सत्यमेव जयते

Report of the Comptroller and Auditor General of India on Performance Audit of Select District Hospitals in Nagaland

for the year ended 31 March 2019

लोकहितार्थ सत्यनिष्ठा
Dedicated to Truth in Public Interest

GOVERNMENT OF NAGALAND

Report No. 3 of 2020

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Comptroller and Auditor General of India
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Preface

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

District Hospitals are set up for providing a plethora of services for preventive, diagnostic and curative healthcare to the people in the districts, at an acceptable level of quality. The focus of audit is to assess the role of 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

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About the Report

The Report is about the Results of 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 Nagaland. We covered the period from 2014-15 to 2018-19. The audit examination included records maintained in the office of Principal Director of Health & Family Welfare, Mission Director of National Health Mission (NHM), records of District Medical Officers (DMOs), Medical Superintendents (MS) of selected District Hospitals, Medical officer of one CHC and one PHC.

What has been covered in this audit?

In this Performance Audit, we have focused on the 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 District Hospitals 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 & PHC). We have adopted Indian Public Health Standard (IPHS) prescribed by the Government of India and adopted by the Government of Nagaland 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 and Fund management

State funding

The budget allotment and expenditure of the Health and Family Welfare Department against the overall State Budget during the five-year period 2014-19 ranged from ₹ 521.09 crore (4 *per cent)* in 2014-15 to ₹ 797.48 crore (3.90 *per cent)* in 2018-19, 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. The expenditure on health ranged from ₹ 418.09 crore (4.13 *per cent*) to ₹ 631.42 crore (4.17 *per cent*) of the total State Budget during the period. The Department did not utilise the allocated funds in five years period 2014-19 with savings ranging from ₹ 103 crore (19.77 *per cent*) in 2014-15 to ₹ 166.07 crore (20.82 *per cent*) in 2018-19. Due to inadequate spending under the State budget, the secondary healthcare facilities in the State suffered inadequate physical infrastructure, shortage of drugs, equipment, specialist services, and other diagnostic services.

Out of the total expenditure of ₹ 2649.93 crore incurred on health during 2014-19, revenue expenditure was ₹ 2493.73 crore (94.10 *per cent*) and the capital expenditure was ₹ 156.20 crore (5.90 *per cent*). The Department spent a mere 0.58 *per cent* of the total revenue expenditure on drugs/ medicines. Due to decline in revenue expenditure on drugs and medicines, there was shortage of drugs in health units across the State. Availability of drugs in the sub-centres varied from 5 *per cent* to 73 *per cent* with an average of 33 *per cent*. In the case of PHCs, availability of drugs was 36 *per cent*. In the case of CHCs, availability of drugs was very poor as against 225 recommended drugs, only 39 *per cent* drugs were available across the State.

We therefore recommend that the department could further shore up its overall spending on healthcare and particularly increase its spending on drugs and medicines and make them available across all health facilities.

(*Paragraphs 2.2, 2.2.1, 2.2.2*)

Unspent NHM Funds

Against available funds of ₹ 564 crore (GoI/GoN /OB/interest) during the period 2014-19, the NHM State Society utilised ₹ 473.26 crore of the funds, with unspent balances ranging from 43 to 68 *per cent* of the available funds during the period. In three important NHM Programmes (National Oral Health Programme, National Programme for Health Care of Elderly and Non-Communicable Diseases), the unspent balances ranged from 50 to 99 *per cent*. This indicated that the intended beneficiaries were deprived of the benefits of these programmes.

(Paragraph 2.4)

Recommendations

- *The State Government may enhance its budget provision and expenditure on healthcare services as required under NHP. The spending may particularly be enhanced to meet deficiencies in infrastructure like Trauma Centres, for providing adequate supply of medicine and equipment across health facilities and for enhancing human resources in the secondary healthcare facilities in the State.*
- *The declining trend in utilisation of funds under Capital budget is a matter of concern, which has adversely affected provision of adequate infrastructure in health facilities. Apart from increasing the allocation under capital head, the utilisation requires close monitoring to ensure that the allocated funds are utilised for the intended purpose.*
- *The State Health Society may take appropriate action to optimally utilise the available funds under various NHM programmes.*

Essential Resources Management

Shortage of Doctors, Nurses and Paramedical Staff

Human resources are one of health system inputs by which outcome of a health facility is assessed. Engagement of adequate, appropriate human resources with reference to number of beds is utmost important to obtain desired results/outcome out of a health facility. Audit scrutiny revealed that there was persistent shortage of doctors in three test checked districts

hospitals of Phek, Wokha and Tuensang in important cadres of services of Medical Officers, Staff Nurse and Paramedical Staff. Shortage of doctors in DH Phek was 50 *per cent* against norms, whereas in DH Wokha, the shortage of doctors was 54 *per cent* during 2014-19. Number of doctors in DH Tuensang slightly improved from 12 (2014-15) to 14 (2018-19). In the case of DH Kohima, position of number of doctors had improved from 44 to 62 (40.91 *per cent*) during 2014-19.

(Paragraph 3.2)

Recommendations

The State Government needs to address:

- *Shortage of human resources in DHs on priority basis.*
- *The State Government may incentivise doctors to serve in the remote and hilly areas of the State.*

Availability of physical infrastructure

The State had 11 District Hospitals (DHs), 35 Community Health Centres (CHCs), 142 Primary Health Centres (PHCs) and 583 Sub-Centres (SCs). Two Medical Colleges have been approved by GoI for the State (Kohima and Mon) and they were in process of being set up. Three DHs were functioning with more than 100 sanctioned bed strength (out of 11 DHs in the State), whereas six DHs (Zunheboto, Kiphire, Wokha, Phek, Longleng and Peren) were functioning with less than 100 sanctioned bed strength. This indicated that six districts were treated as sub-district/sub-divisional district hospitals and facilities expected to have been available for the people were not present. Further, four DHs (Kohima, Mon, Phek and Peren) were functioning with less than sanctioned bed strength. The State had shortage of 281 Sub-Centres and four Community Health Centres in the State, which are crucial for last mile delivery of health services to the population. The Department had neither utilized the available funds nor increased its capital spending to improve the availability of physical infrastructure of health facilities in the State.

(Paragraphs 3.3.1 and 3.3.2)

Blood bank & Blood Storage Units

Out of four test checked DHs, Blood Bank was available only in DH Kohima. Blood Storage Unit at DHs Wokha, Phek and Tuensang were non-functional resulting in avoidable hardship and risk to the patients by being referred to blood banks in other DHs in the State.

(Paragraph 3.3.3)

Recommendations

- *State Government may ensure increasing the bed strength in deficient DHs taking into account population served and set up sufficient Sub-Centres and Community Health Centres to impart proximate health care services.*
- *State Government may ensure availability of Blood Banks in all DHs as per norms and expedite installation of available blood bank equipment.*
- *The Department may take steps to make DHs functional with Blood Banks.*

Procurement of Drugs with less shelf life

Terms & conditions for supply of Drugs under NHM & State Budget stipulates that all the supplied drugs should have a minimum life of 18 months. In drug procurements, it was observed that in 13 out of 20 supply orders placed by the Department in 2017-19, 123 drugs supplied were with less than stipulated shelf life of 18 months.

(Paragraph 3.4.2)

Equipment

There was shortage of diagnostic equipment in all the test checked DHs. The availability of essential hospital equipment in the three test checked DHs (Tuensang, Phek, Wokha) ranged between 5 to 16 *per cent* and the availability of equipment in DH Kohima was only 19 *per cent*, though it is a multispecialty hospital and the State's only referral hospital. There was shortage of critical equipment like X-ray machines and ventilators. This would severely impact effective medical diagnosis of patients. There were 75 different Medical equipment lying non-functional in the test checked DHs for want of maintenance of equipment, thereby affecting service delivery.

