCs was also one of the factors responsible for shortfall in achievement of targets such as antenatal care, institutional deliveries, *etc.* as discussed in **paragraphs 6.1.3 and 6.1.4**.

3.2.3 Non-availability of blood banks

As per IPHS, blood bank is one of the essential services that a District Hospital has to provide for. Blood bank should be in close proximity to pathology department and at an accessible distance to operation theatre, intensive care units and emergency & accident departments.

Audit noticed that only Jowai CH[8] had a blood bank while no functional blood bank was available in other test-checked DHs. The requirement of blood in Shillong CH and Tura MCH were met from the district blood bank at Pasteur, Shillong and Tura Civil hospital respectively which are located at a distance of about two km each from these hospitals. As regards Tura MCH, though the Department had planned for setting up a Blood Storage Unit since 2014, it had not established the same for want of manpower and equipment.

3.2.4 Non-functional blood bank at Nongpoh CH

The Department completed (September 2017) Blood Bank building at Nongpoh CH at a cost of ₹ 50 lakh[9] and also equipped it with equipment worth ₹ 64.25 lakh but did not make it functional (December 2019).The MS of Nongpoh CH attributed the delay in operationalisation of the blood bank to non-sanctioning of manpower by the State Government[10].

The reply does not appear convincing since the blood bank was sanctioned prior to 2017, the DH should have taken all necessary steps to have the staff in place by now. Due to the non-availability of a functional blood bank during 2014-19, Nongpoh CH referred 4,244 patients, Obstetric ward (1,561 patients) and Emergency ward (2,683 patients) to other hospitals. Thus, the non-operational blood bank at Nongpoh CH had not only resulted in idle expenditure of ₹ 114.25 lakh, but also put the patients

[8] Started functioning w.e.f. July 2014.

[9] The blood bank was sanctioned under NHM (SPIP 2015-16) by GoI, Ministry of Health & Family Welfare for ₹ 0.50 crore.

[10] Proposal for sanction of manpower for the blood bank was submitted to DHS (MI) on 16 August 2019.

in need of blood, to avoidable hardship and risk, by being referred to Shillong, which is about 56 km from Nongpoh.

Conclusion

Inadequate health system infrastructure, limits the access of health facilities and also contributes to poor quality of care and outcomes, particularly among vulnerable sections of society. The State did not have district hospital in three of its districts, (North Garo Hills district (ii) East Jaintia Hills district and (iii) South West Khasi Hills district), there was shortage of 536 SCs/ 35 PHCs/ eight CHCs across all the 11 districts. Further, independent blood banks were not planned for/made functional in three out of the four test-checked DHs in violation of IPH norms, thereby risking the life of patients in emergency situations. Non-operational blood bank at Nongpoh CH had not only resulted in idle expenditure of ₹ 114.25 lakh, but also put the patients in need of blood, to avoidable hardship and risk, by being referred to Shillong, which is about 56 km from Nongpoh.

Recommendations

i. *The State Government may ensure setting up of district hospital in all the districts as well as adequate number of SCs/ PHCs/ CHCs so that universal accessibility of healthcare is provided to all sections of society; and*

ii. *The State Government may also ensure availability of blood bank in all the DHs, ensure completion of sanctioned projects in a timely manner and make them functional with required manpower and equipment.*

3.3 Equipment for Health Facilities

IPHS has prescribed norms of equipment for DHs under different categories based on the number of beds, keeping in view the assured services recommended for various grades of the DH.

The State Government did not have Equipment Procurement Policy (EPP) or any Standardised norms/ procedures for procurement of equipment for different health facilities nor has it adopted the IPHS norms. During 2014-19, the DHS (MI) procured needed equipment based on availability of funds.

Audit observed that the types of equipment available in the test-checked DHs to perform various surgical and medical interventions differ from one DH to another. We noted acute shortage of medical equipment in the test-checked DHs *vis-à-vis* IPHS norms as shown in the following table:

Table 3.5: Availability of equipment *vis-à-vis* IPHS norms as on February 2020

Category wise equipment	Tura MCH		Jowai CH		Nongpoh CH		Shillong CH	
	Required No.	Availability (in No.)	Required No.	Availability (in No.)	Required No.	Availability (in No.)	Required No.	Availability (in No.)
OT	21	19	21	11	21	12	19	8
Laboratory	51	24	51	23	51	26	58	24
Endoscopy	3	Nil	3	1	3	0	7	3

Category wise equipment	Tura MCH		Jowai CH		Nongpoh CH		Shillong CH	
	Required No.	Availability (in No.)	Required No.	Availability (in No.)	Required No.	Availability (in No.)	Required No.	Availability (in No.)
Immunisation	13	7	13	11	13	10	Service not available	
ENT	Service not available		18	7	18	3	20	10
Cardiopulmonary	14	1	14	4	14	10	16	3
Labour & Neonatal	27	22	27	14	27	18	Service not available	
Imaging Equipment	4	2	4	2	4	1	7	4
Total	**133**	**75**	**151**	**73**	**151**	**80**	**127**	**52**

Source: JPV of test-checked DH.

As can be seen from the table above, none of the test-checked DHs was fully equipped with the essential equipment as per IPHS norms. The average percentage in terms of availability of the eight sampled categories of equipment ranged from 41 *per cent* (Shillong CH) to 56 *per cent* (Tura MCH) only.

Further, it was seen that the DHs could not provide particular category of service due to non-functional equipment. For example, both the available Imaging equipment in Tura MCH *viz.,* (i) 100 M.A. X-ray machine and (ii) Colour Doppler USG were not functional. Similarly, in Shillong CH, three out of 17 available ENT equipment *viz.,* (i) Micro drill System set, (ii) Oesophagoscope adult and (iii) Oesophagoscope child were not functional.

The non/ short availability of full range of equipment/ machines compounded by non-functional of available equipment, impacted efficient and appropriate health care to be provided in the test-checked DHs.

During exit conference (16 July 2020), the Commissioner & Secretary stated that the State Government is bringing a new policy and mechanism to procure medical equipment or suppliers to address these issues.

The reply did not address the shortage of equipment concerns. The fact remains that it was the responsibility of the DHS(MI) to provide mandated healthcare facilities to the general public and to keep the costly equipment procured functional and available for patient care needs.

Conclusion

Medical equipment/ devices facilitate healthcare personnel to monitor patient health more accurately and help doctors perform various functions from the emergency room to the operating table. The bottom line is that to be able to administer quality health care services, medical equipment must always be available and functioning effectively.

Audit noted absence of Equipment Procurement Policy (EPP) or any Standardised norms/ procedures for procurement of equipment for different health facilities. Thus, the types of equipment available in the test-checked DHs differ from one DH to another DH. There were shortage of full range of essential equipment in the test-checked DHs in comparison to the IPHS norms. The average percentage in terms of availability of eight sampled categories of equipment required by the test-checked DHs ranged from 41 *per cent* (Shillong CH) to 56 *per cent* (Tura MCH) only.

The available equipment frequently broke down due to inadequate maintenance thereby impacting the efficiency and appropriateness level of health care provided in the test-checked DHs.

Recommendations

i. *State Government may ensure availability of full range of essential equipment in every hospital, particularly in view of the increasing reliance on diagnostics for treatment of patients.*

ii. *Proper maintenance of equipment through Annual Maintenance Contracts may also be ensured to reduce the breakdown time of critical equipment for diagnosis.*

3.4 Drugs Management

In Meghalaya, procurement of medicines under the State Government's free drugs policy is centralised through DHS (MI); and the Mission Director, NHM is responsible for drug procurement for different national health programmes under NHM. The State Government procured drugs through tendering process based on approved list of medicines, 2008[11] and State Essential Drugs List (SEDL)[12] respectively. Medicines purchased are first received at the State Central Medical Store, Pasteur, Shillong and from there lifted by the indenting healthcare facilities.

3.4.1 Inadequate provision of funds

During 2014-19, against the total requirement of ₹ 329.97 crore for procurement of drugs as per the indented need of hospitals, it was seen that the DHS (MI) submitted a budget estimate of ₹ 137.08 crore only, to the State Government, the total shortfall in provisioning of funds being of ₹ 192.89 crore. Year-wise requirement of funds based on indents submitted by various health facilities, budget estimates submitted to the State Government by the DHS (MI) and actual expenditure during 2014-19 was as given in the table below:

Table 3.6: Year-wise demand, budget proposal, actual expenditure and shortfall of budget proposal towards procurement of medicines during 2014-19

(₹in crore)

Year	Total value of indents/ demand received by DHS (MI)	Total proposal submitted to GoM	Total budget allotment	Actual expenditure	Budget proposal shortfall against demand (in %)
2014-15	41.87	13.58	17.65	17.65	58
2015-16	79.21	14.55	22.49	22.49	71
2016-17	48.80	30.00	28.60	28.59	41
2017-18	79.92	37.80	61.16	61.16	23
2018-19	80.17	41.15	58.66	58.55	27
Total	**329.97**	**137.08**	**188.56**	**188.44**	**43**

Source: Information furnished by the DHS (MI).

[11] The DHS (MI) notified (May 2008) an approved list of medicines & chemicals containing 309 drugs & chemicals along with approved rates and name of manufacturers/ suppliers.

[12] The Department prepared State Essential Drugs List containing 233 drugs in 2016.

It can be seen that the funds were inadequate compared to the requirement of the DHs resulting in short supply of medicines to the indenting facilities thereby depriving the patients of prescribed medicines free of cost from the hospital pharmacy as pointed out in **Paragraph 3.4.2**.

The DHS (MI) stated (January 2020) that adequate quantity of medicines could not be purchased due to shortage of funds.

During exit conference (16 July 2020), the Commissioner & Secretary stated that the State Government is committed to provide universal healthcare services and the new free drug policy is intended to address this issue.

The reply is not based on facts as the budget proposals submitted to the Government during 2014-19 were always short of the actual demand.

3.4.2 Shortages in availability of essential drugs

To ascertain the availability of essential drugs in the DHs, a Joint Physical Verification (JPV) was conducted along with the officials and staff of the test-checked DHs and available stock records were also verified. In the JPV, it was noticed that 60 types of essential drugs **(Appendix-I)** common in both the State Essential Drug List (SEDL) and the prescribed drugs list of NHM Assessor's Guidebook, were either not supplied at all or 'stock out' as shown in table below:

Table 3.7: Availability of essential drugs in DH

Hospital	Date of JPV	No. of drugs not supplied at all during 2014-19	No. of drugs which were stock out frequently during 2014-19	Drugs not supplied to any DH during 2014-19
Shillong CH	11.01.2020	27 (45%) out of 60 sampled drugs	11 drugs were 'stock out' on the date of JPV for a period ranging from one to ten months.	Tab Piroxicam 20mg; Inj. Drotavarine; Inj. Quinine; Inj. Benzathine penicillin 12 lac; Tab Haloperidol; Tab Risperidone 2mg; Tab Imipramine 75mg; Tab Lorazepam 2mg; Tab Olanzapine 5mg; Cap Fluoxetine 20 mg; Inj. Chlopromazine 25mg, 100mg; Inj. Pethidine; Inj. Haloperidol; Clotrimazple lotion
Nongpoh CH	21.11.2019	32 (53%) out of 60 sampled drugs	06 drugs were 'stock out' on the date of JPV for a period ranging from three to twenty seven months.	
Jowai CH	21.02.2020	28 (47%) out of 60 sampled drugs	18 drugs were 'stock out' on the date of JPV for a period ranging from one to twenty nine months.	
Tura MCH	07.02.2020	25 (42%) out of 60 sampled drugs	15 drugs were 'stock out' on the date of JPV; date of stock out not available/recorded.	

Source: JPV report of drugs of test-checked DH.

Out of the 60 sampled drugs, 42 to 53 *per cent* of the drugs were never supplied to the test-checked DHs during 2014-19 and 6 to 18 essential drugs were 'stock out' for a period ranging up to 29 months. Essentials drugs such as Tab Piroxicam 20mg (*used to treat pain or inflammation caused by osteoarthritis or rheumatoid arthritis*), Inj. Drotavarine (*used to enhance cervical dilation during childbirth*), Inj. Benzathine penicillin 12 lac (*used to treat a wide variety of bacterial infections*), *etc*. were not available in the IPD of the test-checked DHs.

In response to Patient's satisfaction survey conducted by audit on 88 patients in the test-checked DHs, the non/ short availability of essential drugs was confirmed whereas

eight *per cent* stated that prescribed medicines were **'almost never'** available in the hospital pharmacy; 28 *per cent* stated that medicines were available a **'few times'**; while 50 *per cent* and 14 *per cent* stated to have received the prescribed medicines '**Most times**' and '**Always'** respectively.

The reason for non-availability of prescribed medicines in the hospital pharmacies were attributed to (i) non/short supply of the indented medicines by the DHS (MI) and (ii) the prescribed medicines being written by its brand name[13] by some doctors. Due to short/non supply of all essential drugs to the DHs by the Department, patients had to purchase the prescribed medicines from the open market out of their pocket.

During exit conference (16 July 2020), the Commissioner & Secretary stated that as per the patient's satisfaction survey report, more than 60 *per cent* responded positively, which is a good indication. He however, stated that matter will be looked into for improvement. The Commissioner & Secretary did not offer any reply on the reasons for shortfall in supply of essential drugs.

Conclusion

During 2014-19, out of the 60 essential sampled drugs, 42 to 53 *per cent* of the drugs were never supplied to the test-checked DHs, while 6 to 18 drugs were 'stock out' for a period ranging from one to twenty nine months. The serious non-availability of essential drugs in the test-checked DHs, compelled the patients to purchase the prescribed medicines from the open market out of their pocket.

Recommendations

i. *The State Government may put in place a comprehensive drug policy according to the need of hospitals to ensure all time availability of essential drugs in each hospital in order to avoid 'stock out'.*
ii. *They may ensure that a formulary of drugs is prepared by each hospital on the basis of disease patterns and inflow of patients. The State Essential Drug List (SEDL) be updated accordingly.*
iii. *Storage of drugs under conditions prescribed in the Drugs and Cosmetics Rules, 1945 to maintain their efficacy may be ensured, before being administered to the patients.*

[13] While the medicines supplied by the DHS (MI) were only in generic name.

Chapter-4 Delivery of Healthcare Services

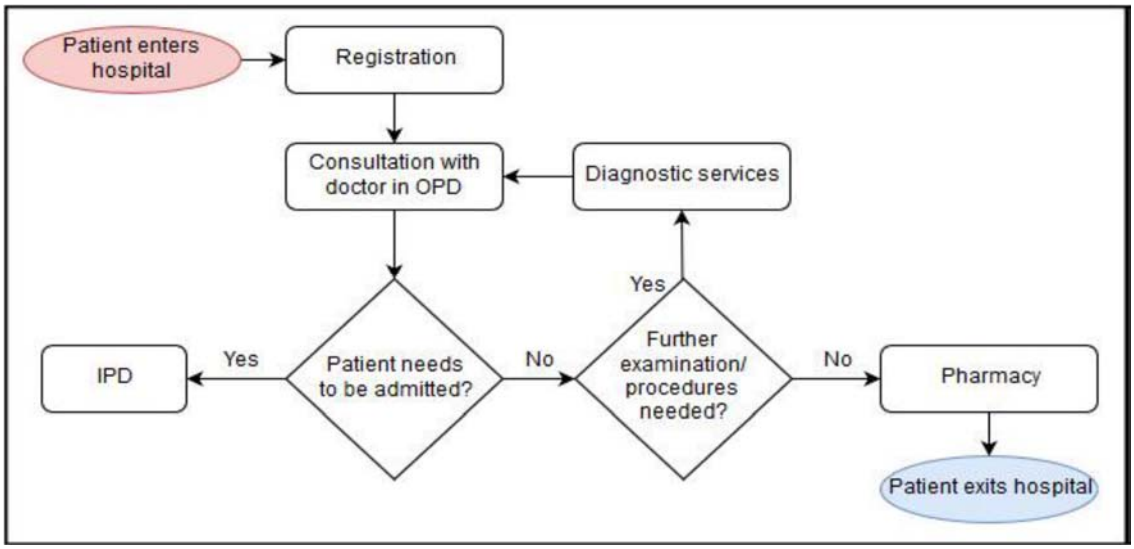
Delivery of OPD, IPD, ICU, OT, Trauma & Emergency, and Diagnostic services.

High-quality healthcare services involve the right care, at the right time, responding to the users' needs and preferences, while minimising harm and wastage of resources. Quality healthcare increases the likelihood of desired health outcomes. Audit observations on delivery of timely and quality healthcare services in the test-checked DHs through line services like Out-Patient Department (OPD), In- Patient Department (IPD), Intensive Care Unit (ICU), Operation Theatre (OT), Trauma & Emergency and Diagnostic services are discussed in the succeeding paragraphs.

4.1 Out Patient Department (OPD) Services

To avail of services in a hospital, patients first register at the registration counter of the hospital. OPD doctors then examine them, and further diagnostic tests are prescribed, where necessary, for evidence based diagnosis and/ or drugs are prescribed or admission in IPD is advised based on the diagnosis. The detailed process flow is shown in the chart below:

Chart 4.1: Flow of patient services



The following paragraphs discuss Audit findings pertaining to OPD services like registration, consultation, waiting time and other basic OPD facilities/ services in the test-checked DHs.

4.1.1 Registration service in test-checked DHs

Registration counter is the first point of contact with the hospital for a patient and is an important component of hospital experience for patients and their attendants. The 'waiting time' at the Reception/Registration counter of a hospital play a vital role in

developing trust in the quality of service medical treatment or diagnosis and long waiting time in hospital causes dissatisfaction among patients.

4.1.2 Inadequate registration counters

NHM Assessor guidebook (Vol-1) estimates the average time required for registration to be 3-5 minutes per patient, which roughly works out to about 20 patients/ hour per counter.