(Paragraph 3.5)

Recommendations

- *The Department may ensure that the procurement of drugs is based on realistic assessment of requirements of health units and ensure that Free Drugs Service Initiative is actually implemented in the State's Health Facilities.*
- *Procurement of drugs, consumables etc. should be made in a timely manner to avoid stock of drugs with reduced shelf life.*
- *The State Government may make it mandatory for suppliers to furnish quality report for medicines so as to ensure quality drugs to patients besides setting up of a Drug Testing Laboratory.*
- *State Government may ensure the availability of full range of essential equipment in every DH, particularly in view of the increasing reliance on diagnostics for treatment of patients.*
- *The Department may ensure proper maintenance of equipment through Annual Maintenance Contract to reduce the breakdown time of critical diagnostic equipment.*

Delivery of Healthcare Services

Out-Patient Department (OPD)

Computer based registration is followed in DH Kohima and the manual registration system is followed in remaining three DHs (Phek, Wokha and Tuensang). OPD registration showed an increasing trend in DH Kohima and DH Phek, whereas DH Tuensang showed a decreasing trend. DH Wokha showed a mixed trend during the last three years (2016-17 to 2018-19). Average monthly OPD registration was highest in DH Kohima (9941) followed by DH Wokha.

In the case of CHC Viswema, number of patients utilising the OPD facilities showed decreasing trend. In the year 2014-15, number of patients utilising the services of OPD was 2924, whereas

in 2018-19, it decreased to 2514 (14 *per cent* less – with reference to 2014-15). In the case of PHC Botsa, patients utilising OPD services had increased from 2093 (2014-15) to 3209 (2018-19) which was 53.32 *per cent* increase as compared to 2014-15.

Most of the OPD services provided in NHM Assessor's Guidebook were not provided in the test checked DHs particularly in DH Wokha, DH Phek and DH Tuensang.

(Paragraphs 4.1.1, 4.1.3 and 4.1.4)

Recommendations

- *The Department may ramp up the OPD Services keeping in view the increasing demand for services. They may introduce computer based registration system in OPD/IPD in all DHs.*
- *State Government may ensure availability of essential services in the OPDs in all DHs.*

Inpatient Services

There were considerable gaps in availability of inpatient services in test checked DHs with reference to IPHS norms. The facility of Burn ward, Psychiatry and Accident & Trauma ward were not available in any of the test checked DHs. Ophthalmology, Physiotherapy and Dialysis services were not available in three DHs (Wokha, Phek and Tuensang) while there is no facility for 24x7 nursing in Tuensang DH and Wokha. Shortage of essential IP Services like Burns, Psychiatry, Accident & Trauma in DH Kohima necessitated that patients to be either referred out of State or to private hospitals, entailing inconvenience and additional financial burden on the patients.

(Paragraph 4.2.1)

Diagnostic Services in emergencies

Assessors Guide Book for Quality Assurance in District Hospital (2013) requires that 24x7 emergency lab services are available for selected tests of Haematology, Biochemistry, Serology etc. and Radiology Services. In all the test checked DHs, laboratory and radiological services generally remain closed after OPD hours. In DH Kohima, neither the duty roster of Lab Technicians of emergency duty nor the monitoring report of service review was made available to audit for verification. In other three test checked DHs also, there was no record of laboratory or radiological tests being carried out in emergency cases nor were duty rosters of LTs and X-Ray technician, maintained in the DHs.

(Paragraph 4.2.6.3)

Calibration of Equipment

Reliability of any equipment is to be ensured through periodic calibrations and Annual third party Audit by NABL accredited laboratories. Audit observed that test checked DHs did not maintain the status of calibration of equipment. Records relating to Annual third party Audit by NABL accredited laboratory was also not maintained. In absence of vital records of calibration, there was no reasonable assurance on accuracy of medical equipment and their ability to provide correct overall output/test results.

(Paragraph 4.2.6.5)

Laboratory Services

All the laboratory tests required to be provided as per IPHS norms were not provided by the test checked DHs (Kohima, Phek, Wokha & Tuensang) and it varied from 62.88 *per cent* to 82.24 *per cent*.

(Paragraph 4.2.7)

Operation Theatre Services

Major and minor operations were carried out in all the test checked DHs. Minor Operations were only carried out in CHC Viswema and PHC Botsa. Number of major operations carried out in DH Kohima was much higher than the number carried out in other test checked DHs, being a referral and better equipped hospital.

(Paragraph 4.2.9)

Fire safety norms

National Building Code of India 2016, Part 4, Fire and Life Safety required that fire extinguishers must be installed in every hospital, so that the safety of the patients/attendants/ visitors and the hospital staff may be ensured in case of any fire in the hospital premises. Further, Assessor's Guidebook for Quality Assurance in District Hospitals, 2013 stipulates that hospital should have a plan for prevention of fire. Also, the facility should have a system of periodic training of staff and regular conduct of mock drills for fire and other disaster situation.

None of the test checked DH had a certificate of fire safety from the Fire Department. There was no plan for prevention of fire in any of the test checked hospitals. System for auto detection of fire was also absent in all the test checked DHs. Evacuation area in the case of fire is to be marked with illuminated exit sign. This is not found in any of the DHs. Satisfactory supply of water with dedicated water tank for firefighting purpose was not constructed in any of DHs test checked.

The number of fire extinguishers were found to be insufficient in all the DHs. DH Wokha had not complied with findings of the fire safety inspection done.

Absence of mock drills, shortage of fire extinguishers, illuminated exit sign, dedicated water tank etc. pose a risk for the evacuation of patients in case of an emergency due to fire or natural calamity.

(Paragraph 4.2.12)

Recommendations

- *The OPD and IPD Services provided in DHs may be reviewed to improve the number of services and facilities as per norms.*
- *User charges for diagnostic services in DHs may be notified and streamlined for all DHs in the State.*
- *Availability of equipment as per the IPHS norms may be ensured for quality services.*
- *Calibration of diagnostic equipment may be implemented for reliable diagnostics.*

- *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. Fire safety audit be carried out of all health facilities in the State, including the Special New Born Care Units (SNCU) in DHs.*

Adequacy of Support Services

Storage of Drugs

To maintain the efficacy of the procured drugs before issue to patients, it should be stored as per the labelling conditions of the drugs. It was observed that in none of the DHs, prescribed protocol for storage of drugs were adhered. None of the OPDs/IPDs maintained inward and outward records of drugs dispensed. Drug testing for quality checking was absent in the Department/DHs.

(Paragraphs 3.4.3, 5.1 and 5.2)

Infection Control

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

Infection control measures were not adequately implemented in test checked DHs. Audit verification of records revealed that microbiological sampling for surface was done in two DHs (Kohima & Wokha) and the selected CHC. NHAK Kohima had carried out air sampling in 2020, but the other test checked DHs had not done air sampling inside the hospitals during the period of audit.