Audit examined the number of patients registered during 2018-19 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 two DHs, *viz.* Shillong CH and Jowai CH as shown in the table below:

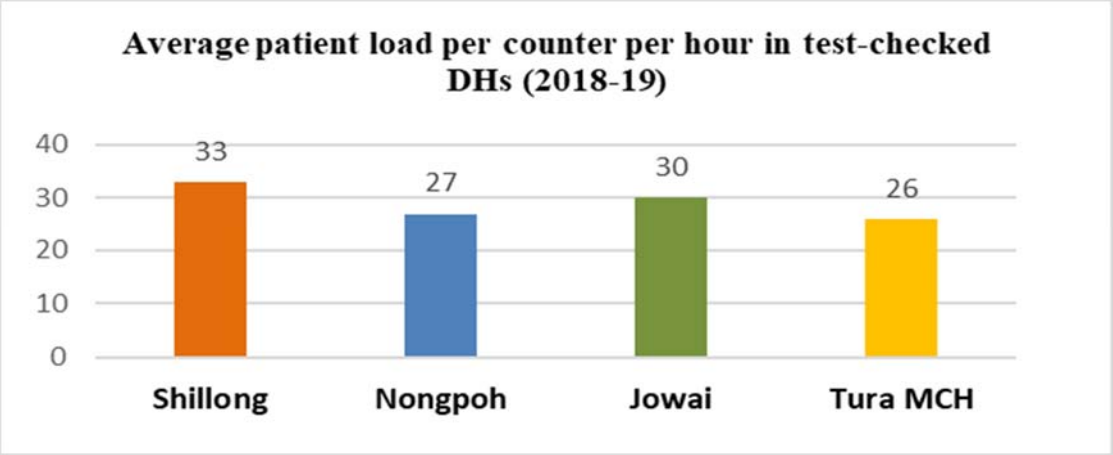
Table 4.1: Hospital wise No. of registration counters

Name of DH	Total No. of registered patients	OPD registration hours/day	No. of OPD working days during 2018-19	No. of required registration counters {2÷(4 x 3)}÷20	No. of counter(s) available	Shortfall
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Shillong CH	201306	4	308	8	5	3
Nongpoh CH	32754	4	309	1	1	0
Jowai CH	55930	3	307	3	2	1
Tura MCH	39454	5	309	1	1	0

Shillong CH had the highest number of patients registered during 2018-19, followed by Jowai CH.

The following chart shows that the average patient load per counter per hour registered during 2018-19 of the test-checked DHs ranged from 33 in Shillong CH to 26 in Tura MCH which was higher than the ideal limit of 20 patients/hour for all test-checked DHs:

Chart 4.2



Further, it was seen that the OPD registration hours per day were not uniform in all the DHs thereby impacting availability of services to the visiting patients. The Quality Assurance Guidebook prescribes a minimum of six hours of OPD Services at DHs. Further, the IPHS envisages SOPs for OPD Management and training of staff for implementation of these procedures. However as highlighted in Table 4.1, the OPD hours adopted by the test checked DHs were not uniform ranging from three to five hours and thus also below the standard of six hours.

During Exit conference (16 July 2020), the Commissioner & Secretary stated that the matter will be looked into and more number of registration counters will be opened up (if required) after taking into account of the number of patients flow at respective DHs.

4.1.3 Waiting time

The 'wait time' for registration at the Registration counters and wait time between registration and consultation as per the response of 88 patients during Patient Satisfaction Survey conducted in the test-checked DHs is tabulated below:

Table 4.2: Waiting time for registration and between registration and consultation with the doctor in the test-checked DHs

(A) Wait time for registration

Name of DH	Available No. of registration counters	No. of Patients surveyed	Wait time in minutes		
			1-5	6-30	31-60
Shillong CH	5	33	7 (21%)	24 (73%)	2 (6%)
Nongpoh CH	1	16	12 (75%)	2 (13%)	2 (12%)
Jowai CH	2	29	25 (87%)	4 (13%)	-
Tura MCH	1	10	8 (80%)	2 (20%)	-

(B) Wait time' between registration and consultation with the doctor

Name of DH	No. of Patients surveyed	Wait time ranged (in minutes)							
		1-10	11-20	21-30	31-40	41-50	51-60	111-120	171-180
Shillong CH	33	9 (27.3%)	3 (9.1%)	6 (18.2%)	-	1 (3.0%)	8 (24.2%)	4 (12.1%)	2 (6.1%)
Nongpoh CH	16	4 (25.0%)	10 (62.5%)	2 (12.5%)	-	-	-	-	-
Jowai CH	29	10 (34.5%)	8 (27.6%)	9 (31.0%)	-	-	2 (6.9%)	-	-
Tura MCH	10	7 (70.0%)	-	2 (20.0%)	-	1 (10.0%)	-	-	-
Total	**88**								

Source: Patient's Satisfaction Survey report of test-checked DHs.

As can be seen from the Table above:

- In Shillong CH, out of 33 patients surveyed, 79 *per cent* waited for more than five minutes to get registered at the counters whereas the time taken to consult the doctors ranged from 30 to 180 minutes;
- In Nongpoh CH, out of 16 patients surveyed, 75 *per cent* of the patients could register within five minutes whereas 25 *per cent* waited for more than five minutes to get registered. The wait time between registration and consultation with the doctor in respect of all the patients was within 30 minutes;
- In Jowai CH, out of 29 patients surveyed, 87 *per cent* patients could get registered within five minutes whereas only 13 *per cent* waited for more than five minutes. The wait time after registration for meeting with the doctor was 51 to 60 minutes for seven *per cent* of the surveyed; and
- In Tura MCH, out of 10 patients surveyed, 80 *per cent* waited for less than five minutes and 20 *per cent* waited for more than five minutes for registration. Ten *per cent* surveyed beneficiaries had to wait for 41-50 minutes between registration and consultation with the doctor.

Thus, there was scope for further improvement of the waiting time for consultation by adding more doctors and registration staff.

4.1.4 Availability of basic facilities in OPD

The Assessor's Guidebook for Quality Assurance in District Hospitals, 2013 (Vol-1) envisages provision of basic facilities in the OPD areas for the patients. Audit observations in this regard facility-wise are as follows:

OPD facilities	Status	Illustrative Photographic evidence
Availability of adequate/ suitable seating facility	Available but inadequate as per patients load in all test-checked DHs.	 Patients standing in the OPD area at Jowai CH due to inadequate number of chairs: Photo taken on 17/02/2020
Availability of separate toilets for men and women	Not available in Nongpoh CH, Jowai CH and Shillong CH. However, in Shillong CH, paid toilet facility was available outside the OPD building.	 Patients have to go outside the hospital building to relieve themselves at the only available paid toilet at Shillong CH: Photo taken on 20/01/2020

OPD facilities	Audit findings
Standard operating procedures for OPD management	SOP for OPD management was not developed by the test-checked DHs.
Availability of disabled friendly toilet and wash basin.	Available in Shillong CH but not available in the remaining three test checked DHs.
Computerised Registration	Registration process was computerised only in Shillong CH, other test-checked DHs maintained manually, without proper format.
Referral cases	Referrals made and referrals received as well as reasons for referrals are not captured in computerised registration system/ register.
Clinical history of the re-visit patients	Diagnosis/ clinical history of the re-visiting patients were not captured in computerised registration system/ register.
Online Registration	Online registration facility was not provided by any of the test-checked DHs.
Availability of entertainment such as TV, health information and reading material in waiting area	None of the test-checked DHs has provided these facilities.

During exit conference (16 July 2020), the DHS(MI) stated that the issue of non-availability of potable drinking water will be brought up to the Hospital Management Society for necessary action.

Conclusion

Two test-checked DHs namely Shillong and Jowai had inadequate registration counters as against the requirements. The average patient load per counter per hour in

Shillong CH and Tura MCH was 33 and 26 respectively as against the norm of 20 patients per hour for registration. The OPD hours adopted by the test checked DHs were not uniform ranging from three to five hours and also below the standard of six hours, thereby impacting availability of services to the patients. The State Government had not issued directives for uniform OPD timings.

The OPD of the test-checked DHs had various shortcomings in availability of basic facilities like non-availability of separate toilets for men and women, disabled friendly toilet and washbasin, potable drinking water, online registration, in-adequacy of suitable seating facility, *etc.* Further, except for Shillong CH, the registration of patients was not computerised in the other three DHs. The referral cases and clinical history of patients was also not computerised.

Recommendations

i. *The State Government may ensure availability of basic facilities/services in the OPD of each hospital as prescribed in the Assessor's Guidebook for Quality Assurance of Services in District Hospitals, 2013 (Vol-1).*

ii. *They may ensure documentation/computerisation of referral cases and clinical history of patients.*

4.2 In Patient Department (IPD) Services

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

Chart 4.3: **IPD services in a hospital**

4.2.1 Availability of IPD services in the test-checked DHs

As per NHM Assessor's Guidebook, a DH should provide specialist in-patient services pertaining to General Medicine, General Surgery, Dialysis, Ophthalmology, Orthopaedics, *etc.* We observed that most of the required services were, however, not available in the test-checked DHs as shown in the following table:

Table 4.3: Status of In-patient services in test-checked District Hospitals

Hospital	Act*	Burns	Dia	GM	GS	Oph	Orth	Phy	Psy
Shillong CH	No	No	Yes	Yes	Yes	No	Yes	Yes	No
Nongpoh CH	No	No	No	Yes	No	Yes	No	Yes	No
Jowai CH	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Tura MCH	The DH is exclusively for Maternal and Child care								

Source: Information furnished by the health centre.

*Act: Accidents and Trauma, Dia: Dialysis, GM: General medicine, GS: General surgery, Oph: Ophthalmology, Orth: Orthopaedics, Phy: Physiotherapy, Psy: Psychiatry.

As can be seen from the table above, in-patient services for Accidents & Trauma and Burns though required to be provided as per norms, were not available in any of the test checked DHs, while Dialysis and Psychiatry indoor service was available only in Shillong CH and Jowai CH respectively. Due to non-availability of all in-patient services, the DHs failed to provide comprehensive health care services to the people and patients had to visit costly private hospitals/ clinics for their healthcare needs.

Further, the test-checked DHs did not maintained computerised data of admissions/ referrals and treatment given to the in-patients.

4.2.2 Referred out patients

During 2014-19, out of 1,45,021 patients[14] admitted in the test-checked DHs, 7,605 patients (5.2 *per cent*) were referred out by the test-checked DHs.

Hospital-wise number of cases referred out during 2014-19 is given in the table below:

Table 4.4: Cases referred out during 2014-19 in test-checked DHs

Year	Shillong CH	Nongpoh CH	Jowai CH	Tura MCH	Total
2014-15	Records not available	845	343	23	1211
2015-16	Records not available	874	377	34	1285
2016-17	Records not available	835	495	73	1403
2017-18	438	900	457	37	1832
2018-19	501	947	404	22	1874
Total	**939**	**4401**	**2076**	**189**	**7605**
Total IPD during 2014-19	**29008** (during 2017-19)	**26332**	**68222**	**21459**	**145021**
% of referred out of IPD	***3.2***	***16.7***	***3.0***	***0.9***	***5.2***

Source: Information furnished by test-checked DHs.

As can be seen from the Table above, Nongpoh CH had referred out 16.7 *per cent* of its patients. In fact, out of the total 7,605 referrals out cases during 2014-19, the Nongpoh CH referral out cases alone was 4,401 *i.e.* 57.9 *per cent.* Reasons attributed by the test-checked DHs for the referral out of patients are; (i) non-availability of facilities (Shillong CH), (ii) Absence of specialised doctors & services like blood bank & OT, lack of equipment, *etc.* (Nongpoh CH), (iii) Absence of ICU, CECT, dialysis & other equipment, lack of manpower, *etc.* (Jowai CH) and (iv) Un-availability of beds (Tura MCH).

[14] Figures of Shillong CH is taken for two years (2017-19) only since No. of patients referred out was not furnished for the period from 2014-17.

Thus, the test-checked DHs particularly, the Nongpoh CH failed to provide comprehensive and quality secondary health care services to the citizens of the district.

Further scrutiny of records revealed that GoI, Department of Empowerment of Persons with Disabilities, Ministry of Social Justice & Empowerment had sanctioned and released (March 2018) ₹ 2.33 crore[15] to Meghalaya for setting up a State Spinal Injury Centre at Shillong CH. The objective of the project was to provide better treatment facilities to spinal injury patients caused due to roadside accident and unscientific coal mining in the State. The Hospital Management Society of Shillong CH failed to ensure timely completion of the Spinal Injury Centre at Shillong CH, not only resulting in idling of funds of ₹ 2.45[16] crore but had also deprived spinal injury patients of the State in getting treatment in Shillong CH.

The Joint Director of Health Services (SS), Shillong CH stated (January 2020) that the grant under Spinal Injury Centre was lying idle because the infrastructure for the same was to be constructed by the State Government from funds received from GoI for construction of Trauma Centre.

Our scrutiny revealed that the GoM had received funds of ₹ 6.75 crore (March 2017) for construction of the Trauma centre and as per the MoU between GOI and the State, the Trauma Centre had to be built within 18 months (September 2018) and made functional with equipment/ manpower by March 2019. The reasons for the entire funds lying unutilised were not furnished.

Further, the DHS(MI) had not furnished Utilisation Certificates in respect of funds received for setting up of Spinal Care Centre as well as Trauma Centre.

In view of the above, the reply furnished by the Joint Director was factually incorrect, since the State Government had inordinately delayed the construction work of both the Trauma Centre and the Spinal Injury Centre despite funds made available to them by GOI as per their own Agreement with them.

4.3 Intensive Care Unit Services

Intensive Care Unit (ICU) is essential for critically ill patients requiring highly skilled life-saving medical aid and nursing care. These include major surgical and medical cases such as head injuries, severe haemorrhage, poisoning, *etc*. ICU services in a District Hospital are essential for providing minimum assured services as per IPHS for DHs having more than 100 beds.

Audit observed that ICU service was available only in Shillong CH. Due to absence of ICU facility in the other three test-checked DHs, patients approaching these hospitals

[15] Surgical items (₹ 1.86 crore), Indoor requirement (₹ 0.20 crore), Physiotherapy equipment/ machineries (₹ 0.11 crore), Occupational Therapy equipment (₹ 0.02 crore) and Prosthetic & Orthotic Kits & Consumables (₹ 0.14 crore).

[16] This includes bank interest of ₹ 0.12 crore.

despite being in an emergent condition were likely to be referred out and/ or directed to private hospitals.

As regards the ICU at Shillong CH, we observed that it was well equipped with the necessary equipment for ICU except Deep Vein Thrombosis prevention devices suction[17]. However, the ICU did not have dedicated doctor or paramedical staff. The MS, Shillong CH stated (April 2020) that doctors were available for the ICU only on call basis.

While the Department failed to provide specific response regarding reasons for non-availability of ICU service in the three test-checked DHs, our inference is that the State Government have not planned for building infrastructure facilities at the DHs by all these years, despite funds being available from various sources.

Thus, non-availability of dedicated ICU services in other DHs had risked the lives of patients with serious and emergency conditions.

4.4 Operation Theatre Services

Operation Theatre (OT) is an essential service in a DH. IPHS guidelines prescribe OTs for elective major surgery, emergency services and ophthalmology/ ENT (ear, nose and throat) for DHs having a bed strength of 101 to 500. Availability of OT services and number of surgeons available in the test-checked DHs as of March 2019 is shown in the Table below:

Table 4.5: Availability of OTs and Surgeons as on 31 March 2019 in the test-checked DHs

Hospital	Type of surgeries available (No. of Surgeons)			Eye surgeries
	General	ENT	Ortho	
Shillong CH	Yes (3)	Yes (4)	Yes (4)	Yes (4)
Nongpoh CH	Yes(2)	No	No	Yes (1)
Jowai CH	Yes (1)	No	Yes (1)	No (1)
Tura MCH	No	No	No	No

Source: Records of the test-checked DHs.

As can be seen from the above details, Nongpoh CH did not provide ENT and Ortho surgeries during 2014-19; Jowai CH did not provide ENT surgeries (major) during 2014-19. Eye surgeries were not provided despite availability of eye surgeon, due to non-availability of OT staff like Nurses and Cleaner/ Sweeper; since Tura MCH had a bed strength of only 50, it was not mandatory to provide all the above mentioned surgeries. However, since it was meant specifically for women and child healthcare, it did provide C-Section surgeries.

Due to non-availability of OT related services/ apparatus, the DHs of Nongpoh, Jowai and Tura could not provide surgical operations or even minor procedures as part of the treatment process for ENT/ Ortho patients. It was seen that in case of Jowai CH, though they had indented the OT equipment during 2018-19, the same were not provided.

[17] The device is used to cuff around the legs that fill with air and squeeze legs to increase blood flow through the veins of legs and helps prevent blood clots.

The Department, has not given the reasons for the above though called for (May and September 2020).

4.4.1 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. The ratio of number of surgeries performed and surgical safety checklist noticed in the test-checked DHs during 2014-19 is detailed in the following table:

Table 4.6: Ratio of surgeries with safety checklist of OT procedures

Sl. No.	Parameter	Nongpoh CH	Shillong CH*	Tura MCH	Jowai CH
1	Ratio of safety checklist record per total surgeries performed at the OT	Nil	Record not maintained	1:1	1:47
2	Ratio of pre-surgery patient evaluation records per total surgeries performed at the OT	1:1		1:1	1:3
3	Ratio of post-operative notes records per total surgeries performed at the OT	1:1		1:1	Record not maintained

Source: Records of test-checked DHs.

From the Table above, it can be seen that Nongpoh CH and Tura MCH had ensured 100 *per cent* safety checklist in all the three parameters, while Jowai CH failed to ensure the surgical safety checklist and did not even maintain required records. In the case of Shillong CH, records were not maintained against the three parameters.

4.5 Emergency Services

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

Emergency room was available in all test-checked DHs, however, the following deficiencies were noted as against IPHS norms:

(i) As per IPHS norms, Emergency should have distinct entry independent of OPD entry to minimise the time lost in giving immediate treatment. Audit noticed that Jowai CH does not have distinct entry and the entry was through a common entrance;

(ii) Emergency shall have dedicated triage, resuscitation and observation area and screens shall be available for privacy. Out of the test-checked DHs, Shillong CH and Tura MCH had all the facilities. Nongpoh CH does not have a dedicated triage whereas Jowai CH did not have any of these facilities;

(iii) Separate provision for examination of rape/sexual assault victim should be made available in the emergency as per guidelines of the Hon'ble Supreme Court. Separate specified room was available at Tura MCH and Nongpoh

CH. In Shillong CH, the victims were referred to Ganesh Das Hospital, Shillong, while Jowai did not have any separate provisions; and

(iv) IPHS require the following equipment, facilities, *etc.* to be available in Emergency room. The availability of facilities in test-checked DHs is shown in the following table:

Table 4.7: Availability of facilities in Emergency Room at DHs.

Sl. No.	Equipment/ Facility	Shillong CH	Jowai CH	Tura MCH	Nongpoh CH
1.	Mobile X-ray	No	No	No	No
2.	ECG	Yes	No	Yes	No
3.	Pulse Oxymeter	Yes	Yes	Yes	Yes
4.	Cardiac Monitor with defibrillator	Yes	No	No	Yes
5.	Multiparameter Monitor	Yes	No	No	Yes
6.	Ventilator	No	No	No	No
7.	Laboratory	Yes	No	No	No
8.	Emergency Beds	Yes	No	Yes	Yes
9.	Side labs/ plaster room	Yes	No	No	No
10.	Minor OT facilities	Yes	No	Yes	No
11.	Duty room for Doctors/ Nurses/ paramedic staff	No	No	No	Yes
12.	Separate waiting area	No	No	Yes	Yes
13.	Public amenities for patients and relatives	Yes	No	No	Yes

Source: Records of the test-checked DH.

From the Table above, it can be seen that Mobile X-ray and Ventilator were not available in any of the DH's emergency room. Availability of equipment/ facilities also varies from DH to DH which ranged from one out of 13 in Jowai CH which was serious state of affairs for a DH whereas in Shillong CH, nine out of 13 equipment were available. The non/ short availability of required facilities/equipment can adversely impact the emergency services of the DHs.

Reasons for non/ short availability of required facilities/ equipment were not stated by the Department, though called for (May and September 2020).

4.6 Absence of Trauma Care Centre

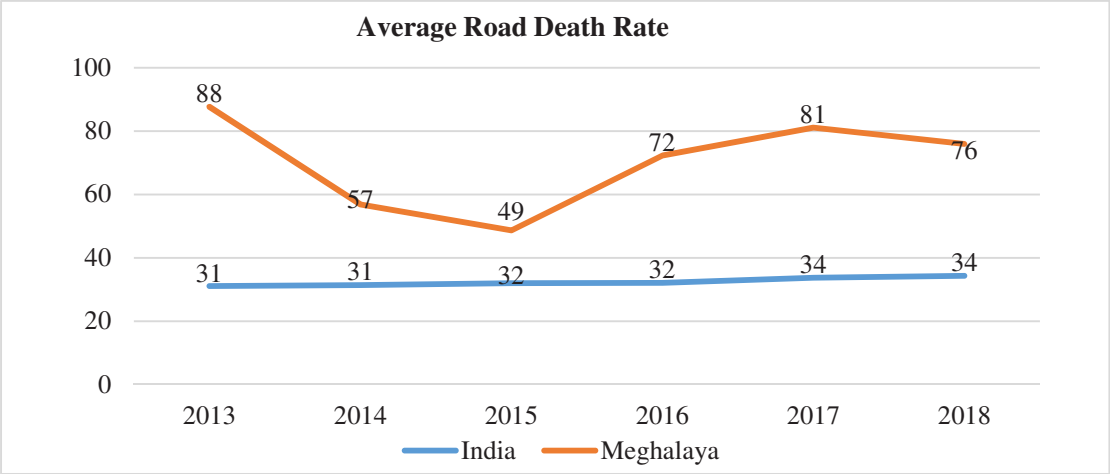
Road traffic deaths and injuries are unpredictable and preventable. It is an accepted strategy of Trauma Care that if basic life support, first aid and replacement of fluids can be arranged within first hour of the injury (the golden hour), lives of many of the accident victims can be saved.

We observed that Trauma care centre was not available in any of the test-checked DHs. In the absence of a functional Trauma care centre in the test-checked DHs, patients with serious injuries were referred out to higher facilities located within and outside the State thus, losing the golden hour, to save the life of the victims.

4.6.1 Delay in completion of Trauma care centre at three DHs

As per National Crime Reports Bureau, Ministry of Home Affairs (MHA), the rate of road/ traffic accidental deaths of Meghalaya during the last five years 2013-18 was always higher than the National average as presented in the following chart:

Chart 4.4



Source: Reports published by National Crime Records Bureau, MHA during 2013-18.

With the objective of bringing down preventable deaths caused by road accidents to 10 *per cent* by developing a pan-India trauma care network, GoI sanctioned[18] in 2016-17 ₹ 18.15 crore for setting up of three Trauma Centres at Shillong CH (₹ 9.25 crore), Nongpoh CH (₹ 4.45 crore) and Tura MCH (₹ 4.45 crore). The idea is to ensure that a designated trauma centre is available at every 100 km, and no trauma patient is transported beyond 50 km.

Audit observed that although construction of the trauma centre was completed (January 2006) at Nongpoh CH, the centre has not been made functional (June 2020) for want of Medical Officer. The construction of trauma centres at Shillong CH and Tura MCH had not even commenced (January 2020), despite funds being sanctioned.

Had the three trauma centres been completed on time and made functional with the required manpower and equipment, lives of many of the accident victims could have been saved and the road accidental death rate of the State could have been minimised.

4.7 Diagnostic Services

Efficient and effective diagnostic services, both radiological and pathological, are amongst the most essential health care facilities for delivering quality treatment to the public based on accurate diagnosis.

4.7.1 Radiology services

The role of radiology is central to disease management for the detection, staging and treatment of diseases. Adequate availability of functional radiology equipment, skilled human resources and consumables are the key requirements for the delivery of quality radiology services.

[18] March 2016 (for Tura CH) and March 2017 (for Shillong and Nongpoh CH).

4.7.1.1 Availability of radiology services in test-checked DHs

Medical imaging equipment, especially X-ray based examinations and ultrasonography are crucial in a variety of medical setting and at all major levels of healthcare.

IPHS prescribed five types of X-ray machines and ultrasonography (USG) as essential services and CT scan and MRI as desirable services to be available at DH. Availability of the equipment in the test-checked DHs was as given in the table below:

Table 4.8: Status of availability of radiology services in the test-checked DHs

Sampled equipment	Utility of the equipment	Availability status
500 M.A. X-ray machine ***(Essential for Shillong CH and desirable for other DHs)***	Provide complete solutions for every application. Ideal for routine examination of chest, extremities, skull and for special investigations including barium, IVP and routine orthopaedic examinations, abdomen and pelvic studies.	Shillong CH and Tura MCH did not have the equipment, only Nongpoh CH and Jowai CH have one each.
60 MA X-ray machine (mobile) ***(Essential for Shillong CH and desirable for other DHs)***		Nongpoh CH and Jowai CH did not have the machine. Only Shillong CH (02) and Jowai CH (01) have the machine.
300 M.A. X-ray machine ***(Essential for all the DHs)***	Used to check fractures, pneumonia, *etc*.	Not available in any of the test-checked DHs.
100 M.A. X-ray machine ***(Essential for all the DHs)***		Nongpoh CH and Jowai CH did not have the machine. Only Tura MCH and Shillong CH have one each, but these were not functional.
Dental X-Ray machine ***(Essential for all the DHs)***		Jowai CH and Tura MCH did not have the machine. Only Shillong CH and Nongpoh CH have one each.
Colour Doppler Ultrasound machine with 4 probes: Abdomen, Paediatric, Soft Parts and Intra-cavitory Ultra Sonogram.***(Essential for all the DHs)***	Used to check for issues with blood flow, such as clots in veins or blockages in arteries, *etc*.	Not available in Nongpoh CH. While the only one available in Tura MCH was not functional.
Mammography Unit (***Essential for Shillong CH and desirable for other DHs)***	The unit is used exclusively for x-ray examination of the breast, with special accessories that allow only the breast to be exposed to the x-rays.	The device is available only in Shillong CH.
MRI 1.5 Tesla ***(Desirable only for Shillong CH)***	Health care professionals use MRI scans to diagnose a variety of conditions, from torn ligaments to tumours. MRIs are very useful for examining the brain and spinal cord.	Available in Shillong CH.
CT-Scan multi slices ***(Desirable for all DHs)***	The most commonly performed CT scan is of the brain - to determine the cause of a stroke, or to assess serious head injuries.	Available only in Shillong CH.

Source: IPHS and Information furnished by the test-checked DHs.

From the Table above, it is evident that essential radiological equipment viz., 500 M.A. X-ray machine, 300 M.A. X-ray machine and Colour Doppler Ultrasound machine were not available at Shillong CH; 300 M.A. X-ray machine, 100 M.A. X-ray machine and Colour Doppler Ultrasound machine were not available at Nongpoh CH; 300 M.A. X-ray machine and Dental X-Ray machine were not available at Tura MCH; and 300

M.A. X-ray machine, 100 M.A. X-ray machine, Dental X-Ray machine and Colour Doppler Ultrasound machine were not available at Jowai CH. Thus, effective decisions on correct diagnosis as well as assessing responses to treatment was not ensured.

4.7.1.2 Frequent breakdown of Imaging equipment

Audit further observed that the X-Ray, USG, CT Scan and MRI machines in Jowai CH, Tura MCH and Shillong CH were frequently out of order during the period covered under Audit as shown in the table below:

Table 4.9: Frequent breakdown of available imaging equipment and reasons thereof

Hospital	Radiology machine	Period for which service/ test was not available	Duration (in days)	Reason for non-availability of service
Jowai CH	X-ray	2/2/14 to 8/5/14	95	Due to non-functioning of Heliophos-D (500 MA)
		28/5/14 to 18/6/14	22	Due to non-functioning of UPS and Computed Radiography System (C.R.)
		29/1/15 to 8/3/15	39	Due to non-functioning of Heliophos-D (500 MA)
		31/5/18 to 2/6/18	03	Reason not recorded
		10/7/18 to 7/9/18	59	Reason not recorded
	USG	Oct 2018 to till date		Due to transfer of the only available Sonologist
Tura MCH	X-ray	March 2017		Machine out of order
		September 2018		Film not available
	USG	February 2015 February 2016 October 2016 April 2018 January 2019		Machine out of order
Shillong CH	USG	26/11/16 to 8/12/16	12	Due to defect in the monitor display
	CT Scan	8/7/16 to 27/8/16	50	Due to failure of IRS component
		4/12/16 to 20/4/17	137	
	MRI	15/10/15 to 6/7/18	994	Due to failure of the MRI magnet

The Table above indicated that proper maintenance of essential equipment was not ensured at Shillong & Jowai CHs and Tura MCH. Thus, due to non-availability of basic diagnostic machines like X-Ray, USG, CT Scan and MRI in the DHs compounded by frequent breakdown of the available machines, the DHs could not provide the required services to patients at all times. Non availability of functioning equipment would compel the patients to undergo for the requisite tests from private clinics at higher rates.

Further scrutiny of records of Shillong CH pertaining to tests conducted during 2018-19 with CT Scan and MRI services revealed that the number of tests conducted was short by 184 (12.96 *per cent*) and 227 (48.61 *per cent*) respectively compared to the total number of patients registered/ recommended by doctors. The reasons for shortfall in number of tests conducted were attributed (January 2020) by Shillong CH to (i) failure on the part of patients to report for examination, (ii) refusal of the patients to undergo test due to Claustrophobia and (iii) derangement as per clinical report (KFT Test Report), which were not suitable for performing the test.

During Exit conference (16 July 2020), the Commissioner & Secretary stated that order will be issued to check and inform the status of all the essential equipment available in all the DHs.

Mention was made in **Paragraph 2.2** of the Report of the Comptroller & Auditor General of India on General, Social and Economic Sectors for the year ended 31 March 2018 regarding avoidable expenditure of ₹ 1.50 crore towards repairs besides depriving the patients the benefit of its service for almost three years due to non-execution of Annual Maintenance Contract (AMC) for maintenance of MRI. Therefore, in addition to trained manpower, the Department should also ensure that AMCs for the imaging equipment are provided to avoid frequent breakdown.

4.7.1.3 Turn-around Time for Radiology Services

Although the definition of timeliness is subjective and depends on the clinical setting, a report can be defined as timely if it is available to the healthcare team at the time it is needed.

Regarding Turn-around Time for Radiology Services, Audit observed the following:

- The average turn-around time of X-ray report in respect of Shillong CH *i.e.* 2880 minutes (48 hours) was considerably higher than 1440 minutes (24 hours) of the other three test-checked DHs;
- In case of USG report, the turn-around time of Tura MCH with 1440 minute (*i.e.* 24 hours) was much higher than the average (400 minutes) of the four test-checked DHs.

4.7.1.4 AERB licences for radiology machines

As per Atomic Energy (Radiation Protection) Rules, 2004, for setting up an X-ray unit and similar other equipment, hospitals were required to obtain license to operate from the Atomic Energy Regulatory Board (AERB).

Contrary to the aforementioned Rules, three DHs *viz.* (i) Nongpoh CH, (ii) Jowai CH and (iii) Tura MCH did not obtain the requisite licence from AERB. Thus, safety implications for patients, staff, public and environment from potential exposure to radiation because of the operation of the equipment, cannot be ruled out.

The Jowai CH and Tura MCH stated (February 2020) that the process for obtaining licences in these hospitals was underway, but did not elucidate the reasons for non-compliance with the Rules *ibid*.

4.7.2 Laboratory Services at test-checked DHs

The District Hospital Laboratory is expected to serve the purpose of public health laboratory and should be able to perform all tests required to diagnose epidemics or important diseases from public health point of view. IPHS envisages that the district hospitals having a capacity of 100 to 500 beds should ensure availability of 97 laboratory test services.

4.7.2.1 Availability of Laboratory Equipment

Audit checked availability of essential Laboratory equipment in the test-checked hospitals through Joint Physical Verification (JPV) with departmental representatives and observed significant shortages, as discussed below:

- Shillong CH has 24 (41 *per cent*) out of 58 prescribed Laboratory equipment available with them. It was further observed that for 10 available equipment, the shortage in quantity ranged from 20 to 80 *per cent*;
- In respect of other three test-checked DHs, 51 numbers of laboratory equipment were prescribed for each hospital. Hospital-wise availability of laboratory equipment and other details are given in the table below:

Table 4.10: Shortage/non-availability of laboratory equipment in the test-checked DHs

Hospital	No. of equipment required as per IPHS	Available equipment (%)	Non-available equipment (%)	No. of equipment available but inadequate (shortfall % in range)
Nongpoh CH	51	26 (51)	25 *(49)*	15 (33-99.9%)
Jowai CH	51	23 (45)	28 *(55)*	10 (33-67%)
Tura MCH	51	24 (47)	27 *(53)*	14 (17-83%)

Source: JPV of Laboratory equipment in the test-checked DH.

Thus, the non-available equipment ranged from 49 to 55 *per cent*, whereas the shortage in available equipment ranged from 17 to 99 *per cent*.

The shortage in availability of Laboratory equipment has resulted in unavailability of laboratory services as discussed in the succeeding paragraph.

4.7.2.2 Availability of Laboratory Services

Regarding laboratory services, the test-checked DHs reported availability of 31 to 63 *per cent* of the 97 laboratory services (**Appendix-II**) as given below:

- Shillong CH confirmed (December 2019) availability of 61 out of 97 services *i.e.* 63 *per cent*;
- Nongpoh CH confirmed (November 2019) availability of 38 out of 97 services *i.e.* 39 *per cent*;
- Jowai CH confirmed (November 2019) availability of 34 out of 97 services *i.e.* 35 *per cent;* and
- Tura MCH confirmed (February 2020) availability of 30 out of 97 services *i.e.* 31 *per cent*.

In order to ascertain the actual availability of the services and to verify the number of tests conducted, Audit has called for the number of tests conducted during 2014-19 against 13 sampled services[19] (12 Bio-chemistry tests and one Haematology test). In this regard, Audit observed that most of the services stated to have been available were

[19] (i) Haemoglobin estimation; (ii) Blood Sugar; (iii) Glycosylated Haemoglobin; (iv) Blood urea, blood cholesterol; (v) serum bilirubin; (vi) Liver function tests; (vii) Kidney function tests; (viii) Lipid Profile; (ix) Blood uric acid; (x) serum calcium; (xi) CSF for protein, sugar; (xii) Thyroid T3 T4 TSH and (xiii) CPk test.

not actually available in three DHs *viz.* (i) Nongpoh CH, (ii) Jowai CH and (iii) Tura MCH as highlighted below:

(i) Nongpoh CH had confirmed availability of 11 services out of the 13 sampled services, against actual availability of only one service. This indicates that 91 *per cent* of the information furnished by Nongpoh CH pertaining to availability of diagnostic services was not factual;

(ii) Tura MCH had confirmed availability of five out of 13 services against actual availability of only two services. This indicates that 60 *per cent* of the information furnished pertaining to availability of diagnostic services was not factual; and

(iii) Jowai CH had confirmed availability of nine out of 13 services against the actual availability of only five. This indicates that 44 *per cent* of the information furnished pertaining to availability of diagnostic services was incorrect.

The above findings indicate that the DHs (except Shillong CH) did not have adequate laboratory equipment to provide comprehensive diagnostic services to the public. It also showed that the hospital authorities were not aware of the actual availability of Laboratory services in the hospitals, depriving patients of the available services.