(Paragraph 5.4)

Segregation and disposal of Bio-Medical Waste

The BMW Rules inter alia stipulate the procedures for collection, handling, transportation, disposal and monitoring of the Bio-medical (BM) waste with clear roles for waste generators and Common Bio-Medical Waste Treatment Facilitator (CBMWTF). All the four hospitals, CHC and PHC test checked segregated BM waste at the point of generation in colour coded bins. DH Kohima engaged Kohima Municipal Council (KMC) to collect the BM waste from the Hospital site for disposal. Segregation of BM waste was done by the wards/departments of hospital as per provisions of the BMW rules. The BM waste was collected from the wards/departments and dumped at a common waste pit of the hospital without segregation or without colour coded bags (black dustbin bags). This defeated the very purpose of segregation of BM waste at the point of generation. Test checked hospitals except for DH Wokha had not established Effluent Treatment Plants (ETPs) for pre-treatment of the liquid chemical and bio-medical waste, resulting in draining of the waste in public drainage

(Paragraph 5.6)

Ambulance Services

There was a serious shortage (63 *per cent*) of ambulance service availability as per IPHS norms. Every Ambulance is supposed to maintain a minimum of 11 items including emergency drugs and equipment. None of the DH maintained the stock registers of drugs and equipment available in the ambulance. Emergency drugs/first aid kits were not found during physical verification of Ambulances.

(Paragraph 5.7)

Recommendation

- *The DHs needs to take corrective steps to store the drugs as per the labelling conditions prescribed on the packs to maintain their loss of efficacy before being administered to the patients.*
- *The Department needs to ensure that the infection control mechanism is embedded in hospitals and is thoroughly monitored by adopting all prescribed methods of sterilisation and microbiological sampling etc.*
- *The Department may ensure that BMW Rules are adhered and followed rigorously by DHs to provide an infection free environment in the hospitals. Deviation from BMW Rules in Procedures for collection, handling, transportation, disposal and monitoring of the Bio-medical waste should be viewed seriously and monitoring mechanism be developed at the Government level needs to be put in place.*

Maternal and Child Care, prevalence of Cancer and HIV/AIDS in the State

Maternal & Infant Care

Infant Mortality Rate (IMR) in Nagaland is lower than the national figures. The IMR in Nagaland showed a declining trend from 14 in 2014 to four in 2018. Government was not able to keep track of all pregnant women who were registered for Antenatal Care (ANC) to ensure that all pregnant mothers received the stipulated quantum of ANC, timely check-ups, TT and IFA tablets at intervals.

(Paragraphs 6.1.1 and 6.1.3)

Post-natal care

As per JSSK Guidelines, the first 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. Audit observed that during 2014-19, 9382 (65 *per cent)* out of 14,372 women who delivered at the selected DHs were discharged within 48 hours of hospital stay.

The still birth rate had declined in Kohima, but had increased in DH Phek and was highest in DH Tuensang, for want of specialised manpower as well as equipment.

(Paragraphs 6.1.4 & 6.1.5)

District Early Intervention Centre (DEIC)

District Early Intervention Centre at the DH level as envisaged under Rashtriya Bal Swasthya Karyakram (RBSK) is functional in DH Kohima only. Though equipment were procured for establishment of DEIC in DH Tuensang, it is yet to be made functional.

(Paragraph 6.1.10)

Recommendation

- *The Department may strengthen the antenatal care by proper monitoring and follow up of all pregnant women in collaboration with ASHA workers so that the mandated check-ups, including immunisation and IFA tablets are availed by all pregnant women.*
- *ANC should be strengthened in all HUs to achieve the objective of mother and child care.*
- *DHs may review still birth rates critically for corrective action.*
- *Sanctioned DEICs may be made functional as per the norms prescribed by GoI.*
- *HMIS data of the State may be made reliable with adequate cross checks by the DH administration and at the State level.*

Cancer Care

Early diagnosis of Cancer

Audit observed that Mammography machine and Colposcope were not available in the test checked three DHs[1]. Test checked hospitals did not maintain the records of suspected cancer cases referred from CHCs/ PHCs and forwarded to DH Kohima.

(Paragraphs 6.2.3 and 6.2.4)

The Tertiary Care Cancer Centre (TCCC) at DH Kohima approved (December 2016) by GoI for ₹ 43.50 crore, and for which funds received were ₹ 13.23 crore, could not be made functional due to delay in completion of civil works. Equipment procured for ₹ 7.04 crore for TCCC before completion of civil works were lying idle in DH Kohima. Despite availability of funds, the citizens were deprived of specialised cancer care facility in the State (October 2019).

(Paragraph 6.2.7)

Recommendation

- *Develop an accurate data bank of all details relating to the incidence of cancer in the State and strengthen screening of the patients to identify early warning signals of all types of cancer.*
- *Develop focussed strategies to bring behaviour changes in tackling the menace of Cancer.*
- *Develop infrastructure as well as human resources in district hospitals for necessary diagnostic procedures including biopsy.*
- *Ensure expeditious completion of TCCC at DH, Kohima and it may be made fully functional with state of the art bio medical equipment.*

[1] DHs Wokha, Phek and Tuensang

HIV/AIDS Care in the State

Prevalence rate of HIV/AIDS in the State showed an increasing trend except 2015-16. The number of HIV/AIDS positive cases in the State increased from 1.85 *per cent* (2014-15) to 2.26 *per cent* (2018-19). In the test checked DHs (Kohima, Phek, Tuensang & Wokha), the HIV positive cases increased by 16 *per cent* from 542 to 627 during the period 2014-15 to 2018-19.

(Paragraph 6.3.3)

Significant deficiencies were observed in implementation of programmes by Nagaland State AIDS Control Society (NSACS). Specific surveillance plan was not formulated by the NSACS and hence identification of the pockets of infection of HIV/AIDS was limited to data received from District AIDS Prevention and Control Unit (DAPCU).

(Paragraph 6.3.4)

Counselling offered in ICTC centres for pregnant women was inadequate as out of 376 pregnant women screened as positive for HIV/AIDS in test checked DHs, only 41.41 *per cent* were referred or attended in ARTs. Since all the positive cases were not given ART services, possibility of transmission of HIV/AIDS to the new-borns cannot be ruled out.

(Paragraph 6.3.5)

Recommendation

The Nagaland State AIDS Control Society and the Department may consider:

- *Adopting a bottom up approach for preparation of Annual Action Plans so that it is realistic and meets the demands of local situation in the State.*
- *Taking effective steps to screen all pregnant women registered for ANC for detection of HIV/AIDS and RTI/STI cases and ensure that those detected positive should be referred for ART.*
- *The results of the HIV Study conducted by NSACS be put in public domain.*

Overall recommendations on efficiency evaluation of DHs

- *The State 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 DHs.*
- *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.*

What has been the response of the Government?

Audit findings were reported to the Government on 17 August 2020 and an exit conference was held through video conferencing on 14 October 2020. The responses during exit conference and written replies received from the Department have been incorporated in this report, at appropriate places.

CHAPTER-1

INTRODUCTION AND AUDIT FRAMEWORK

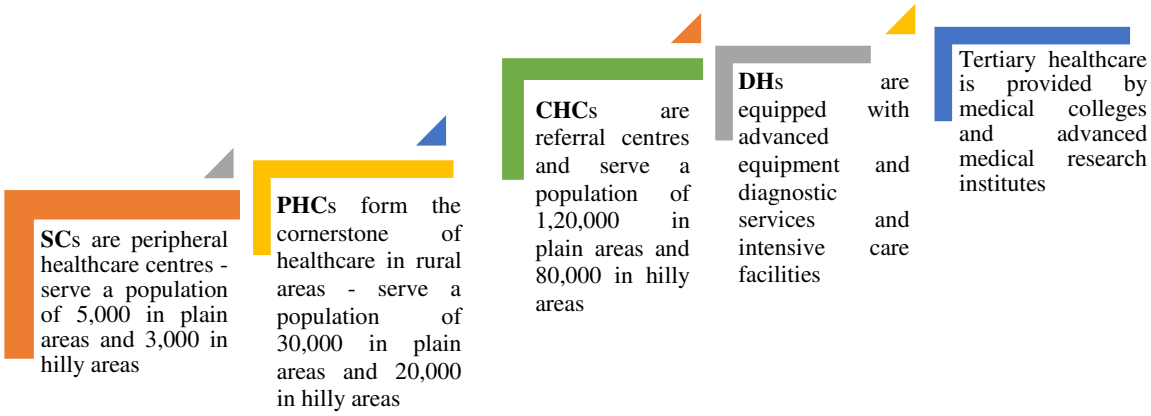
CHAPTER 1: INTRODUCTION AND AUDIT FRAMEWORK

1.1 Introduction

Health is one of the most important parameters for ascertaining the quality of human life. National Health Policy 2017 aims to improve overall population health through a focus on health promotion and disease prevention. Primarily, the policy envisages achieving universal healthcare coverage and reducing the reliance on out-of-pocket spending. It emphasizes restructuring and strengthening the public healthcare institutions with the goal of providing free access to essential drugs, diagnostics and emergency services. There is renewed commitment in India to accelerate the pace of achievement of Sustainable Development Goals (SDGs) including Goal 3 relating to ensuring healthy lives and promoting well-being for all at all ages.