4.7.2.3 Turn-around Time for Laboratory Services

In order to ascertain the turn-around time of laboratory services, Audit has sampled four services[20] *viz.* Haemoglobin test, CBC, LFT and Bacterial Culture Sensitivity. Audit observations in this regard are given below.

- The average turn-around time of Haemoglobin test report in respect of Shillong CH (35 minute) and Jowai CH (30 minutes) were considerably higher than the average (22 minute) of the four test-checked DHs;
- In case of Complete Blood Counts (CBC) report, the turn-around time of Shillong CH (450 minutes) was considerably higher than the average (210 minutes) of three DHs providing the service; and
- Liver Function Test (LFT) service was provided by only Shillong CH and Jowai CH. The average turn–around time of LFT report in Jowai CH was 150 minutes while the Shillong CH with 450 minutes was 200 *per cent* higher than Jowai CH.

The higher turn-around time of the aforementioned test reports especially in Shillong CH has impacted timely provision of quality healthcare to the patients.

4.8 Shortage of Laboratory Technicians

Laboratory Technicians (LTs) are the key personnel for in-house laboratories and are responsible for taking samples and carrying out all prescribed pathological

[20] (i) Haemoglobin test, (ii) Complete Blood Counts (CBC), (iii) Liver Function test and (iv) Bacterial Culture Sensitivity.

investigations. Audit observed shortage of LTs ranging from 17 to 83 *per cent* in the test-checked DHs with an overall shortage of 69 *per cent* as given in following table.

Table 4.11: Position of LTs in the test-checked DHs as on March 2019

Name of the Hospital	Requirement of LTs as per IPHS norms	Actual Persons-in-Position as of March 2019	Shortage (*per cent*)
Nongpoh CH	6	5	1 (17)
Shillong CH	18	4	14 (78)
Jowai CH	6	1	5 (83)
Tura MCH	6	1	5 (83)
Total:	**36**	**11**	**25 (69)**

Source: Information furnished by test-checked DH.

We observed that only Shillong CH had sent (December 2017) proposal for sanctioning an additional LTs to DHS (MI). However, no additional posts of LTs was sanctioned to Shillong CH as of date of Audit (January 2020). Correspondence regarding the issue of shortage of LTs staff, being raised to the Government by other test-checked DHs was not found on record.

The shortage in Lab Technicians is one of the main reasons for the high turnaround time for testing services in the selected DHs.

4.9 Quality Assurance in Laboratory Services

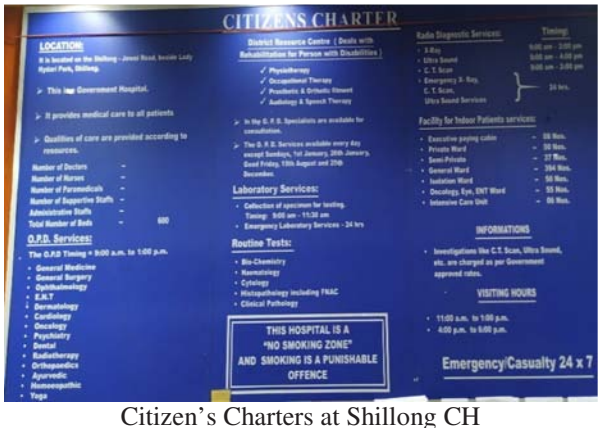
As per IPHS norms, external validation of lab reports is to be done on a regular basis. However, none of the selected hospitals got the lab reports validated by an External Quality Agency (EQA) during 2014-19.

4.10 Patient Rights and Grievance Redressal

IPHS prescribes the requirement to display the Citizen's Charter at OPD and Entrance in local language including patient rights and responsibilities. Further, for effective redressal of grievances of patients, NHM Assessor's Guidebook envisaged 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.

4.10.1 Citizen's Charter

Audit noticed that Citizen's Charters were displayed in all the test-checked hospitals. However, Shillong CH and Nongpoh CH displayed Citizen's Charter only in English and not in local language.



Citizen's Charters at Shillong CH

4.10.2 Free Medical Insurance

Megha Health Insurance Scheme (MHIS) was launched (December 2012) by the State Government to provide health insurance to all the residents of the Meghalaya, excluding State and Central

Government employees. The objective of the scheme was to provide financial aid to all the citizens of the State at the time of hospitalisation and reduce the out-of-pocket expenses of the residents of the State. The MHIS was implemented in a phase manner and currently MHIS Phase IV is on-going. The MHIS-IV is implemented in convergence with **Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana** (PMJAY) which was launched by the Government of India in September 2018.

Under the scheme, beneficiaries can avail free medical treatment in all the empanelled hospitals (both Public and Private) up to a financial limit of ₹ 5.00 lakh per family with no restrictions on family size and age.

There were about 168 empanelled hospitals/ health facilities in the State and about 5.54 lakh beneficiaries (households) were registered under the scheme and a claim of ₹ 235.81 crore has been accepted by the insurance company, since the inception of this scheme.

4.10.3 Grievance Redressal

Audit observed that Grievance redressal cell/ complaint cell was not set up in Shillong CH and Tura MCH as of March 2019. Further, complaint box was available in all the test-checked DHs, however, in absence of Grievance Redressal Committee/Cell at all the hospitals, the manner/ basis of disposal of the complaint/suggestion received, could not be verified. Moreover, patient satisfaction survey was not conducted by Shillong CH, Nongpoh CH and Jowai CH during 2014-19. Tura MCH stated to have conducted the survey, but relevant records like the survey report, recommendations (if any) and follow up action taken, were not furnished to Audit, although called for.

Further, during the joint physical verification, Audit noticed that patients had to stay in the corridors or on the floor due to the constraints of bed/ space as can be evidenced from the following photographs.

Jowai CH: Patients lying on the floor and on extra beds laid in the corridor

Tura MCH: Patients along with attendants/ visitors sitting on the beds and extra beds laid in the corridor

In view of above, Audit observed that patient's rights and grievances were not properly safeguarded and addressed in the test-checked DHs.

4.11 Patient Safety

4.11.1 Firefighting equipment and disaster management plan

National Building Code of India 2016, Part 4, Fire and Life Safety requires that fire extinguishers be installed in every hospital, so that the safety of the patients/ attendants/ visitors and the hospital staff is ensured in case of any fire in the hospital premises. Further, NHM Assessor's Guidebook envisages that in every hospital, Standard Operating Procedure (SOP) should be available and a Disaster Management Committee should be constituted.

Audit observations with regard to fire safety measures taken by the test-checked DHs are as follows:

- Fire safety audit was conducted in February 2017 in all the test-checked DHs. However, recommendations/ suggestions such as (i) installation/ fitting of smoke detectors, (ii) PA system, (iii) fire alarm, *etc.*; made in the fire safety audit reports were not implemented by the hospitals as of date of Audit;
- No Objection Certificate (NOC) from competent Authority (Fire & Emergency Services) required as per rules, were not obtained by any of the test-checked DHs; and
- Adequate number of fire extinguishers were not available in all the test-checked DHs.

In view of above, there was no record of availability of fool proof fire safety measures and hospital infrastructure in any of the test-checked DHs. Thus, a satisfactory assurance of fire safety measures could not be obtained.

Conclusion

In all the test-checked DHs, in-patient services for Accident & Trauma and Burns were not available, while Dialysis and Psychiatry indoor service was available only in Shillong CH and Jowai CH respectively. OT and ICU services were also not available in all the test-checked DHs. The construction of State Spinal Injury Centre sanctioned in 2018 and the Trauma Centre for Shillong CH due for completion by September 2018 did not even commence despite availability of GoI funds. The Diagnostic Services in the test checked hospitals were inadequate to the extent of radiological equipment not being available. The imaging equipment available were frequently non-functional for want of proper maintenance. As regards Laboratory Equipment, in test checked DHs, non-availability of essential equipment ranged from 49 to 55 *per cent* whereas shortages in available equipment ranged from 17 to 99 *per cent*, thereby impacting the availability and timeliness of comprehensive diagnostic services to the public.

Further, fire safety of patients, attendants, medical personnel and the hospital buildings had not been ensured by the Hospital administration. Grievance Redressal Committee/ Cell did not exist in all the hospitals.

Recommendations

i. *Government may proactively synergise availability of specialised in-patient services along with the essential drugs, equipment and human resources in district hospitals.*

ii. *OT services be made available in all the DHs with required manpower, equipment and drugs.*

iii. *The availability of round the clock accident and trauma services in DHs needs to be ensured as per the norms for DHs.*

iv. *The quality of diagnostic services which are crucial for patient care and treatment be made comprehensive as per requirements. The State Govt./hospital administration must ensure that available equipment are functional and turnaround time for services is reduced.*

v. *The hospitals may rigorously adhere to the National Building Code 2016 to ensure safety of patients/ attendants/ visitors and the hospital staff from fire incidents. The Hospital administration may also ensure adequate documentation of availability of fire safety measures for verification.*

vi. *The grievance redressal mechanism be activated so that hospitals improve performance by tailoring interventions effectively to address the issues related to patient satisfaction.*

Chapter-5 Support Services

Whether support services like drug storage, sterilisation, hygiene, waste management, infection control, ambulance, power back-up/ UPS, etc. had aided the line departments in providing a safe and sterile environment.

5.1 Storage of Drugs

Drugs and Cosmetic Rules, 1945 stipulate parameters for the storage of drugs in stores to maintain the efficacy of the procured drugs before issue to patients. The norms and parameters prescribed in the said Rules were, however, not adhered to as observed during Joint Physical Verification (JPV) conducted along with the Pharmacists/ staff of the selected DM&HOs and DHs as tabulated below.

Table 5.1: Deficiencies in storage of drugs

Parameters	Deficiencies observed during JPV
Availability of cold room/ refrigerators in the district drugs warehouse to avoid loss of efficacy and shelf-life of the Drugs.	Except district drugs warehouse at Nongpoh, cold room/ refrigerators/ freezers were not available in the other test-checked districts. System to control room temperature and relative humidity was also not available. The Pharmacist of DM&HO Tura informed that medicines requiring refrigeration *i.e.* cold temperature (2°-8°C) were immediately dispatched to the indenting facilities.
Availability of labelled shelves/ racks/ floor pallet to ensure storage of drugs away from walls and floor.	Shelves and racks were not available, Cupboard for the storage of specific products that must be kept free from dust or light were not available in any of the test-checked District drugs warehouses. Floor Pallets were also not used to ensure storage of drugs off the floor, instead the medicines containers/ consignments were stored directly on the floor. Thus, loss of efficacy and shelf life of drugs due to improper storage cannot be ruled out.
Availability of designated salvage area to store expired drugs separately so as to avoid mixing of expired drugs with usable drugs.	In all the test-checked district drug warehouses, no designated salvage area was available to store expired/ damaged drugs separately. Thus, the possibility of expired drugs getting mixed up with usable medicines cannot be ruled out.
Availability of separate space for storage of phenyl, bleaching powder and other poisonous medicines to avoid/ prevent contamination with general medicines.	In all the test-checked district drug warehouses, no separate space/area for storage of Phenyl, bleaching powder and other poisonous medicines/ chemicals was available. Thus, possibility of contamination with general medicines cannot be ruled out.
Availability of adequate space for orderly storage of drugs and for providing staging areas for preparing shipments (issuing) and unloading deliveries (receiving).	None of the test-checked district drugs warehouse has a declared storage capacity. The pharmacists also could not state the storage capacity of the test-checked district drugs warehouse. During JPV, it was observed that except Nongpoh[21], the storage capacity/space of all the warehouses was insufficient to allow orderly storage of various categories of medicines and surgical items. Due to inadequate space, staging areas for preparing shipments and deliveries were not available and more importantly, life-saving drugs were seen haphazardly stored along

[21] Adequate space available since the Medical Officer's quarter was converted for the drugs warehouse.

Parameters	Deficiencies observed during JPV
	with phenyl, bleaching powder, surgical equipment, hospital bedding materials, *etc*.
Existence of Stock control mechanism	In all the test-checked district drugs warehouses, random and periodic checking system by higher authority and stock auditing system was not ensured, time to time physical count of stock was not practiced, Bin cards system was not maintained and the stock accounts were not computerised.

As brought out above the audit verification revealed that parameters of storage and stocking of drugs like refrigeration/cold room, separate storage area for cleaning material and poisonous substances, adequate space for orderly storage of drugs, *etc.* were not adhered to in the test checked DHs. Thus, the prevailing system and condition of the storage of drugs in the test-checked district drugs warehouse were not conducive and were susceptible to theft, damages and contamination.

Photographic evidence of poor storage condition of the drugs in the District drugs warehouse taken during the JPV is given below:

			
Drugs warehouse, Jowai (Photo dt. 14/02/2020)	Drugs warehouse, Tura (Photo dt. 07/02/2020)	Drugs warehouse, Shillong (Photo dt. 11/03/2020)	Drugs warehouse, Nongpoh, (Photo dt. 12/03/2020)

As can be seen from the photographs above, drugs meant for use in the district hospitals were not stored in the prescribed manner in any of the test-checked hospitals, raising concerns about the ability of the hospital staff to retrieve life-saving drugs when required, dispense them to patients efficiently.

As mentioned in **Paragraph Nos. 3.4.1 and 3.4.2**, the requirement of funds for procurement of essential drugs for the hospitals was underestimated and short indented. While several drugs were in a 'stock out' situation, the haphazard manner in which the available drugs are stored makes it difficult to retrieve essential drugs in emergencies and defeat the purpose of availability for patients, when required.

5.2 Infection Control

Infection control practices are important in maintaining a safe environment for both patients and staff in the hospitals by reducing the risk of potential spread of hospital associated infections. This section discusses audit findings in respect of various aspects of infection control.

5.2.1 Standard Operating Procedures

To prevent hospital-acquired infections in patients, visitors and staff, the NHM Assessor's Guidebook 2013 required each DH to frame a schedule of procedure to be

followed by the health care facilities known as Standard Operating Procedures (SOP). Audit observed that SOP was available only in Tura MCH, the other three test-checked DHs did not prepare SOP for Infection Control. Non-availability of SOP resulted in lack of structural response to issues of hygiene and infection control in these DHs as discussed in the succeeding paragraphs.

5.2.2 Hospital Infection Control Committee (HICC)

As per NHM Assessor's Guidebook 2013, Hospital Infection Control Committee (HICC) has to be constituted to frame, implement and monitor infection control policies in the hospital. The availability of HICC, date of formation and number of meetings in test-checked DHs is shown in the table below:

Table 5.2: HICC of the test-checked DHs

Name of the District Hospital	Status of HICC	Date of formation of HICC	No. of HICC meetings during 2014-19
Shillong CH	Yes	Record not available	01
Nongpoh CH	Yes	July 2016	02
Jowai CH	No	-	Nil
Tura MCH	Yes	September 2015	Nil

Source: Records of test-checked DH.

Thus, it could be seen that Jowai CH did not have the Committee (HICC) constituted, whereas Tura MCH did not conduct any meeting, the Shillong and Nongpoh CH had not convened/ held HICC meetings regularly.

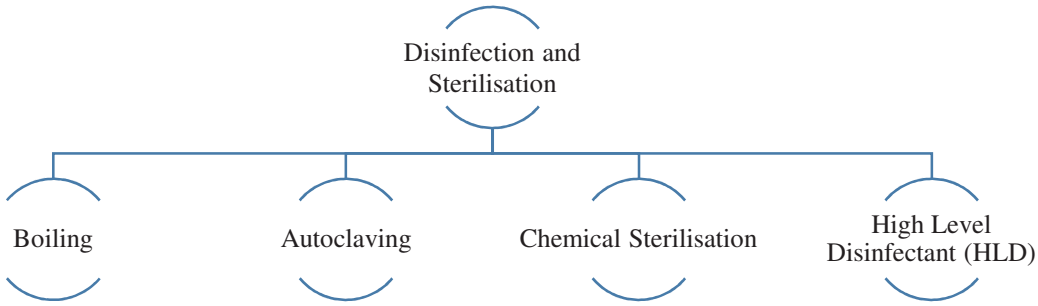
5.2.3 Pest and Rodent Control

Controlling spread of infection through rodents and pests in the hospitals is an important component of infection control practices as per NHM Assessor's Guidebook 2013. Audit observed that only Tura MCH maintained records of pest and rodent control in the test-checked hospitals. In the absence of records in three out of four test-checked DHs, Audit could not derive an assurance whether these hospitals followed pest and rodent control practices.

5.2.4 Disinfection and Sterilisation

As per Hospital Infection Control Guidelines of Indian Council of Medical Research (ICMR), disinfection and sterilisation helps prevent the build-up of bacteria/viruses, *etc*. on the medical tools, linen and consumables and reduce the chances of spread of infection in patients and staff of hospitals. NHM Assessor's Guidebook recommends boiling, autoclaving, high level disinfection (HLD) and chemical sterilisation process for disinfection/sterilisation in the DHs as shown in following chart.

Chart 5.1



Generally, critical instruments/ equipment (those penetrating skin or mucous membrane) should undergo sterilisation before and after use, *e.g.* surgical instruments. Semi-critical instruments/ equipment (those which come in contact with the intact mucous membrane without penetration) should undergo high level disinfection before use and intermediate level disinfection after use, *e.g.* endotracheal tubes. Availability of the methods of disinfection and sterilisation in the test-checked hospitals was as shown in the table below:

Table 5.3: Availability of methods of disinfection and sterilisation in the test-checked DH

Name of the DH	Boiling	Autoclaving	Chemical Sterilisation	HLD
Shillong DH	Yes	Yes	Yes	Yes
Nongpoh DH	Yes	Yes	Yes	No
Jowai DH	Yes	Yes	No	No
Tura MCH	Yes	Yes	Yes	Yes

Source: JPV and records of test-checked DHs.

We saw that Chemical sterilisation facilities were not available at Jowai CH and HLD were not available at Jowai CH and Nongpoh CH, thereby exposing patients to risk of acquiring secondary infections.