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 Community Health Centres (CHCs) form the primary tier for rural population. These health centres provide preventive and promotive services like immunisation, epidemic diagnosis, childbirth and maternal care, family welfare, etc. DHs serve as the secondary tier for rural population and as primary tier for the 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 and is 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 below:

Chart 1.1: Levels of healthcare facilities



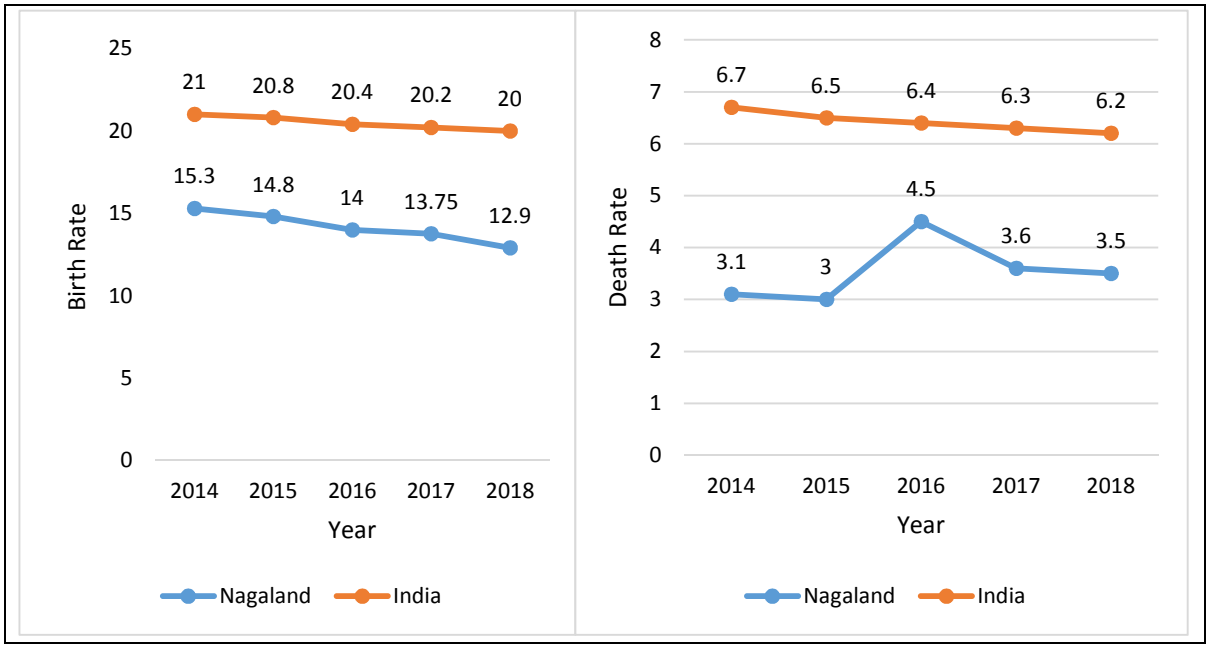
1.2 Overview of healthcare facilities in Nagaland

Nagaland had a population of 19.78 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), 35 Community Health Centres (CHCs), 142 Primary Health Centres (PHCs), one Subsidiary Health Centre (SHC), two Big Dispensaries (BD) and 583 Sub-Centres (SCs). Two Medical Colleges, one in State capital Kohima and another in Mon district are approved by the Government of India. The work for construction of Medical College Kohima is ongoing. In the case of Medical College, Mon, Government of India sanctioned the medical college under CSS

'Establishment of new medical college attached with existing district/referral hospital' for approved cost of ₹ 325 crore in September 2020. At present, the Master Plan, Designs and Institutional arrangement are under process.

As per Sample Registration System (SRS) statistics, 2014-18 of Registrar General of India, Nagaland's score in two main health indicators viz. Birth Rate and Death Rate was better than the National figures. The graphic comparison between the State and National figures of Birth Rate and Death Rate during 2014-18 is given below:

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



Source: Source: SRS Bulletin of respective years (Registrar General, India)

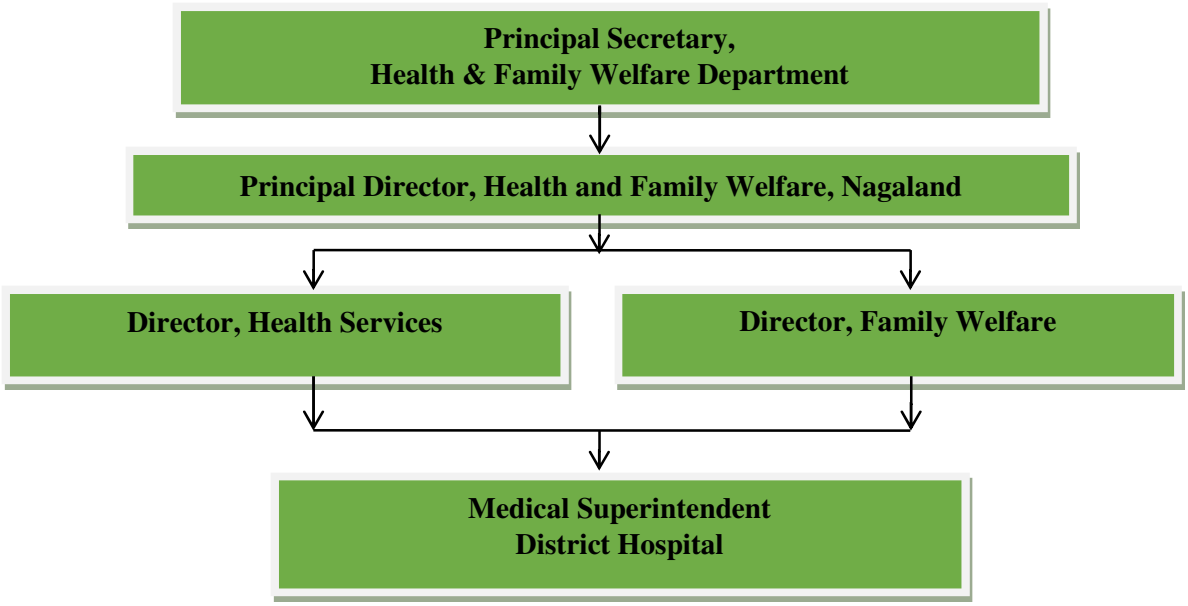
It is observed that the birth rate in the State decreased from 15.3 in 2014 to 12.9 in 2018 and remained less than the national figures throughout the period. However, the rate of decline in birth rate from 2014 to 2018 in the State was higher (2.4 points) than the national rate. Death rate in the State remained lower than the national figures. Death rate in the State showed a mixed trend with increase from 3.1 in 2014 to 4.5 in 2016 and then decreasing to 3.5 in 2018. Disaggregated data between rural and urban population of the above indicators during this period shows that the birth & death rate of the population in the State is more in rural as compared to urban areas. These trends, inter alia, require to be addressed in the policy and programme implementation in the health sector of the State.

1.3 Accountability Structure for Healthcare in the State

The Health and Family Welfare Department is responsible for management of District Hospitals (DHs). Principal Secretary, Health and Family Welfare Department at the Government level and Principal Director, Health and Family Welfare at Directorate level are responsible for overall functioning of the DHs. At the district hospital level, Medical Superintendent (MS) is responsible for day to day functioning of DHs. However, the financial and administrative autonomy at the level of MS is quite limited, with powers delegated only with regard to establishment matters.

The organisational setup of Health and Family Welfare Department of Government of Nagaland (GoN) is given below:

Chart 1.3: Organogram



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 medicare 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 DHs available across the country.

Nagaland accounted for 11 out of these 88 (12.5 *per cent*) districts hospitals in NER. Out of these 11, one district hospital (Naga Hospital Authority of Kohima) has an autonomous status. Out of 11 district hospitals in Nagaland, eight hospitals had a sanctioned bed strength less than 100 and are treated as sub-district hospitals as per IPHS norms though they are district hospitals. The Comptroller and Auditor General of India (CAG) has reviewed the provisions of health care services by Government of Nagaland at periodic intervals. The CAG had earlier reviewed (Report No.1 of 2015) the functioning of NRHM (now NHM). Key healthcare Institutes and Hospitals are also audited annually on a sample basis.

In this background, it was decided to conduct Performance Audit of health care services being provided at the district hospitals in the State to assess the availability of resources identified as essential by Indian Public Health Standard (IPHS) in the district hospitals overall and evaluate the quality of health care service provided by these hospitals in some selected domains.

1.4.2 Healthcare Services at District Hospitals

District Hospitals are at the secondary referral level responsible for providing health care facilities to a district of a defined geographical area containing a defined population. Every district is expected to have a DH. As the population of a district is variable, the bed strength also varies depending on the size, terrain and population of the district. DHs should be in a position to provide all basic speciality services and should aim to develop super-specialty services gradually. DHs also needs to be ready for epidemic and disaster management all the times.

During the period covered in this audit (2014-19), there were 11 districts[1] in Nagaland. Except Kohima district, other 10 districts had DH. However, Naga Hospital Authority, Kohima (NHAK) with total bed strength of 300 has been functioning as DH for State Capital Kohima District. NHAK was conferred autonomous status by the Government of Nagaland through the Naga Hospital Authority Bill, 2003. Since then, it is functioning as an Autonomous multi-speciality hospital and State's only Referral Centre.

The State did not have a Government Medical College.

1.5 Audit Domains

The following audit domains/ themes were identified for the outcome audit of district hospitals:

Chart 1.4: Audit Domains

Resources	Line Services	Support Services	Auxiliary Services
•Manpower •Infrastructure •Equipment •Drugs •Consumables	•Out-patients •In-patients •Emergency •Operation & ICU •Laboratory & diagnostics	•Drug storage •Hygiene •Infection control •Ambulance •Power backup	•Patient rights •Patient safety •Referral Services •Maternal/Childcare/Cancer and HIV/AIDS treatment

1.6 Audit Objectives

The objectives of carrying out a 'Performance Audit of Select District Hospitals' were to assess whether:

i. Adequate and essential resources - manpower, drugs, infrastructure, equipment, and consumables are available for effective functioning of the DHs;
ii. Timely and quality healthcare is delivered through line services like OPD, IPD, ICU, OT, trauma & emergency etc., and diagnostic services;
iii. Support services like drug storage, sterilization, hygiene, waste management, infection control, ambulance, equipment etc., were aiding the line departments in providing a safe and sterile environment in the hospitals; and

[1] Noklak sub-division under Tuensang district became 12th district of Nagaland in July 2020.

iv. the adequacy and timeliness of select healthcare services relating to maternal and infant care, cancer and HIV/AIDS.

1.7 Audit Criteria

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

- Indian Public Health Standards (IPHS) guidelines for District Hospitals.
- National Health Mission (NHM) guidelines 2005 and 2012.
- National AIDS Control Organisation (NACO) Programmes.
- Janani Sishu Suraksha Karyakram (JSSK) guidelines.
- National Quality Assurance Standards (NQAS) for District Hospitals.
- Swacchta Guidelines for Public Health Facilities, GoI.
- Assessor's Guide Book for Quality Assurance in District Hospitals 2013, GoI.
- Operational Guidelines for Prevention, Screening and Control of Common Non-Communicable Diseases, GoI.
- Operational Framework for Management of Common Cancers, GoI.
- Maternal and New Born Health Tool Kit, 2013.
- Government policies, orders, circulars, budgets, annual reports etc., issued from time to time.

1.8 Scope and Audit Methodology

The scope of audit involved assessing the functioning of selected DHs during the five-year period 2014-19. Audit methodology involved an analysis of the Hospital Management Information System (HMIS) data at the State level, test check of records in the Department and Directorate of Health & Family Welfare to understand the policy initiatives, prioritisation of activities, funding and overall support. At the DH level, the data captured in the local HMIS were analysed and samples were drawn to carry out a direct substantive checking to gain assurance about the integrity of data. Patient feedbacks were obtained through appropriate questionnaires to gauge the quality of healthcare services being provided by the DHs and quality of support services was ascertained through the relevant NQAS checklists for DHs by joint physical verification of the facilities along with the hospital authorities. Photographic evidence was obtained where necessary, to support audit findings.

An entry conference was held (6 September 2019) at the outset to explain and agree on the audit objectives, criteria, scope and methodology with the State Government.

Audit findings were reported to the Government on 17 August 2020 and an exit conference was held through video conferencing on 14 October 2020. The responses during exit conference and written replies received from the Department have been incorporated in this Report, at appropriate places.

1.9 Audit Sample

Out of eleven DHs in Nagaland, highest sanctioned bed strength (300) is in DH Kohima which was selected for audit being the functional DH in the State capital. The selection of the other three DHs in Tuensang, Wokha and Phek districts were done using Stratified Random Sampling.

The selected Districts are highlighted in the map below:

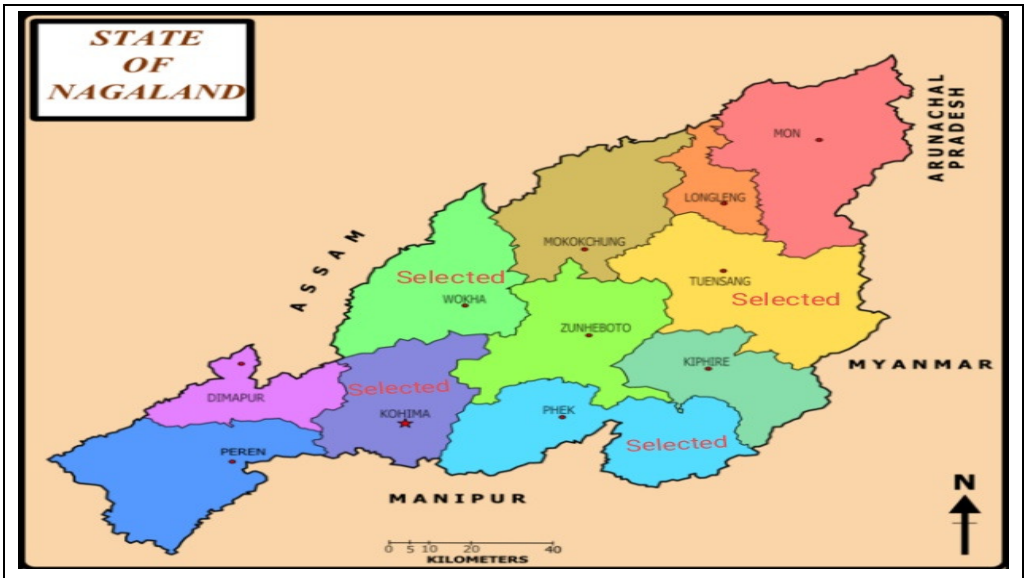


Figure 1.1: Geographical Map of Nagaland State

In respect of the DH Kohima, IPHS norms for 300 bedded district hospital have been applied while as in other three DHs[2], IPHS norms for sub-divisional hospital (51-100 bedded) have been applied.