5.2.5 Maintenance of Autoclave Machine

As per IPHS, there should be an Annual Maintenance Contract (AMC) for all equipment which need special care and preventive maintenance to avoid breakdown and reduce downtime of such equipment.

Audit observed that although all the four test-checked DHs have installed Autoclave Machine, AMCs of Autoclave machine was not done in three DHs *viz.* (i) Tura MCH, (ii) Jowai CH and (iii) Nongpoh CH. The AMC of Autoclave machine in Shillong CH was also not renewed after expiry. In absence of AMC for equipment like autoclave, *etc*. in the test-checked hospitals, Audit could not derive an assurance regarding preventive maintenance of sterilisation equipment.

5.2.6 Validation of autoclaving process

NHM Assessor's Guidebook requires that biological indicators should be used in all the hospitals to prevent insecticide toxicity due to interactions with the membrane. Such biological indicators are a tool to validate the steam-based sterilisation process in autoclave machine.

Audit observed that whereas this indicator was used in Tura MCH and Jowai CH, Shillong CH and Nongpoh CH did not use it, resulting in non-validation of the sterilisation process using autoclave machine.

5.3 Cleaning Services

5.3.1 Standard Operating Procedure for housekeeping

IPHS required framing of SOP for housekeeping by the hospital authority, to provide a clean environment to patients, visitors, staff and to ensure cleanliness of the hospital premises.

Audit observed that SOP for housekeeping was not available in three test-checked DHs viz. (i) Shillong CH, (ii) Jowai CH and (iii) Nongpoh CH. Non-availability of SOP resulted in lack of structural response to issues of hygiene and cleanliness in the Hospital.

5.3.2 Hygiene practices

NHM Assessor's Guidebook 2013 prescribes that the hospital must have a system to take air and surface samples for microbiological survey to check for infections**.**

Audit observed that none of the test-checked DHs have carried out surface/ air/ hand swab tests during 2014-19. Thus, Audit could not derive an assurance regarding effectiveness of cleaning of surfaces and hands hygiene of hospital staff in the test-checked hospitals.

5.3.3 Cleanliness in the Hospitals

NHM Assessor's Guidebook 2013 requires that the hospitals should ensure decontamination of functional areas.

Audit observed the following deficiencies during JPV:

Toilet in poor condition: Audit noticed that the toilets in the test-checked DHs were in poor condition due to absence of essential items like Tap and Cistern as shown in the photographs:	 Male surgical ward of Shillong CH  Toilet at OPD of Tura MCH  Toilet at OPD of Jowai CH
Urinals were also in poor condition due to non-availability of urinal bowl and flush, urinal without flush and outlet pipe, *etc.*	 Urinals at Male ward of Shillong CH  Urinal at OPD Nongpoh CH

The NHM Assessor's guidebook envisaged that hospital drain should be covered to provide safe and secured environment to the staffs, patients and visitors.	 Open drain outside oncology ward Shillong CH  Open drain outside OPD ward in Jowai CH  Open drain outside emergency ward of Tura MCH
Heavy seepage at various location in Shillong CH was noticed.	 Ortho ward (Nursing station) in Shillong CH  Female medical ward in Shillong CH
All-weather motorable Approach Road was not available in Tura MCH and Jowai CH.	 Approach road of Tura MCH  Approach road to Jowai CH
Distance of at least 2.5 metre between centres of two beds to prevent cross infection and allow bedside nursing care was not ensured in Shillong CH and Tura MCH.	 Shillong CH (1.35m)  Tura MCH (1.5 m)
IPHS envisaged that size of the corridors should be at least 3.0 m wide to ensure smooth and conducive for manoeuvrability of wheeled equipment, *etc*.	 Nongpoh CH (1.55m)  Shillong CH (2.6m)  Jowai CH (2.0m)

Thus, due to poor conditions of toilets, drainage facilities, seepages in hospital rooms and norms for safe distance between hospital beds and for size of corridors not being met. We could not derive an assurance in the test checked DHs regarding effective

housekeeping service to provide an infection free environment to patients, visitors and staffs.

5.3.4 Immunisation and Medical Check-up of Staff

NMH Assessor Guidebook envisages provision of periodic medical check-ups and immunisation of staff to safeguard them from spread of infection.

The number of Medical Check-ups and Immunisation Programmes of staff members conducted during 2014-19 in the test-checked DHs are shown in the following table:

Table 5.4: Immunisation and Medical Check-up of staff at test-checked DHs

Name of the DH	2014-15	2015-16	2016-17	2017-18	2018-19
Shillong CH	Nil	Nil	Nil	Nil	3
Nongpoh CH	Nil	Nil	Nil	Nil	Nil
Jowai CH	Nil	Nil	Nil	Nil	3
Tura MCH	1	2	2	2	2

Audit observed that Tura MCH was the only DH which had immunised its medical staff and conducted medical check-ups for staff members regularly. Nongpoh CH had not conducted the check-ups at all whereas Shillong CH and Jowai CH had not regularly conducted the check-ups. The DHs should take steps to ensure that medical check-up and immunisation programmes of staff members are conducted periodically.

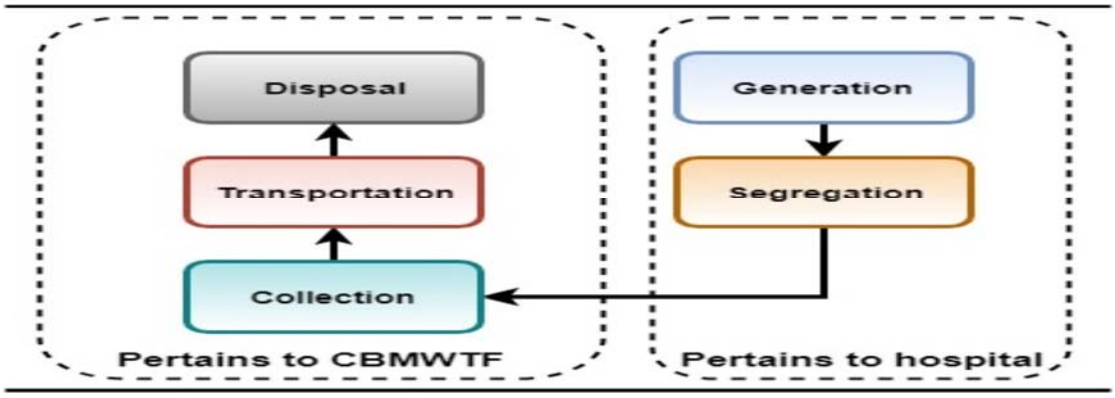
5.4 Hospital Waste Management

Hospital waste management, also known as medical waste management, is a system that handles hospital-generated waste, including infectious, chemical, expired pharmaceutical and radioactive items, and sharps.

5.4.1 Bio-medical waste management

Bio-medical waste (BMW) is generated during procedures related to diagnosis, treatment and immunisation in the hospitals and its management is an integral part of infection control within the hospital premises. The GoI framed Bio-Medical Waste (Management and Handling) Rules, 1998 under Environment (Protection) Act, 1986, which were superseded by Bio-Medical Waste Management Rules, 2016 (BMW Rules). These rules stipulate the procedures for collection, handling, transportation, disposal and monitoring of the BMW with clear roles for waste generators and Common Bio-Medical Waste Treatment Facilitator (CBMWTF) as shown in the chart below.

Chart 5.2



5.4.2 Authorisation for generating BMW

The BMW Rules required the hospitals generating BMW to obtain authorisation from the State Pollution Control Board (SPCB). The category-wise quantity of BMW generated and their disposal were to be forwarded to SPCB in a prescribed format annually.

Audit observed that all the four test-checked DHs had obtained authorisation from the SPCB to generate BMW.

5.4.3 Segregation of BMW at source

The BMW Rules require hospitals to segregate different categories of BMW in separate coloured bins at the source of generation. The waste is to be stored in appropriate colour coded bags at the point of generation and collected by the CBMWTF. Audit observed that all the four test-checked DHs were segregating BMW.

5.4.4 Collection of bio-medical waste

As per BMW Rules, CBMWTF is responsible for collection and proper disposal of BMW from the hospitals. The respective Municipal Authorities of Shillong CH and Tura MCH collect the BMW at respective hospitals. Nongpoh CH and Jowai CH had engaged contractors for collection of BMW. Audit however, did not verify the disposal of BMW collected by Municipal Authorities/ licensed contractors.

During Audit, it was seen that there was huge pile of BMW stored in hospital areas, a health hazard for the patients and staff in the concerned hospitals.

Piling up of BMW for about 4-5 months (Shillong CH)

Piling up of BMW (Nongpoh CH)

Mixing of different BMW (Tura MCH).

5.4.5 Training for management of bio-medical waste

As per the BMW Rules, it is the responsibility of the health care facilities to ensure that all the staff are provided regular training on BMW handling.

Audit observed that while Shillong CH and Tura MCH had conducted 13 and 15 trainings respectively during 2014-19, Nongpoh CH and Jowai CH had not created awareness among its staff in this regard.

5.4.6 Effluent Treatment Plant (ETP)

Hospitals consume large volume of water per day for different purposes and also generate large volumes of wastewater that needs to be treated. Further, in respect of liquid chemical waste generated in health care facilities, BMW Rules mandate

segregation of the waste at source and its pre-treatment or neutralisation prior to mixing with other effluent generated from health care facilities. Proper treatment of hospital wastewater is very essential because improper treatment of effluent from hospitals will lead to environment and human health issues. Hence, the selection of suitable treatment technology called Effluent Treatment Plant (ETP) for hospitals is required.

Audit noticed that the DHS(MI) had not established ETPs in any of the test-checked hospitals for pre-treatment of the liquid chemical waste, resulting in drainage of the waste directly into the sewerage system. However, on the directive (30 May 2016) of National Green Tribunal (NGT), the State Government constructed ETPs at Shillong CH and Jowai CH which were made functional on 15 July 2019 and 23 September 2019 respectively. Meanwhile, the ETP constructed at Nongpoh CH, under the directive of the NGT, at a cost of ₹ 45.35 lakh could not be made functional (July 2020) for want of final inspection from the Meghalaya Pollution Control Board. Moreover, Tura MCH did not have an ETP nor did the DHS(MI) plan any ETP at Tura MCH. In the absence of a functional ETP at Nongpoh CH and Tura MCH, proper treatment of effluents from these hospitals would not be ensured, which has serious implications for environment and human health.

5.5 Linen and Laundry Services

Proper services of linen and laundry is a recognised support service which not only ensures prevention and containment of hospital infection but also contributes to value addition to the image of the hospital in the eyes of public. Clean linen instils psychological confidence in the patients and the public and enhances their faith in the services rendered by the hospital. Simultaneously, an efficient linen and laundry service is of advantage for hospital marketing and speaks of ability of the medical care services.

Audit observed that there were no written manual policies for collection, washing, calendaring, storage, distribution, *etc*. in the Linen and Laundry Services in the test-checked DHs during 2014-19. However, the standard guidelines were followed *i.e.* (i) segregation of linen like torn, blood stained, urinated, *etc.*, and sanitisation or chemical treatment (if necessary) was done by the ward in-charge and (ii) collection of linen for washing is done by the laundry staff themselves.

5.5.1 Availability of linen

The IPHS prescribe the number of different types of linen that are required for patient care services for hospitals. The availability (in percentage) of different prescribed linen in each of the test-checked hospitals (as on the date of JPV) was as follows.

Table 5.5: Availability of linen in test-checked DHs

Sl. No.	Linen	Availability (in percentage)			
		Shillong CH	Nongpoh CH	Jowai CH	Tura MCH
1	Bedsheets	146	30	51	63
2	Bedspreads	84	20	26	167
3	Blankets Red and blue	855	480	356	800
4	Draw sheet	274	60	60	Nil
5	Doctor's overcoat	Nil	40	3	167
6	Hospital worker OT coat	10	20	Nil	Nil

Sl. No.	Linen	Availability (in percentage)			
		Shillong CH	Nongpoh CH	Jowai CH	Tura MCH
7	Patients House coat (for female)	18	8	3	Nil
8	Patients Pyjama (for male) Shirt	70	17	15	Nil
9	Over shoes pairs	Nil	30	40	Nil
10	Pillows	89	33	55	50
11	Pillow covers	107	40	17	33
12	Mattress (foam) Adult	95	25	40	50
13	Paediatric Mattress	Nil	Nil	140	Nil
14	Abdominal sheets for OT	38	16	17	Nil
15	Perineal sheets for OT	7	20	13	Nil
16	Leggings	12	Nil	28	Nil
17	Mats (Nylon)	Nil	Nil	Nil	Nil
18	Mackintosh sheet (in meters)	104	375	100	Nil
	Benchmark	100%	100%	100%	100%

Source: Records of test-checked DH.

From the Table above audit observed that out of the total prescribed 18 types of linens, the four test-checked DHs[22] did not have all types of linens. In absence of patient's House coat (for female) in Tura MCH, the in-patients of the hospital were found compelled to wear their personal clothing.

We also noticed shortages of available linens with the shortfall ranging from 5 to 93 *per cent* at Shillong CH; 40 to 92 *per cent* at Nongpoh CH; 40 to 97 *per cent* at Jowai CH and 47 to 67 *per cent* at Tura MCH.

Due to shortage of basic linen like bedsheets, bedspreads and pillow covers the hospitals could not ensure changing of these linen on every alternate day or on daily basis. Nongpoh CH practiced changing of bedsheet, bedspread, *etc.*, in general wards only after patients are discharged while the other three DHs changed once in a week or when the patients are discharged. This indicates that all the DHs could not fully ensure proper hygienic care services to the in-patients.

5.5.2 Deficiencies in laundry services

As per the IPHS, laundry facility should be available in the hospitals to provide well washed and infection free linen to patients. It should be provided with necessary facilities for drying, pressing and storage of soiled and cleaned linens.

During the course of audit (through JPV), we noticed that in four test-checked DHs, specific or demarcated area for laundry was not available nor was coloured bag for segregation, covered trolley for transportation and paper bag for storage was available as per NHM assessor Guidebook. Linen received from different wards were mixed together and washed together. Washing Machine was available only in Tura MCH to provide laundry service while the remaining test checked DHs did not have Washing Machine. Linen were dried in an unhygienic manner in Shillong CH & Jowai CH. Physical Verification of linen was not carried out in Jowai CH and Tura MCH as

[22] Jowai CH (02); Nongpoh CH (03), Shillong CH (04) and Tura MCH (11).

envisaged in NHM Assessor Guidebook. Overall washing quality was not satisfactory as linen with stains was noticed in Shillong CH.

Mixing of different type of linen and washing manually at Shillong DH

Presence of stray dogs where linen are dried at Shillong DH

Linen drying place at Nongpoh CH

Torn and unhygienic bed sheet with stains (male ward of Shillong DH

Stained linen and pillow cover (surgical ward at Jowai DH)

Stained linen and pillow cover (surgical ward at Tura MCH)

5.6 Ambulance Service

IPHS specify the number of ambulances required for each DH according to the number of beds. Further, IPHS envisage that the ambulances should be provided with basic life support/ advanced life support equipment and communication system.

The actual position of availability of ambulances in test-checked DH and status of provision of basic life support equipment/ communication system is shown in the table below:

Table 5.6: Ambulance service of the test-checked DHs

Name of the DH	Requirement as per IPHS	Ambulance available	Shortfall	Availability of	
				Basic life support equipment	Communication system
Shillong CH	4	2	**2**	No	No
Nongpoh CH	3	1	**2**	No	No
Jowai CH	3	2	**1**	No	No
Tura MCH	3	2	**1**	No	No
Total	**13**	**7**	**6**		

Source: Records of the test-checked hospital.

As can be seen from the above details there was a 46 *per cent* shortage of ambulances and basic life support equipment and communication system or GPS were not fitted/available in any of the available ambulances. Thus, all the test-checked DHs could not provide an effective patient transport service in case of emergencies.

The DHS (MI) stated in the exit conference (July 2020) that ambulance services fitted with life support equipment are being provided through EMRI agency on contract.

The fact however, remains that, the agreement with the EMRI agency was to provide emergency ambulance service to the State by operating from selective 'locations[23] based ambulances' linked to a centralised Call Centre by calling 108 and not placed with any of the DHs round the clock.

5.6.1 Availability of dedicated parking space for ambulances

As per IPHS and NHM Assessors Guidebook 2013, there should be dedicated parking space for ambulance. During audit, it was noticed that dedicated parking space for ambulance was not available in Nongpoh CH and hence, obstruction free access for the ambulance from other vehicles in times of emergency was not ensured.

Conclusion

The prevailing system of storage of drugs in the test-checked hospitals was not conducive for orderly storage and as per norms/ parameters making the drugs susceptible to damage, contamination and theft and risk to patients by storing poisonous substances not meant for human consumption, along with the drugs.

Audit noticed absence of institutionalised mechanism for Infection Control in the DHs. In the test checked DHs the Cleaning services and hygiene practices were not satisfactory to provide an assurance regarding an infection free environment to the medical staff and patients. Bio Medical Waste (BMW) was not collected on daily basis as envisaged in the BMW rules. The Staff had been trained on BMW handling in all the test-checked hospitals. The test-checked DHs of Nongpoh CH and Tura MCH did not have functional ETP for treatment of hospital effluents posing serious implications for environment and human health.

Recommendations

i. *The infection control mechanism should be embedded in hospital through proper monitoring by the HICC. Adoption of pest and rodent control measures, methods of sterilisation of OT instruments prescribed, microbiological survey; proper immunisation, medical check-up and training of staff should be ensured by the hospital administration.*
ii. *The BMW Rules should be adhered and followed rigorously to provide an infection free environment in the hospital.*
iii. *Effluent Treatment Plants may be constructed in all the hospitals. State Government needs to effectively pursue the matter of inspection of ETP at Nongpoh CH with SPCB.*

[23] 43 locations as on November 2019.