In addition to the above, one Community Health Centre (CHC) at Viswema and one Primary Health Centre (PHC) at Botsa located within the district hospital radius in the capital district (Kohima) were covered in audit to have a holistic picture to examine the number and nature of cases that are being referred to the DH from the primary and secondary health care facilities relating, especially to maternal and child care issues.

1.10 Acknowledgment

The office of the Principal Accountant General (Audit), Nagaland acknowledges the co-operation extended by the officers and staff of Department of Health and Family Welfare, Nagaland Health Mission, Nagaland AIDS Control Society and Sampled DHs.

[2] DH Tuensang- sanctioned bed strength 100, DH Phek- sanctioned bed strength 75 and DH Wokha- sanctioned bed strength 50.

CHAPTER-2
FINANCIAL RESOURCES

CHAPTER 2: FINANCIAL RESOURCES

2.1 Fund Management

The Health & Family Welfare Department, Government of Nagaland received funds from two main sources; i) State Budget and ii) Grants in Aid from Government of India under National Health Mission (NHM) with corresponding share of the State Government.

2.2 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 of commitment to Public Health 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 is as shown in the table below:

Table No. 2.1: Budget allocation and expenditure

(₹ in crore)

Figure	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Overall Budget Allocation	13012.25	13464.75	17062.62	18449.90	20469.96	82459.48
Overall Expenditure	10123.41	11385.72	14810.84	15942.27	15158.20	67420.44
Outlay on Health	521.09	606.53	646.39	683.79	797.48	3255.28
Expenditure on Health	418.09	489.77	496.56	614.09	631.42	2649.93
Savings against Health Allocation	103	116.77	149.83	69.7	166.07	605.37
Percentage Savings	19.77	19.25	23.18	10.19	20.82	18.60
Percentage of Outlay on Health to overall Budget Allocation	4.00	4.50	3.79	3.71	3.90	3.95
Percentage of Expenditure on Health to Total Expenditure	4.13	4.30	3.35	3.85	4.17	3.93
Expenditure of four sampled DHs	31.58	33.52	35.67	37.59	43.71	182.06
Percentage of Expenditure on Health as compared to GSDP of State	2.27	2.51	2.29	2.53	2.37	

Source: Finance & Appropriation Accounts and Departmental records

As can be seen from the above table, budgetary outlay on health services in the State during the five-year period 2014-19 ranged from four *per cent* of the State budget in 2014-15 to 3.90 *per cent* in 2018-19. In none of the years, the State Government allocated eight *per cent* of its budget to the health sector. Expenditure on health services ranged from 4.13 *per cent* of the total expenditure of the State in 2014-15 to 4.17 *per cent* in 2018-19 and never touched eight *per cent* in any year. The Department did not utilise all the allocated funds in five years period 2014-19 with savings ranging from ₹ 103 crore in 2014-15 to ₹ 166.07 crore in 2018-19.

Further, during the period 2014-15 to 2018-19, the State utilised ₹ 382.35 crore on 11 DHs, out of which ₹ 182.06 crore (47.62 *per cent*) was utilised for the four sampled DHs.

2.2.1 Revenue and Capital Expenditure

Out of the total expenditure of ₹ 2649.93 crore incurred on health during 2014-19, revenue expenditure was ₹ 2493.73 crore (94.10 *per cent*) while capital expenditure was ₹ 156.20 crore (5.90 *per cent*). As per Appropriation Accounts of the State, the details of year wise allocation and expenditure under Revenue and Capital section in respect of Grant No. 35-Medical, Public Health and Family Welfare during the period 2014-2019 has been shown in table 2.2 below:

Table 2.2: Details of Revenue and Capital Expenditure

(₹ in crore)

Year	Revenue			Capital		
	Allocation	Expdr.	Saving (%)	Allocation	Expdr.	Saving (%)
2014-15	471.17	396.86	74.32 (16)	49.91	21.23	28.68 (57)
2015-16	561.65	458.54	103.11 (18)	44.89	31.23	13.66 (30)
2016-17	582.24	483.37	98.87 (17)	64.15	13.19	50.96 (79)
2017-18	588.32	538.17	50.15 (9)	95.48	75.92	19.56 (20)
2018-19	694.85	616.79	78.06 (11)	102.63	14.63	88 (86)
Total	2898.24	2493.73	404.53 (14)	357.06	156.20	200.87 (56)

Source: Appropriation Accounts of the respective year

It can be seen from the above that though Revenue expenditure increased from ₹ 396.86 crore in 2014-15 to ₹ 616.79 crore (55.41 *per cent*) in 2018-19, the Capital expenditure decreased from ₹ 21.23 crore in 2014-15 to ₹ 14.63 crore in 2018-19. The low allocation on Capital account also remained unutilised with savings ranging from 20 *per cent* to 86 *per cent* of the allocation during these years. The State had neither utilised the available funds for asset creation in the health sector nor increased its capital spending. Due to less allocation and utilization of capital funds, there was shortage in equipment in health units across the State. The shortage of equipment in Sub-Centres varied from 29 *per cent* to 55 *per cent* with an average availability of 37.41 *per cent.* In the case of PHCs, availability of equipment as per IPHS norms was 52.70 *per cent*. In the case of CHCs, against 322 IPHS recommended equipment, the availability was only 50 *per cent* across the State. In the case of DHs, against 485 types of recommended equipment, the availability was only 33 *per cent*.

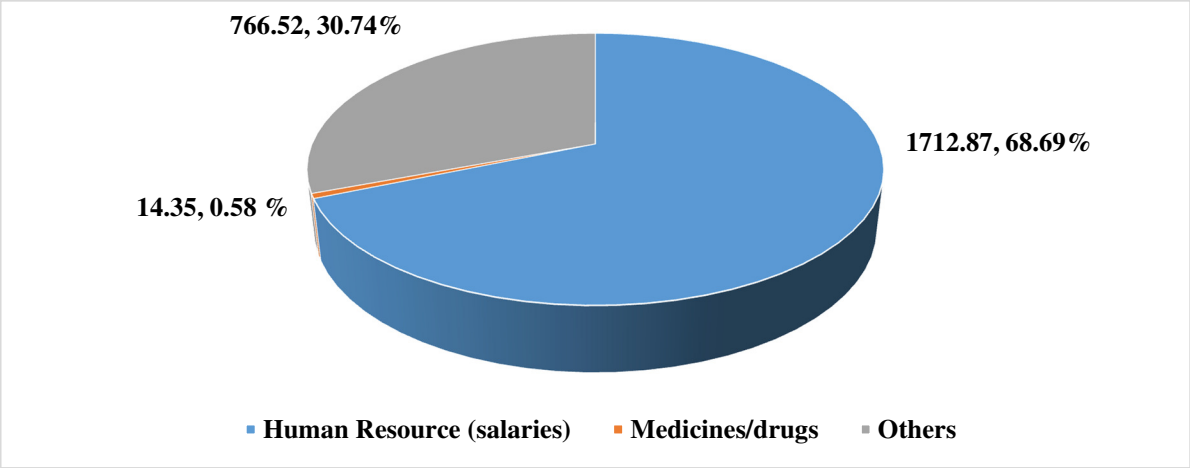
Lower utilisation of capital budget also adversely affected creation of the required number of Sub-Centres for the benefit of inhabitants at the lowest levels. Therefore, the people were deprived of the effective affordable health care services and fully equipped district hospitals.