Chapter – 6 Maternal and Child Care and Cancer

Adequacy of healthcare services relating to maternal and infant care and cancer treatment

6.1 Maternal and Child Health

Maternal health refers to the health of women during pregnancy, childbirth and the postpartum period, whereas prenatal health refers to health from 22 completed weeks of gestation until seven completed days after birth. New born health is the babies' first month of life. A healthy start during the prenatal period influences infancy, childhood and adulthood[24].

6.1.1 MMR and IMR (State level)

Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR)[25] are important indicators of the quality of maternal and child care services available and form part of the most sensitive index of quality of maternal and new born care. The All India MMR during 2011-13 stood at 167 per 100,000 which declined to 130 in 2014-16 and was 113 in 2016-18. The All India IMR which stood at 40/ 1000 Live Births in 2013 fell to 33/ 1000 Live Births by 2017.

The goal set forth by the State Government in its SPIP[26] 2014-17 was to reduce MMR from 298 (HMIS, 2013-14) to 150 by 2014-17 and to reduce IMR from 49/ 1000 Live Births (SRS-2012) to less than 30 by 2014-17. Trend of MMR and IMR in Meghalaya during 2014-19 was as follows:

Table 6.1: Trend of MMR and IMR of Meghalaya during 2014-19

Year	Number of reported			MMR (of one lakh live births)	IMR (of 1000 live births)
	Livebirths	Maternal deaths	Infant deaths		
2014-15	84,908	187	2,307	220	27
2015-16	85,790	211	2,508	246	29
2016-17	85,297	198	2,427	232	28
2017-18	83,269	197	2,512	237	30
2018-19	83,258	164	2,073	197	25
Total	**4,22,522**	**957**	**11,827**		

Source: HMIS data of the Director, NHM, Shillong.

- During 2014-19, the State's MMR ranged between 246 per one lakh live births in 2015-16 and 197 in 2018-19 and that of IMR ranged between 29 per 1000

[24] According to World Health Organisation (WHO).

[25] Maternal Mortality Rate (MMR) is the number of deaths per 100,000 live births due to maternal causes. Infant Mortality Rate (IMR) is the number of deaths of infants (under one year) per 1,000 live births.

[26] State Program Implementation Plans (SPIP) is a crucial documents in NHM through which the States/UTs plan, prioritise and propose strategies and activities to address the challenges in public health.

live births in 2015-16 and 25 in 2018-19. Both the MMR and IMR showed a declining trend, which is a positive sign.

- The MMR of 220 per one lakh live births in 2014-15 had reduced to 197 in 2018-19, a 10 *per cent* decline. However, the target of 150/ 100000 livebirths set-forth by the State (2014) to be achieved by 2017 was yet to be achieved even as of 2019. The State's MMR at 197 in 2018-19 continues to be higher than the all India MMR of 113 for 2016-18.
- The IMR of 28 per 1000 live births in 2016-17 was better than the all India rate of 33/1000 for 2017.

6.1.2 MMR and IMR in the test-checked DHs

The trend of MMR and IMR of three[27] out of four test-checked DHs during 2014-19 was as given in table below:

Table 6.2: Trend of MMR and IMR in the test-checked DHs

Year	Jowai CH					Tura MCH					Nongpoh CH				
	Live births	Infant deaths	M/ deaths	MMR	IMR	Live birth	Infant death	M/ death	MMR	IMR	Live birth	Infant death	M/ death	MMR	IMR
2014-15	2153	81	6	279	38	1651	104	28	1696	63	342	10	0	0	29
2015-16	2442	94	4	164	38	1689	119	39	2309	70	454	4	0	0	9
2016-17	2331	68	2	86	29	1615	122	19	1176	76	579	2	0	0	3
2017-18	2682	116	9	336	43	1550	115	20	1290	74	574	3	0	0	5
2018-19	2998	92	2	67	31	1609	125	13	808	78	615	4	0	0	7
Total	**12606**	**451**	**23**			**8114**	**585**	**119**			**2564**	**23**			

Source: Records of the test-checked DHs.
M/death=Maternal death

From the Table above, it can be seen that:

- During 2014-19, the average IMR of two test-checked DHs *viz.* Tura MCH and Jowai CH with 72 and 36 per 1000 live births was much higher than the State average of 28 per 1000 live births. The IMR of Tura MCH displayed an upward trend and was also persistently higher than the State figures *i.e.* IMR of 63 per 1000 live births of Tura MCH in 2014-15 had gone up to 78 in 2018-19;
- The major causes of infant deaths during 2014-19 have been identified as Pneumonia (19 *per cent*), Fever (11 *per cent*), Asphyxia (six *per cent*), Sepsis & LBW (five *per cent* each), Diarrhoea (three *per cent*), *etc*. while the major causes of maternal deaths have been identified as Anaemia, Haemorrhage (both Ante and Post-Partum), Retained Placenta, Cardiac and Respiratory failure; and
- In respect of MMR, again the Tura MCH with a five-year average of 1456 per one lakh live births was higher than the State average (226) by 549 *per cent*.

Thus, the State Government needs to address the trends for both IMR and MMR in Tura, urgently.

[27] Shillong CH did not provide maternity and child services as the same is being provided by Ganesh Das Hospital, a Government Hospital at Shillong.

The MS, Tura MCH stated that the hospital used to conduct maternal death review meeting. Overall, Audit noted from the data provided by the Joint Mission Director, NHM that there are 6,799 ASHA workers in place in the State as on 30 September 2020 with no reported vacancies indicating a vast network of ground level health workers. One of the roles envisaged for the ASHA workers is to mobilise the community and facilitate people's access to services available at the village/ SCs/ PHCs such as ANC and PNC check-ups as part of their role as health care facilitator. The high MMR rate in the State indicates that despite the presence of the ASHA worker at the village level, even the community mobilisation for pregnant women to avail institutional ANC and PNC services is not satisfactory.

During exit conference (16 July 2020), the Commissioner & Secretary while agreeing with the Audit observations stated that the Government is seized of the issue and is taking necessary remedial action which included an App for tracing mothers. Government's response to the high IMR and MMR rates in Tura and Jowai is only generic in nature. As reported in subsequent paragraphs of this chapter, the Government health facilities were woefully inadequate in addressing common causes of infant/ maternal mortality and in provision of ante-natal care.

6.1.3 Antenatal care

Antenatal Care (ANC) is the systemic supervision of women during pregnancy to monitor the progress of foetal growth and to ascertain the well-being of the mother and the foetus. ANC involves general and abdominal examination[28] and laboratory investigations to monitor pregnancies, management of complications, such as Reproductive Tract Infection (RTI)/ Sexually Transmitted Infection (STI) and comprehensive abortion care. Early detection of complications during pregnancy through ANC check-up is important for preventing maternal mortality and morbidity. Quality ANC includes minimum of at least four ANCs including early registration, first ANC in first trimester along with physical and abdominal examinations, two doses of tetanus toxoid (TT) immunisation, *etc.*

The total number of pregnant women in the State registered for ANC, registered within the first trimester (within 12 weeks), number of pregnant women who received up to 3-4 ANC check-up, number of pregnant women given up to TT2/ Booster, *etc.* during 2014-19 was as follows:

Table 6.3: Pregnant women (PW) registered and received ANC services

Year	Number of PW registered for ANC		No. of PWs received up to 3/4 ANC check-ups (*per cent*)	TT2 or Booster given to PW (*per cent*)	Tablets given to PW	
	Total	Within first trimester (*per cent*)			IFA	Calcium
2014-15	129,575	41,786 (32.2)	71,446 (55.1)	71,666 (55.3)	53,258 (41.1)	-
2015-16	131,945	42,309 (32.1)	75,347 (57.1)	74,206 (56.3)	46,821 (35.5)	-
2016-17	133,880	45,180 (33.7)	76,997 (57.5)	73,954 (55.2)	61,774 (46.1)	-
2017-18	131,034	45,048 (34.4)	56,960 (43.5)	72,834 (55.6)	44,512 (34.0)	25,716 (19.6)
2018-19	141,030	43,766 (31.0)	52,306 (37.1)	72,821 (51.6)	47,245 (33.5)	31,477 (22.3)
Total	**667,464**	**218,089 (33.0)**	**333,056 (50.0)**	**365,481 (55.0)**	**253,610 (38.0)**	**57,193 (21.0)**

Source: Information furnished Mission Director, NHM, Meghalaya.

[28] Weight measure, blood pressure, respiratory rate, check for pallor and oedema, abdominal palpation for foetal growth, foetal lie and auscultation of Foetal Heart Sound (FHS) *etc*.

- As can be seen from the details tabulated above, during 2014-19, the number of pregnant women registered for ANC within the first trimester was only 33 *per cent*. Further, the trend of registration for ANC during the first trimester declined from 32.2 *per cent* in 2014-15 to 31.0 *per cent* in 2018-19;
- The total number of ANC up to the 3rd or 4th of registered pregnant women showed a decreasing trend *i.e.,* the 55.1 *per cent* achieved in 2014-15 has sharply declined to 37.1 *per cent* in 2018-19;
- The number of TT2 or Booster dosages administered to pregnant women had also declined from 55.3 *per cent* in 2014-15 to 51.6 *per cent* in 2018-19;
- Similarly, the number of pregnant women given with IFA 100/ 180 Tablets has declined from 41.1 *per cent* in 2014-15 to 33.5 *per cent* in 2018-19. The reasons for low distribution of IFA tablets was attributed (September 2020) by the DHS (MCH&FW) to (a) discontinuation of ANC check-up, (b) pregnancy ending up in abortion and (c) pregnant women attending multiple health centres where record showing issuance of 180 IFA tablets are not available in any of those health centres; and
- Calcium tablets were given to pregnant women from 2017-18 onwards. In these two years, it was seen that only 19.6 *per cent* and 22.3 *per cent* of total pregnant women were covered during 2017-18 and 2018-19 respectively.

It is clear from the above that the State Government needed to motivate the pregnant women further, to avail of ANC check-up facilities and administer the required dosages of TT, IFA and Calcium Tablets to them for improving ANC.

During exit conference (16 July 2020), the Commissioner & Secretary while agreeing with the Audit observations stated that the Department had strengthened ANC check-up at the village level through the services of ANM. He also stated that the Department has come up with new initiatives like Village Health Nutrition Day (NHND), the objective of which mainly relate to achieve full ANC check-up and Immunisation. Besides, the Government has recently launched a '**MotherApps**' where all pregnant women will be registered and give an alert thereby monitored by Doctors.

Despite these efforts, the infant and maternal mortality continues to remain a cause of concern as 877 new-borns and 61 pregnant women had died in Meghalaya during April-July 2020.

6.1.4 Institutional deliveries

During 2014-19, a total of 4.29 lakh deliveries were reported, of which, 2.34 lakh (54.5 *per cent*) were delivered in institutions (Public and Private), while 1.95 lakh (45.5 *per cent*) were delivered at home. Year-wise figures of institutional deliveries (ID) and deliveries at home in the State are given in the table below:

Table 6.4: - Institutional deliveries and delivery at home during 2014-19

Year	Details of Institutional deliveries (*per cent*)			Home deliveries (*per cent*)	Total reported deliveries
	Public Institutions	Private Institutions	Total		
2014-15	34,411 (39.8)	9,970 (11.5)	**44,381 (51.4)**	41,990 (48.6)	**86,371**
2015-16	36,648 (42.1)	9,369 (10.8)	**46,017 (52.8)**	41,108 (47.2)	**87,125**
2016-17	38,346 (44.3)	9,146 (10.6)	**47,492 (54.8)**	39,147 (45.2)	**86,639**
2017-18	37,534 (44.5)	9,889 (11.7)	**47,423 (56.2)**	36,987 (43.8)	**84,410**
2018-19	37,522 (44.5)	11,233 (13.3)	**48,755 (57.8)**	35,617 (42.2)	**84,372**
Total	**184,461**	**49,607**	**234,068**	**194,849**	**428,917**

Source: HMIS data of the Director NHM, Meghalaya.

- There was a marginal improvement of 9.9 *per cent* in institutional deliveries during the five-year period 2014-19. From 44,381 deliveries in 2014-15 to 48,755 deliveries in 2018-19, the pace of increase in institutional deliveries is too slow to achieve the target of 100 *per cent* institutional deliveries in the near future and the high percentage of home deliveries is a matter of serious concern;
- There was an overall increase of nine *per cent* in respect of deliveries at Public institutions from 34,411 deliveries in 2014-15 to 37,522 in 2018-19. On the other hand, there was an overall increase of 12.7 *per cent* in respect of deliveries at Private institutions during the same period; and
- There was a progressive increase in the number of institutional deliveries in Ri-Bhoi and West Jaintia Hills districts. However, institutional deliveries progressively reduced in the two districts-West Garo Hills district during the five-year period 2014-19 and East Khasi Hills district during the three-year period 2016-19.

Though no specific reason was furnished, lack of adequate SCs, PHCs and CHCs as pointed out in **paragraph 3.2.2** could possibly be one of the reasons for low ID in the State.

It could also be seen that there was a huge difference between numbers of pregnant women registered (667,464) and the total number of reported deliveries (428,917). The DHS (MCH&FW) attributed (September 2020) that the difference in figures was due to (i) double/triple registration, (ii) pregnancy wastage and (iii) migrant labourers who are registered in the State but deliver outside the State.

In absence of specific details in support of the reasons for variation provided by the DHS (MCH&FW), the fact remains that the huge mismatch in the two figures needs to be addressed by the Health Department by giving specific directions to the district hospitals in this regard to increase institutional deliveries of registered women. They also need to monitor the pregnancy outcomes of registered pregnant women in the State for improving institutional deliveries.

6.1.5 Post-natal care

Maternal mortality is a key indicator for maternal and child health. It can result from multiple reasons, such as medical, socio-economic and health system-related factors. Ensuring 48 hours stay in hospital during childbirth is an important component for

identification and management of emergencies occurring during post-natal period and reducing MMR.

The position of women who were discharged within 48 hours of delivery in the four selected districts is shown in the following table:

Table 6.5: Number of women discharged within 48 hours of delivery in the selected districts

Year	East Khasi Hills			Ri-Bhoi			West Jaintia Hills			West Garo Hills		
	No. of ID	Dis-charged within 48 hours	%	No. of ID	Dis-charged within 48 hours	%	No. of ID	Dis-charged within 48 hours	%	No. of ID	Dis-charged within 48 hours	%
2014-15	14205	4648	32.7	1656	1546	93.4	3470	2630	75.8	5886	4567	77.6
2015-16	15358	3827	24.9	1853	478	25.8	3940	3040	77.2	5678	4324	76.2
2016-17	15552	5995	38.5	2120	470	22.2	4016	3197	79.6	5516	3997	72.5
2017-18	14122	6138	43.5	2229	462	20.7	4305	3759	87.3	5293	2369	44.8
2018-19	13004	4090	31.5	2373	809	34.1	4553	3966	87.1	5209	2845	54.6
Average			**34.2**			**39.2**			**81.4**			**65.1**

Source: HMIS data of test-checked districts.

The table above shows that during 2014-19, average of the four test checked districts with respect to minimum 48 hours of hospital stay for all women after delivery for proper post-natal care was 55 *per cent*. The average percentage of women discharged within 48 hours of delivery in West Jaintia Hills district (81.4 *per cent*) and West Garo Hills district (65.1 *per cent*) were higher than the average.

During exit conference (16 July 2020), the DHS (MCH *cum* Jt. Mission Director, NHM) stated that it was mainly due to lack/ shortage of beds in the DHs where post-delivery mothers were forced to be discharged. She however, stated that regular monitoring by ANM are ensured through home visit at regular intervals.

Response of the Government, regarding shortage of beds in DHs only reiterates the need for adequate capital investment in public health facilities, which has been repeatedly observed.

6.1.6 Special New born Care Unit (SNCU)

Special New-born Care Units (SNCU) are meant primarily to reduce the case fatality among sick children born within the hospital or outside, including home deliveries, within the first 28 days of life. Therefore, SNCU plays a vital role in Post Natal Care (PNC). IPHS envisages that every DH should provide facilities of SNCU with at least 12 beds with specially trained staff. Table 6.6 shows the number of sick new borns admitted in the SNCU during 2014-19:

Table 6.6: No. of new-borns admitted in test checked DHs during 2014-19

Year	2014-15	2015-16	2016-17	2017-18	2018-19
Tura MCH	351	360	292	312	292
Jowai CH	NA	NA	NA	188	414

Source: Records of test-checked DHs.

It was seen that SNCU was available only in two test-checked DHs (i) Tura MCH (14 beds) & (ii) Jowai CH (seven beds) w. e. f. October 2017. In the absence of SNCU at Shillong and Nongpoh CH and less number of requisite beds at Jowai CH as per norms,

the sick new-born had been deprived of the proper Post Natal Care (PNC) which is essential to reduce fatality.