2.2.2 Component wise Revenue Expenditure during 2014-19

The details of component wise Revenue expenditure incurred during 2014-19 by the Health & Family Welfare Department is depicted in the chart 2.1 below:

Chart 2.1: Component wise details of Revenue expenditure during 2014-19

(₹ in Crore)



Source: Data from Voucher Level Compilation

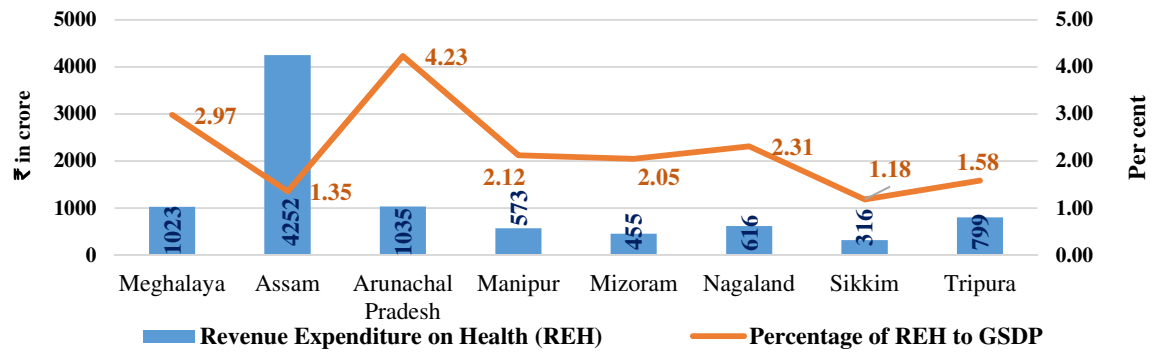
As can be seen from the chart above, 68.69 *per cent* of the Revenue expenditure was incurred on Human Resources (salary), 0.58 *per cent* on drugs/medicines and 30.74 *per cent* towards 'Others'. It is observed that expenditure under 'Others' which comprised mainly of Office Expenses, POL, Motor Vehicles etc., had increased by 62.61 *per cent* from ₹ 120.18 crore in 2014-15 to ₹ 195.43 crore in 2018-19. Despite increase in revenue expenditure over the years, the expenditure on drugs and medicines declined from 0.52 *per cent* to 0.38 *per cent* of the revenue expenditure during the period. Due to decline in revenue expenditure on drugs and medicines, there was shortage of drugs in health units across the State. Availability of drugs in the Sub-Centres varied from five *per cent* to 73 *per cent* with an average of 33 *per cent*. In the case of PHCs, availability of drugs was 36 *per cent*. In the case of CHCs, availability of drugs was very poor as out of 225 recommended drugs only 39 *per cent* drugs were available across the State.

The minimal expenditure on medicines/drugs is not justifiable and has impacted the effective delivery of health care services provided in all health facilities. The impact in District hospitals, is discussed in the succeeding paragraphs.

2.3 Revenue Expenditure on Health compared to other North Eastern States

In terms of quantum of revenue expenditure on health during the financial year 2018-19, Nagaland (₹ 616 crore) was fifth amongst North Eastern States. When we compare the revenue expenditure on health with GSDP, the position of Nagaland was third amongst the North Eastern States with revenue expenditure of 2.31 *per cent* as shown in the Chart 2.2 below. The States, Arunachal Pradesh and Meghalaya were above Nagaland when revenue expenditure on health with GSDP is compared.

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



Source: Appropriation accounts of Nagaland 2018-19

2.4 Receipt and Utilisation of Funds by State Health Society (NHM)

During 2014-15 to 2018-19, the position of fund available with State Health Society (NHM) is as shown in **Table 2.3**.

Table 2.3: Statement showing details of fund received and utilised by State Health Society

(₹ in crore)

Year		Funds received from					Unspent balance (% age)
	Opening balance	GoI	GoN	Interest	Total	Expenditure	
2014-15	69.56	83.26	0	1.35	154.17	48.91	105.26 (68.28)
2015-16	105.26	87.48	20.81	1.3	214.85	115.5	99.35 (46.24)
2016-17	99.36	70.86	14.53	1.44	186.19	91.82	94.37 (50.68)
2017-18	94.38	88.04	2.99	1.13	186.54	106.18	80.36 (43.08)
2018-19	80.37	106.91	13.05	1.29	201.62	110.85	90.77 (45.02)
Total		**436.55**	**51.38**	**6.51**		**473.26**	

Source: Records from Department

During 2014-19, against available funds of ₹ 564 crore (OB - ₹ 69.56 crore, GoI - ₹ 436.55 crore, GoN - ₹ 51.38 crore, Interest - ₹ 6.51 crore) the Department could utilise only ₹ 473.26 crore, with the yearly unspent balances ranging from 43.08 *per cent* to 68.28 *per cent.* In none of the years, the State Health Society could fully utilise the available funds.

Audit further observed that in respect of three out of 19 NHM programmes, savings ranged between 50 to 99.71 *per cent* of the funds received during 2014-19 i.e. National Oral Health Programme (50 *per cent*), National Programme for the Health Care of Elderly (96.92 *per cent*) and Non-Communicable Disease (99.71 *per cent*), thereby indicating that these programmes were not implemented effectively in the State, despite availability of funds. The DHs were deprived of funds under these planned programmes and the intended beneficiaries did not get the benefits of these programmes.

Due to persistent savings of funds under the State budget and also funds under NHM, the secondary healthcare facilities in the State suffered from inadequacy of physical infrastructure, shortage of drugs, equipment, specialist services, emergency and other diagnostic services, as brought out in the audit observations later in the Performance Audit Report.

2.5 Conclusion

The budget allotment and expenditure of the Health and Family Welfare Department against the overall State Budget during the five-year period 2014-19 ranged from ₹ 521.09 crore (4.0 *per cent)* in 2014-15 to ₹ 797.48 crore (3.90 *per cent)* in 2018-19, 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. The expenditure on health ranged from ₹ 418.09 crore (4.13 *per cent*) to ₹ 631.42 crore (4.17 *per cent*) of the total State Budget during the period. The department did not utilise the allocated funds in five years period 2014-19 with savings ranging from ₹ 103 crore in 2014-15 to ₹ 166.07 crore in 2018-19. Though Revenue expenditure on health increased by 55.41 *per cent* from ₹ 396.86 crore to ₹ 616.79 crore during 2014-19, the Capital expenditure decreased from ₹ 21.23 crore to ₹ 14.63 crore (31.09 *per cent)* during the same period.

The Department incurred Revenue expenditure of ₹ 1712.87 crore (68.69 *per cent)* on Human Resources (salaries), 0.58 *per cent* on drugs/medicines and 30.74 *per cent* towards 'Others'. The expenditure under 'Others' which comprised mainly of Office Expenses, POL, Motor Vehicles etc., had increased by 62.61 *per cent* from ₹ 120.18 crore in 2014-15 to ₹ 195.43 crore in 2018-19, while expenditure under drugs and medicines had remained same except in the year 2017-18.