6.1.7 Availability of Labour Ward, Neonatal and SNCU equipment in DHs

The IPHS prescribed 28 types of essential equipment for Labour Ward, Neonatal and Special Newborn Care Unit (SNCU). Of these 28, Audit has sampled nine equipment to ascertain the physical status of the equipment against the test-checked DHs having labour room and neonatal unit or SNCU. The details of the sampled equipment and audit findings are highlighted in the table below:

Table 6.7: Shortage/ non-availability of Neonatal and SNCU equipment in the test-checked DHs

Sl. No.	Equipment	Utility of the equipment	Audit findings
1	Baby Incubators	Incubators are clear boxes which help keep the baby warm. Premature or sick babies can struggle to stay warm on their own.	None of the test-checked DHs had this essential equipment.
2	Foetal Doppler	It is a hand-held ultrasound transducer used to detect the foetal heart beat for prenatal care	Nongpoh CH did not have this essential equipment. Jowai CH had one against requirement of two. Only Tura MCH had adequate No. of this equipment.
3	Cardiotocography Monitor	Cardiotocography (CTG) is a technical means of recording the foetal heartbeat and the uterine contractions during pregnancy.	Jowai CH did not have this essential equipment. Tura MCH and Nongpoh CH had one each against requirement of two Nos.
4	Vacuum extractor metal cup	A vacuum extraction, also known as a vacuum-assisted delivery, is used to help move the baby through the birth canal during delivery when a mom's labour has stalled.	Nongpoh and Jowai CH did not have this essential equipment, only Tura MCH had the equipment (two Nos.).
5	Cardiac monitor baby & adult	A device to monitor the heartbeat.	None of the test-checked DHs had this essential equipment.
6	Nebuliser baby	A nebuliser is a device that turns liquid medicine into a mist, used to treat the swelling in child's airway, shortness of breath, coughing, and wheezing.	Nongpoh and Jowai CH have one each against the requirement of two. Only Tura MCH has adequate number.
7	Weighing machine infant	For measuring the weight of baby	Jowai CH has one and Nongpoh CH has two against requirement of three. Only Tura MCH has adequate number.
8	Haemoglobinometer	A haemoglobinometer is an instrument used to determine the haemoglobin content of the blood by spectrophotometric measurement.	Jowai CH did not have this essential equipment.
9	Glucometer	A blood glucose meter is a small, portable machine that's used to measure how much glucose (a type of sugar) is in the blood (also known as the blood glucose level).	All the DHs have this equipment

Source: Information furnished by health centres.

Thus, incubators (*an essential equipment, especially required for premature or sick babies to keep them warm*) and cardiac monitor (*a device to monitor the heartbeat of babies and mother*) were not available in any of the test-checked DHs. Other essential equipment to assist deliveries and for care of new born babies were either not available or inadequate in number.

6.1.8 Immunisation of new borns

As per Maternal New born Health Toolkits 2013, four vaccines *viz.* (i) Oral Polio Vaccine 0-OPV0, (ii) Bacille Calmette Guerin – BCG, (iii) Hepatitis-B0 and (iv) Inj. Vitamin-K are to be administered on the day of birth of the child.

The position of immunisation of OPV0, BCG, Hepatitis B0 and Inj. Vitamin K of the test-checked DHs during 2017-18 to 2018-19 was as given in the table below:

Table 6.8: Position of immunisation of OPV0, BCG, Hepatitis B0 and Inj. Vitamin K

Name of the Hospital	Total Live births during 2017-19	No. of children immunised with Inj. Vitamin-K	No. of children immunised with BCG	No. of children immunised with OPV0	No. of children immunised with Hepatitis B0
Nongpoh CH	1381	1108 (80)	763 (55)	1341 (97)	1135 (82)
Jowai CH	5670	5651 (99)	4773 (84)	4929 (87)	4946 (87)
Tura MCH	3176	3049 (96)	3547 (112)	3486 (110)	2941 (93)
Total	**10227**	**9808 (96)**	**9083 (89)**	**9756 (95)**	**9022 (88)**

Source: HMIS of test-checked DHs.

We noticed that the average percentage of immunisation achieved in the four DHs ranged between 88 *per cent* (Hepatitis-B0) and 96 *per cent* (Inj. Vitamin-K). Nongpoh CH lagged behind in respect of BCG vaccine (55 *per cent*).

The Medical Superintendent of Nongpoh CH stated (30 July 2020) that shortfall in administration of BCG vaccine was due to non-availability of the vaccine in stock and in some cases when there was only one or two new born, the BCG vials were not opened to avoid wastage. The reply is not acceptable since the vaccine has to be administered to each and every new born. The response also indicates an apathetic attitude towards child immunisation by the health authorities, and needs to be urgently addressed at the highest level in the Government.

6.1.9 Pregnancy outcomes

With a view to gauge the quality of maternity care provided by the hospitals, Audit test-checked the pregnancy outcomes in terms of live births, still births[29] and neonatal deaths pertaining to 2014-19, as discussed below.

6.1.9.1 Still births

Still birth or intrauterine foetal death is an unfavourable pregnancy outcome and is defined as complete expulsion or extraction of baby from its mother where the foetus does not breathe or show any evidence of life, such as breathing of the heart or a cry or movement of the limbs[30]. World Health Organisation (WHO) defines Still Birth for international comparison as a baby born with absolutely no signs of life at or after 28 weeks of gestation. Still birth rate is a key indicator of quality of care during pregnancy and childbirth.

Audit observed that still birth rate of three test-checked DHs during 2014-19 was between 0.7 and 3.6 *per cent* as given in the following table:

[29] Mismanaged ANC and delivery process convert a normal delivery into stillbirth.
[30] As per GoI Operational guidelines for establishing sentinel stillbirth surveillance system 2016.

Table 6.9: Hospital wise Stillbirths during 2014-19

Hospital	No. of deliveries during 2014-19	No. of live births (%)	Still births (%)
Jowai CH	13024	12606 (96.8)	465 (3.6)
Nongpoh CH	2685	2564 (95.5)	20 (0.7)
Tura MCH	8251	8114 (98.3)	201 (2.4)
Average			**686 (2.3)**

Source: Records of test-checked DHs.

The still birth rate of Jowai CH and Tura MCH with 3.6 and 2.4 *per cent* were higher than the average of the three test-checked DHs (2.3 *per cent*).

6.1.9.2 Neonatal deaths

Neonatal death is death during the first 28 days of delivery. Neonatal death rate is also an indicator of quality of maternity and new born care services. MNH Toolkit requires hospitals to record the number of neonatal deaths per month with causes of such deaths in the labour room register.

Table 6.10: Position of neonatal deaths in the test-checked DHs during 2014-19

Year	Tura MCH		Jowai CH		Nongpoh CH	
	Infant mortality cases	Neo-natal cases	Infant mortality cases	Neo-natal cases	Infant mortality cases	Neo-natal cases
2014-15	104	55 (53)	81	56 (69)	Records not available	
2015-16	119	57 (48)	94	57 (61)		
2016-17	122	56 (46)	68	39 (57)		
2017-18	115	50 (43)	116	69 (59)	3	0 (0)
2018-19	125	64 (51)	92	60 (65)	4	3 (75)
Total	**585**	**282 (48)**	**451**	**281 (62)**	**7**	**3 (43)**

Source: Records of test-checked DHs.

The table above shows that neonatal deaths represented 62 *per cent* of IMR in Jowai CH, 48 *per cent* in Tura MCH and 43 *per cent* in Nongpoh CH. Thus, neonatal deaths continued to be one of the main contributors of IMR. Reason attributed for neonatal death by the three hospitals were (i) asphyxia (ii) severe anaemia and (iii) sepsis.

During Exit conference (16 July 2020), the DHS (MCH *cum* Jt. Mission Director, NHM) while agreeing with the Audit observations stated that neonatal death is also attributable to traditional/ cultural belief that 'normal delivery is on completion of 10 months', which normally resulted in overgrowth of the foetus inside the womb and complicates the delivery, leading to neonatal death in many occasions known as death due to Asphyxia. In regard to neonatal death due to Sepsis, she stated that it generally happened to those deliveries at home. While cultural beliefs could be one of the reasons for neo-natal deaths, the fact that only 33 *per cent* women registered for ANC in the 1st Trimester **(Paragraph 6.1.3)** remains a critical shortcomings to be addressed by the hospitals and DHS. The State Government also needed to increase its awareness campaigns in rural/ hilly areas to address and prevent late deliveries by women.

6.1.10 Veracity of HMIS data

In order to ascertain the correctness of data/ information submitted to the Ministry of Health & Family Welfare, Government of India, Audit has examined records of three parameters pertaining to the period from 2017-18 to 2018-19 of the three selected

DHs[31]. It was observed that the data reported to the Ministry in respect of the three selected parameters during the sampled years were all higher than the actual data recorded in the respective DHs. The details are given in the following table:

Table 6.11: Comparison of HMIS data with records of Nongpoh CH, Tura MCH and Jowai CH

Month/ Year	Total No. of pregnant women registered for ANC as per		Total No. of pregnant women given TT1 as per		Total No. of pregnant women given TT2 as per	
	HMIS data	DH records	HMIS data	DH records	HMIS data	DH records
2017-18	3561	2874	1532	1352	1227	1040
2018-19	4000	2908	1469	1402	1055	996
Total	**7561**	**5782**	**3001**	**2754**	**2282**	**2036**
Difference	**1779**		**247**		**246**	
Percentage	***24%***		***8%***		***11%***	

Source: Records of Nongpoh CH, Tura MCH and Jowai CH and HMIS data.

As can be seen from the Table above, the HMIS data for pregnant women registered for ANC was inflated by 24 *per cent* and the number of pregnant women administered with TT1 and TT2 was inflated by eight and 11 *per cent* each. These discrepancies in the HMIS data submitted to the GoI with reference to actual data needed to be corrected.

Conclusion

Though the State's MMR and IMR showed a positive decline during the period, the State's IMR target of 150/100000 live births (2014) to be achieved by 2017 had not been achieved even by 2019. The State's MMR at 197 continues to be higher than the all India MMR of 113 for 2016-18. During 2014-19, the average IMR of two test-checked DHs *viz.* Tura MCH and Jowai CH with 72 and 36 per 1000 live births was much higher than the State average of 28 per 1000 live births. Neonatal deaths was the main contributor to the State's IMR.

The ANC coverage was also poor, with 67 *per cent* pregnant women not registering for ANC within the first trimester. Further, the trend of registration for ANC during the first trimester has declined from 32.2 *per cent* in 2014-15 to 31.0 *per cent* in 2018-19.

The huge mismatch of figures (667,464) between pregnant women registered and the deliveries (428,917) in the State could not be convincingly explained/addressed by the State.

A review of only nine sampled types of essential equipment for Labour Ward, Neonatal and Special New born Care Unit (SNCU) revealed that the test checked hospitals did not have all the essential equipment such as incubators, foetal Doppler and vacuum extractors, required for child deliveries and care of new born babies.

None of the test-checked DHs had achieved 100 *per cent* immunisation of the four Zero day vaccines.

[31] Jowai CH, Tura MCH and Nongpoh CH under the DM&HO Ri-Bhoi. Shillong CH did not implement RCH.

Recommendations

i. *Concerted efforts may be made to reduce the IMR to the target of* 150/100000 live births *set by the State Government. This can be achieved to a great extent by providing adequate and timely ANC and PNC to all pregnant women.*

ii. *The State Government may ensure achievement of 100 per cent institutional delivery to improve its MMR and also ensure Immunisation of all new born babies.*

iii. *The Government may ensure that the hospitals are equipped completely with all the essential equipment for child deliveries and new born baby care.*

iv. *Pregnancy outcomes of stillbirths and neo natal deaths needed to be addressed by the State Government by more positive measures including awareness/ communication campaigns.*

6.2 Cancer

6.2.1 Cancer incidence, common type of cancer and cancer mortality in the State

The Population Based Cancer Registry (PBCR), Shillong, Meghalaya as part of National Cancer Registry Programme (NCRP) was started (August 2009) in Civil Hospital, Shillong, and its office is now located at Pasteur Institute, Polo, Shillong. The PBCR, Shillong, Meghalaya covers a defined population (18, 63,347) of four districts[32] of Meghalaya. The PBCR, Shillong, Meghalaya, registers all malignant neoplasm (cancers), with a morphology behaviour code of "3" (primary) and "6" (secondary) as defined by the International Classification of Disease – Oncology (ICD-O).

The Cancer incidence registered by the PBCR, Shillong during 2014-19 (up to November 2019) and some of the common types of cancer in Meghalaya are given in the table below:

Table 6.12: Incidence of common types of cancer in Meghalaya during 2014-19

Year	Common types of cancer in Meghalaya							Total
	Oesophagus	Oral[33]	Hypopharynx	Stomach	Cervical	Breast	Other	
2014	360	195	94	83	48	37	431	**1248**
2015	399	253	91	75	49	47	503	**1417**
2016	431	227	104	104	52	45	529	**1492**
2017	434	235	114	91	48	50	480	**1452**
2018	501	214	107	90	69	69	571	**1621**
2019	354	166	88	65	35	23	301	**1032**
Total	**2479**	**1290**	**598**	**508**	**301**	**271**	**2815**	**8262**
Per cent	***30***	***16***	***7***	***6***	***4***	***3***	***34***	

Source: Records of the PBCR, Shillong.

It can be seen from the Table above that:

- the number of cancer incidences in the State has increased by 30 *per cent* from 1248 in 2014 to 1621 in 2018;

[32] Viz. (i) East Khasi Hills; (ii) West Khasi Hills; (iii) Ri-Bhoi and (iv) Jaintia Hills district.

[33] Oral cancer includes (i) Lip; (ii) Mouth; (iii) Salivary gland; (iv) Tonsil and (v) Oropharynx cancers.

- Oesophagus/Oesophageal cancer with 30 *per cent* followed by Oral (16 *per cent*) and Hypopharynx (seven *per cent*) all associated with the use of Tobacco also known as Tobacco Related Cancer (TRC), were the three most common cancers in the State.

During the year from 2014 to 2019, out of the total deaths due to cancer, East Khasi Hills district with 64 *per cent* deaths is leading in cancer deaths, followed by Jaintia Hills district (14 *per cent*); Ri-Bhoi district (13 *per cent*) and West Khasi Hills district (nine *per cent*).

6.2.2 Assessment and conduct of population based screening of common cancers

As per NPCDCS guidelines, assessment of target population (aged 30 years and above and pregnant women) was to be conducted. After assessment, screening of target population was to be conducted either through opportunistic and/or camp approach at different levels of health facilities. Working towards this aim, in every district, a mix of PHCs and sub centres/ Urban PHCs/ Urban CHCs were to be selected so that the population coverage envisaged annually over the three-year time frame is achieved.

In this regard, Audit observed the following:

- None of the test-checked districts achieved the target for assessment of population (30 years and above) till date (January 2020). The target *vis-à-vis* achievement in the test-checked districts and reasons thereof were as under:

Table No. 6.13: Population based screening of Common Cancers

Year	Targeted coverage	Achievement and reasons for shortfall			
		EKH district	Ri-Bhoi district	WJH district	WGH district
1st year	50 *per cent*	10% (2019-20) Screening started from January 2019	20% most of the HWCs recently started CBAC assessment	49 % Reason not stated.	62% implementation started from 2018. Reason not stated
2nd year	65 *per cent* (1st year +15%)				
3rd year	80 *per cent* (2nd year +15%)				

Source: Records of DM&HOs of test-checked districts.

- As per Operational Guidelines for Screening of common Non-Communicable Diseases (NCDs), screening for all cancers is to be provided as close to the home as possible by competently trained personnel with well-equipped facilities and ensuring privacy.

  Audit observed that adequate number of Sub-centres/ PHCs/ Urban CHCs were not selected for screening of common NCDs in the test-checked districts as tabulated below:

Table 6.14: Sub-centres/ PHCs/ Urban CHCs not selected for NCDs in test-checked districts

Facility centre	Total No.	No. selected for screening	No. not selected for screening
Sub-centre	217	103	114 (53%)
PHCs	55	49	6 (11%)
CHCs	18	2	16 (88%)

Source: Records of DM&HOs of test-checked districts.

Due to fewer number of screening centres, the target set for screening for common cancers are yet to be achieved by any of the test-checked districts.

6.2.3 Provision of confirmatory test services

As per the programme guidelines, to provide confirmatory tests for those screened and suspected of abnormal test results, all CHCs in the State were to be strengthened.

Audit observed that three out of four test-checked districts did not provide confirmatory tests facility in the CHCs, resulting in referrals to DHs for confirmation. The DM&HOs of the test-checked districts (except East Khasi Hills district) accepted that all the CHCs were not strengthened to enable them to conduct confirmatory tests.

6.2.4 Delay in completion of Cancer hospital at Shillong

For establishment of a comprehensive and modern Cancer care facilities in the State of Meghalaya, Department of Atomic Energy (DAE), GoI sanctioned (December 2008) ₹ 26.16 crore for Cancer Treatment Centre at Shillong CH.

As per the MoU signed between GoI and GoM, the project was scheduled to be completed by 31 March 2012[34] and the State Government was responsible to (i) provide space and necessary infrastructure for the project; (ii) provide necessary manpower to run the facility efficiently; (iii) meet all recurring expenditures and the project is to be implemented through the State Cancer Society.

Scrutiny of records of the State Cancer Society, Meghalaya showed that the Cancer hospital at Shillong was far from being completed as of January 2020.

Reasons for delay in commencement of the work and delays in completion of the project were attributed to (i) delay in vacating the occupants from the site as well as in dismantling the old building at the site identified for construction of the cancer hospital building. The old building housed nursing students and staff and (ii) delay in shifting of electric pole, *etc*. The total expenditure resultantly incurred was only ₹ 9.77 crore (UCs for the amount furnished to GoI) out of ₹ 19.84 crore[35] received by the State.

Due to non-completion of the main cancer hospital building, the required equipment was also not purchased and the Cancer Hospital was non-functional till date (February 2020) despite availability of funds. Thus, the objective of having comprehensive and modern cancer care facilities in the State of Meghalaya has not been achieved and cancer patients are required to be referred to North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences, Shillong.

The inordinate delay in completion of the cancer hospital in the State which has one of the highest incidence of cancer cases, reflects serious negligence on the part of the implementing authority, *i.e.* the State Cancer Society, for which the State Government needs to fix responsibility and take appropriate action against those responsible for the delay.

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[34] Which was extended up 31.03.2013 on 29th March 2012.

[35] ₹ 10.47 crore (February & March 2009) and ₹ 9.37 crore (August 2019).

Conclusion

The number of cancer incidences in the State had increased by 30 *per cent* from 1248 in 2014 to 1621 in 2018; with Oesophagus/ Oesophageal cancer with 30 *per cent* followed by Oral (16 *per cent*) and Hypopharynx (seven *per cent*) all associated with the use of Tobacco also known as Tobacco Related Cancer (TRC).

During the period 2014 - 2019, out of the total deaths due to cancer, East Khasi Hills district with 64 *per cent* deaths is leading in cancer deaths, followed by Jaintia Hills district (14 *per cent*); Ri-Bhoi district (13 *per cent*) and West Khasi Hills district (nine *per cent*).

The Department had not provided adequate number of SCs/ PHCs/UPHCs/CHCs for screening of common NCDs in the population for early detection and treatment of cancer.

For establishment of a comprehensive and modern Cancer care facilities in the State, Department of Atomic Energy (DAE), Government of India (GoI), had sanctioned (December 2008) ₹ 26.16 crore for Cancer Treatment Centre at Civil Hospital, Shillong. However, due to the serious negligence of the State Cancer Society, the objective of having comprehensive and modern cancer care facilities in the State of Meghalaya could not be achieved despite availability of funds.

Recommendations

i. *Screening centres for early detection and treatment of cancer may be provided adequately in the CHCs, PHCs and SCs to ensure that target set for coverage of population based screening of common cancer is achieved and all CHCs are strengthened to enable them to conduct conformity test.*

ii. *The Commissioner & Secretary of Health and Family Welfare Department cum Chairman of the State Cancer Society may ensure early completion of the Cancer Hospital at the Shillong CH, funded by GoI. They also need to make an enquiry and fix responsibility on those responsible for the delay in completion of the facility.*

Chapter - 7 Evaluation of In-Patient Services through Outcome Indicators

This chapter presents an assessment of the IPD services provided during 2014-19 in the test-checked DHs based on certain Outcome Indicators (OIs) prescribed in IPHS guidelines, *viz*., Bed Occupancy Rate (BOR), Leave Against Medical Advice (LAMA) Rate, Absconding Rate and Referral Out Rate (ROR).

Table 7.1 gives the categorisation and methodology of evaluating these OIs:

Table 7.1: Calculation of quality indicators

Type	QUALITY Indicator	Numerator	Denominator
Productivity of hospital	BOR (in *per cent*)	Total patient bed days X 100	Total no. of functional beds X No. of days in a month
Service quality of hospital	LAMA (Rate/1000)	Total no. of LAMA X 1000	Total no. of admissions
	Absconding (Rate/1000)	Total no. of Absconding cases X 1000	Total no. of admissions
Efficiency	ROR (in *per cent*)	Total no. of cases referred to higher facility	Total no. of admissions

Source: IPHS.

7.1 Bed Occupancy Rate

The Bed Occupancy Rate (BOR) is the average occupancy of hospital beds within a given year. It is an indicator of the productivity of the hospital services and is a measure of verifying whether the available infrastructure and processes are adequate for delivery of health services. As per IPHS, the BOR of hospitals should be at least 80 *per cent*. The BOR of the test-check DHs during 2014-19 is given below:

Table 7.2: BOR of the test-checked DHs

Sl. No.	Hospital	BOR (%)
1	Shillong CH	64
2	Nongpoh CH	41
3	Jowai CH	**82**
4	Tura MCH	66

Source: Records of test-checked DHs. *Benchmark: 80%*

Thus, the BOR of Jowai CH with 82 *per cent* was slightly higher than the IPHS benchmark (80 *per cent*). The low BOR of the three test-checked DHs *viz.* (i) Shillong CH (64 *per cent*), (ii) Nongpoh CH (41 *per cent*) and (iii) Tura MCH (66 *per cent*) indicates that the utilisation of beds at these hospitals is low.

However, the BOR also indicates a higher turnover of patients due to the nature of the services being provided by respective DHs. *e.g.* Shillong CH has specialised centres for oncology and dialysis where patients may take a longer time to recover than normal patients and therefore may occupy the beds for comparatively longer periods. Meanwhile, low BOR at Nongpoh CH is attributable to non-availability of IPD services and consequential referrals as discussed in **paragraph 4.2.1**.

7.2 Referred out Rate

As per IPHS norms, referral services to higher centres denote that the facilities for treatments were not available in the hospitals. Table 7.3 gives the Referred Out Rate (ROR)[36] in the four test-checked hospitals during 2014-19:

Table 7.3: ROR of the test-checked DHs

Sl. No.	Hospital	ROR (of 1000)
1	Shillong CH	17
2	Nongpoh CH	**166**
3	Jowai CH	31
4	Tura MCH	16

Source: Records of test-checked DHs. weighted average: 43.

Thus, the Nongpoh CH with ROR of 166 out of 1000 patients was the highest of all the test-checked DHs, indicating that health care facilities were not adequate in this hospital. This has been brought out by audit also in preceding chapters.

7.3 Leave Against Medical Advice and Absconding Rate in DHs

Leaving the hospital against the physician's advice is known as Leave Against Medical Advice (LAMA) and Absconding refers to patients who leave the hospital without informing the hospital authorities. Patients who leave the hospital without physician permission before completing course of treatment may cause harm to themselves and others as it may expose the patient to risk of an inadequately treated medical problem and result in the need for readmission. We evaluated LAMA Rate (per 1000) and

[36] ROR= (No. of Refer out x 1000) ÷ No. of New admission.

Absconding (Abs) rate per 1000 in the test-checked DHs during 2014-19 which is given in the following table:

Table 7.4: LAMA and Abs. rate of the test-checked DHs

Sl. No.	DH	LAMA rate (of 1000)	Absconding Rate (of 1000)
1	Shillong CH	**31**	**20**
2	Nongpoh CH	14	1
3	Jowai CH	**27**	2
4	Tura MCH	18	3

Source: Records of test-checked DHs. *Weighted average for LAMA: 26 and Absconding: 9.*

In Shillong CH, both LAMA & Abs rate was very high and in Jowai the LAMA rate was also high. This indicated that the hospital authorities need to impress upon the patients to avail of complete medical treatment and then get discharged.

7.4 Patient Satisfaction Score

Patient satisfaction score (PSS) is an indicator of patient satisfaction and acts as an important monitoring and feedback mechanism for the IPD. Patient satisfaction survey was not conducted by Shillong CH, Nongpoh CH and Jowai CH during the period 2014-19. Although, Tura MCH stated to have conducted, but relevant records like the survey report, recommendations (if any) and follow up action taken, were not furnished to Audit. Thus, while three DHs which did not conduct any Survey missed out on an opportunity for identifying gaps based on feedback by patients and developing an effective action plan for quality improvement in the hospitals, Tura MCH despite conducting PSS did not prepare action points based on the survey results.

To gauge the satisfaction level of patients, Audit conducted a Patient Satisfaction Survey, based on a pre-defined questionnaire. Results of the Survey has been included at appropriate places.

7.5 Outcomes *vis-à-vis* Availability of Resources

Table 7.5 shows the relative performance of the test-checked DHs on various outcome indicators worked out by audit and the corresponding availability of resources:

Table 7.5: Outcomes *vis-à-vis* availability of resources in District Hospitals

Hospital	Outcome Indicators				Availability of resources (per cent)		
	BOR (%)	ROR per 1000	LAMA per 1000	Abs. Rate per 1000	Doctors	Nurses	Essential drugs
Shillong CH	64	17	31	20	91	79	37
Nongpoh CH	41	166	14	1	71	87	37
Jowai CH	82	31	27	2	78	76	23
Tura MCH	66	16	18	3	86	63	33
Benchmark[37]	*80-100%*	*43*	*26*	*9*	*100%*	*100%*	*100%*

Source: Records of test-checked DH.

As seen from the Table above, against selected outcome indicators, the performance of Shillong CH and Nongpoh CH, in particular, were below par. Nongpoh CH had low bed occupancy and an alarmingly high referral out rate of 166 *per 1000*, indicating that this hospital had struggled to provide quality services.

The LAMA & Absconding Rate was high in Shillong CH at 31 and 20 *per 1000* respectively.

Recommendations

i. *The Government needs to adopt an integrated approach, allocate resources in ways which are consistent with patient priorities and needs to improve the monitoring and functioning of the district hospitals towards facilitating a significant change in health outcomes.*

[37] Benchmarks: BOR – as per IPHS, Weighted average for rest of the outcome indicators, 100 *per cent* (sanctioned strength) for availability of doctors, IPHS norms for nurses and for essential drugs, it was based on stock position (on the date of JPV) against 60 drugs common to both in the SEDL and drugs list of NHM Assessor's Guidebook.

ii. 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. The high LAMA and Absconding rates in test-checked DHs may also be addressed by improving counselling services.

(SHEFALI S. ANDALEEB)
Accountant General (Audit), Meghalaya

Shillong
The 08 December 2020

Countersigned

(GIRISH CHANDRA MURMU)
Comptroller and Auditor General of India

New Delhi
The 16 December 2020

APPENDICES

Appendix-I

List of essential drugs sampled for Audit

(Reference: Paragraph 3.4.2)

Sl. No.	Name of Medicines	Stock position on the day of JPV			
		Shillong CH	Tura MCH	Jowai CH	Nongpoh CH
1	Tab Paracetamol 500 mg	130180 tabs	14100	5000 tabs	8950 tabs
2	Tab Diclofenac sod 50mg/100mg	Stock out w.e.f. 01.06.2019 (7months)	Stock out (date not recorded)	Stock out w.e.f. 07.05.2018 (20months)	Stock out w.e.f. 02.12.2018 (13months)
3	Tab Piroxicam 20mg	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
4	Ibuprofen 400 mg/200mg/100mg	Stock out w.e.f. 01.07.2019 (6months)	15900	Stock out w.e.f. 23.04.2019 (8months)	4600/10400
5	Inj Paracetamol	3650	1250	Stock out w.e.f. 18.07.2019 (5months)	70
6	Inj Diclofenac sodium	430	1950	7000	2500
7	Inj. Drotavarine	Not Supplied during 2014-19	Not Supplied during 2014-20	Not Supplied during 2014-19	Not Supplied during 2014-19
8	Tab Eythromycin 250mg	Not Supplied during 2014-19	Stock out (date not recorded)	Not Supplied during 2014-19	Not Supplied during 2014-19
9	Tab Norfloxacin 400mg	5900	1000	Stock out w.e.f. 01.08.2019 (5months)	Stock out w.e.f. 10.10.2017 (27months)
10	Tab Cefixime + Azythromician	15880	14900	20900	4900
11	Tab Ofloxacin 400 mg/200mg	Stock out w.e.f. 01.05.2019 (8months)	Stock out (date not recorded)	Stock out w.e.f. 18.04.2019 (8months)	800
12	Tab Furazolidone	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	stock out w.e.f. 10.12.2018 (13months)
13	Tab Mebendazole 100mg/Albendazole	2590	Stock out (date not recorded)	Stock out w.e.f. 21.05.2019 (7months)	Not Supplied during 2014-19
14	Tab Amocyclav 375mg, 625mg	2500	Stock out (date not recorded)	Not Supplied during 2014-19	Not Supplied during 2014-19
15	Tab Azythromician 500 mg	10299	4760	Stock out w.e.f. 27.09.2019 (3months)	Not Supplied during 2014-19
16	Tab Fluconazole 150mg	Stock out w.e.f. 01.08.2019 (5months)	Stock out (date not recorded)	Stock out w.e.f. 28.01.2019 (11months)	Not Supplied during 2014-19
17	Cap Ampicilin	Not Supplied during 2014-19	Stock out (date not recorded)	Not Supplied during 2014-19	Not Supplied during 2014-19
18	Cap Amoxycillin 500mg (plain)	36280	Not Supplied during 2014-19	Stock out w.e.f. 12.04.2019 (9months)	Not Supplied during 2014-19
19	Cap Amoxycilline 250mg, 500mg	Not Supplied during 2014-19	10500	Stock out w.e.f. 13.02.2018 (23months)	31300

Sl. No.	Name of Medicines	Stock position on the day of JPV			
		Shillong CH	**Tura MCH**	**Jowai CH**	**Nongpoh CH**
20	Syrup Ampicillin 125mg/5 ml. 60 ml	Stock out w.e.f. 01.08.2019 (5months)	Stock out (date not recorded)	Not Supplied during 2014-19	Not Supplied during 2014-19
21	Syp Mebendazole/Albendazole	Stock out w.e.f. 01.03.2019 (10months)	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
22	Syp Ampicillin 125mg/5ml.60ml	Stock out w.e.f. 01.08.2019 (5months)	Stock out (date not recorded)	Not Supplied during 2014-19	Not Supplied during 2014-19
23	Inj Ampicillin 500 mg	Not Supplied during 2014-19	4050	Not Supplied during 2014-19	Stock out w.e.f. 4.12.2018 (13months)
24	Inj. Metronidazole 100 ml	Stock out w.e.f. 01.08.2019 (5months)	300	Stock out w.e.f. 18.11.2018 (13months)	Stock out w.e.f. 10.09.2019 (4months)
25	Inj Cefotaxime 500mg/1gm	1900/7050	Stock out (date not recorded)	Stock out w.e.f. 20.07.2017 (29months)	5650
26	Inj Ceftriaxone 1gm/500mg	8150/nil	4800	3000/30000	5585
27	Inj. Quinine	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
28	Inj. Benzathine pencillin 12 lac	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
29	Inj. Dextrose 5%, 500ml bottle	1800	250	1850	1624
30	Inj Ringer Lactate 500ml	Stock out w.e.f. 01.12.2019 (1month)	100	11250	1612
31	Inj Rantidine 2ml	7400	960	4000	6250
32	Inj Metoclopramide	7580	Stock out (date not recorded)	65000	1350
33	Ciprofloxacin eye/ear drop	6870	Stock out (date not recorded)	Stock out w.e.f. 27.05.2019 (7months)	300
34	Gentamycin eye/ear drop	1755	3530	Stock out w.e.f. 27.05.2019 (7months)	400
35	Inj. Pheniramine maleate	Not Supplied during 2014-19	Stock out (date not recorded)	Not Supplied during 2014-19	Not Supplied during 2014-19
36	Inj Adrenaline	Not Supplied during 2014-19	1400	2800	Not Supplied during 2014-19
37	Tab Cetrizine	Stock out w.e.f. 01.09.2019 (4months)	800	29500	Stock out w.e.f. 14.10.2019 (3months)
38	Tab Haloperidol	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
39	Tab Phenobarbitone 30mg, 60mg	Not Supplied during 2014-19	Not Supplied during 2014-19	3000	Not Supplied during 2014-19
40	Tab Risperidone 2mg	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
41	Tab Imipramine 75mg	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
42	Tab Lorazepam 2mg	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
43	Tab Olanzapine 5mg	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19

Sl. No.	Name of Medicines	Stock position on the day of JPV			
		Shillong CH	**Tura MCH**	**Jowai CH**	**Nongpoh CH**
44	Tab Alprazolam 0.25mg	2280	Not Supplied during 2014-19	Not Supplied during 2014-19	200
45	Cap Fluoxetine 20 mg	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
46	Syp Paracetamol 125 mg	275	600	Stock out w.e.f. 11.11.2019 (1months)	600
47	Inj. Chlopromazine 25mg, 100mg	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
48	Inj Promethazine HCL (Phenergan)	1800	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
49	Inj. Pethidine	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
50	Inj Diazepam 5mg/ml	1112	Not Supplied during 2014-19	2000	350
51	Inj. Haloperidol	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
52	Inj. Promethazine 50 mg	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	2500
53	Inj. Lignocaine HCL 2%, 4%	Not Supplied during 2014-19	Stock out (date not recorded)	Stock out w.e.f. 13.12.2018 (13months)	Not Supplied during 2014-19
54	Clotrimazple lotion	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
55	Inj. Methyl Ergometrine 02mg/amp	Not Supplied during 2014-19	Not Supplied during 2014-19	1200	Not Supplied during 2014-19
56	Tab Betamethasone	Not Supplied during 2014-19	Stock out (date not recorded)	Not Supplied during 2014-19	Not Supplied during 2014-19
57	Inj Dexamethasone 2mg ml vial	7650	Not Supplied during 2014-19	1200	2250
58	Crozinc Syp, B. Complex	1140	Not Supplied during 2014-19	Not Supplied during 2014-19	Not Supplied during 2014-19
59	Syp Vitamin B Complex (Zincosone Syp)	Stock out w.e.f. 01.11.2019 (2month)	700	Stock out w.e.f. 16.01.2019 (12months)	2255
60	Vit k, Inj. Vit K3 (Menadione)	Not Supplied during 2014-19	3500	Stock out w.e.f. 05.11.2018 (14months)	400 ampl without Vit K3

Appendix-II

Availability of Laboratory services in the test-checked DHs

(Reference: Paragraph 4.7.2.2)

Sl. No.	Speciality	Total tests prescribed in the IPHS	No. of Lab. services available			
			Shillong CH	Nongpoh CH	Tura MCH	Jowai CH
I	**Clinical Pathology**					
	a. Hematology	**21**	15	13	15	13
	b. Urine Analysis	**1**	1	1	1	1
	c. Stool Analysis	**4**	2	2	1	1
	d. Semen Analysis	**1**	1	0	0	0
	e. CSF Analysis	**1**	1	0	0	1
	f. Aspirated fluids	**1**	1	0	0	0
II	**Pathology**					
	a. PAP smear	**1**	1	0	0	0
	b. Sputum	**1**	0	0	0	1
	c. Haematology	**5**	3	0	1	0
	d. Histopathology	**1**	0	0	0	0
III	**Microbiology**	**7**	3	3	0	1
IV	**Serology**	**7**	4	4	5	2
V	**Blood Bank**	**1**	0	0	0	0
VI	**Biochemistry**	**21**	13	10	4	8
VII	**Cardiac Investigations**	**3**	1	0	1	1
VIII	**Ophthalmology**	**3**	3	2	0	2
IX	**ENT**	**2**	2	0	0	2
X	**Radiology**	**7**	5	3	2	1
XI	**Endoscopy**	**8**	5	0	0	0
XII	**Respiratory**	**1**	0	0	0	0
	Total (%)	**97**	**61 (63)**	**38 (39)**	**30 (31)**	**34 (35)**

(Sources: information furnished by test-checked DHs)

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