Due to inadequate allocation of budget under Capital and Revenue there were shortage of infrastructure, equipment and medicines in health units across the State. Availability of equipment in PHCs was 53 *per cent* and in CHCs 50 *per cent* across the State. In the case of DHs, against 485 types of recommended equipment, the availability was only 33 *per cent*.

The fund utilisation under NHM was merely 50 *per cent* during 2014-19 indicating poor/non-implementation of various important National Health Programmes. Due to persistent savings of funds under the State budget and also funds under NHM, the secondary healthcare facilities in the State suffered from inadequate physical infrastructure, shortage of drugs, equipment, specialist services, emergency and other diagnostic services.

2.6 Recommendations

(i) The State Government may enhance its budget provision and expenditure on healthcare services as required under NHP. The spending may particularly be enhanced to meet deficiencies in infrastructure like Trauma Centres, for providing adequate supply of medicine and equipment across health facilities and for enhancing human resources in the secondary healthcare facilities in the State.

(ii) The declining trend in utilisation of funds under Capital budget is a matter of concern, which has adversely affected provision of adequate infrastructure in health facilities. Apart from increasing the allocation under capital head, the utilisation requires close monitoring to ensure that the allocated funds are utilised for the intended purpose.

(iii) The State Health Society may take appropriate action to optimally utilise the available funds under various NHM programmes.

CHAPTER-3

ESSENTIAL RESOURCES MANAGEMENT

CHAPTER 3: ESSENTIAL RESOURCES MANAGEMENT

Availability of adequate and essential resources - manpower, infrastructure, equipment, drugs and consumables for effective functioning of the district hospitals

3.1 Standardisation of Service and Resources

For ensuring efficient operation of public sector hospitals, it is essential to prescribe norms for providing various resources in the hospitals. On the basis of these norms, requirement of resources should be assessed and provisions should be made accordingly. Further, facility development plans comprising of components such as infrastructure, equipment, human resources, drugs and supplies, quality assurance systems and service provisioning were to be prepared for each hospital. These plans were to be prepared on the basis of analysis of gaps in the health facilities vis-à-vis the norms.

Audit noticed that the State Government has not prescribed separate norms for providing resources viz., human, infrastructure, equipment, drugs & consumables in the district hospitals but have adopted IPHS norms for the purpose. Audit also observed that the Department had not carried out any gap analysis to ascertain the requirement of resources and service provisioning in the hospitals. Budgetary exercise to ascertain demand/need of funds by DHs was not carried out and the Department did not allocate separate funds for procurement of drugs, equipment, consumables etc., for the DHs in the State Budget.

In exit conference and subsequent reply (October 2020), Department accepted that detailed gap analysis was not done with long term perspective plans.

The Department needs to address the issue by taking into account the long term perspective plan based on the facility surveys.

3.2 Human Resources Management

Human resources are one of the health system inputs by which outcome of a health facility is assessed. Engagement of adequate and appropriate human resources with reference to number of beds is of utmost importance to obtain desired results out of a health facility.

Audit scrutiny revealed that Department of H&FW did not formulate any norms on number and type of human resources required in health facilities and IPHS norms of GoI was followed. The details of available manpower in the State is as shown in **Table 3.1**.

Table 3.1: Human Resource Status in important category of posts in the State

Category of Technical Staff	Requirement as per IPHS	In Position	Shortfall	% shortfall
a. Doctors				
- Specialist Status	279	146	133	47.67
- General Duty MO Status	288	266	22	7.64
- Non Clinical/ Administrative posts	962	530	432	44.91
- Clinical Dentist	33	51	Nil	-
- Ayush MO	32	63	Nil	-
b. Nursing Services	1152	997	155	13.45
c. Paramedical Services	1672	979	693	41.45
d. Social Worker /Female Health worker	794	326	468	58.94

Source: Departmental Figures

As can be seen from above, there is shortfall in human resources with reference to IPHS norms especially in the category of Specialist Doctors (47.67 *per cent),* Nursing services (*13.45 per cent*), Technicians (41.45 *per cent*), Social Worker/Female Health Workers (58.94 *per cent*) and Non-Clinical/Administrative posts (44.91 *per cent*) etc. Shortage of doctors, nurses, paramedical services is an area of concern as the patients are deprived of quality treatment. The huge shortage (59 *per cent*) in the category of Social Workers/Female Health Workers would have a detrimental effect on the efficacy and quality of maternal and child care services. It is also observed that there was an excess of (55 *per cent*) of clinical dentists and Ayush Medical Officers (97 *per cent*) in the State, against the IPHS norms.

Status of manpower in test checked DHs were as shown in **Table 3.2**.

Table 3.2: Manpower available in the test checked DHs

Cadre	Requirement as per IPHS norms	DH Phek		DH Wokha		DH Tuensang		DH Kohima		
		2014-15	2018-19	2014-15	2018-19	2014-15	2018-19	Requirement as per IPHS norms	2014-15	2018-19
Doctors	24	12	12	11	11	12	14	50	44	62
Staff Nurse	30	19	30	14	13	23	26	135	102	123
Paramedics	43	7	10	6	5	6	6	66	44	55

Source: Departmental figure

As can be seen from above, there was persistent shortage of doctors, nurses and paramedical staff in the three test checked DHs[1] (Phek, Wokha and Tuensang) and shortage of staff nurse and paramedics in DH Kohima. During 2014-19, the shortage of doctors in DH Phek was 50 *per cent* against norms and 54 p*er cent* in DH Wokha, whereas in DH Tuensang the number of doctors slightly improved from 12 (2014-15) to 14 (2018-19) and in the case of DH Kohima, position of number of doctors has improved from 44 to 62 (40.91 *per cent*).

[1] In respect of DH Kohima, as per IPHS norms for 300 bedded hospitals and in respect of DH Phek, DH Wokha and DH Tuensang as per IPHS norms for 51-100 bedded hospital.

Table 3.3: Status of shortage of Specialist Doctors/General Duty Medical Officers

Name of DH	Cadres in which manpower was not available/shortage	Impact
DH Phek	Specialists/ Medical Officers were not available in the Services of Medicine, Ophthalmology, Pathology Radiology, ENT, Dermatology, Psychiatry and Forensic Specialist during the last five years. There was shortage of Specialists/ Medical Officers mainly in Surgery, Obstetrics & Gynaecology, Paediatrics, Anaesthesia, Radiology and MIs.	Since sufficient specialists/ doctors were not available, services as envisaged in IPHS norms could not be completely provided to the patients of the districts.
DH Wokha	Specialists/ Medical Officers were not available in the Services of Medicine Specialist, Surgery, Obstetrics & Gynaecology, Paediatrics, Anaesthesia, Ophthalmology, Orthopaedics, Pathology, Radiology, ENT, Dermatology, Psychiatry and Forensic Specialist during the last five years. There was shortage of Specialists/ Medical Officers mainly in Surgery, Obstetrics & Gynaecology, Paediatrics, Anaesthesia, Radiology and MIs.	
DH Tuensang	Specialists/ Medical Officers were not available in Orthopaedics, Radiology, ENT, Psychiatry and Microbiology during the last five years. There was shortage of Specialists/ Medical Officers mainly in Paediatrics, Anaesthesia, and MOs.	
DH Kohima	There was no specialist /MO in Forensic Specialist during the last five years. There was shortage of Specialists/MOs mainly in the cadre of Medicine, Surgery, Paediatrics, Ophthalmology and Pathology. In the Dental wing, there were nine excess doctors than the norms during 2018-19.	

Source: Replies to the Audit Queries

In CHC Viswema (12 bedded) against the requirement of 11 specialists and MOs, the CHC had only four specialists while eight nurses were in position against the requirement of 10. There was no Obstetrician & Gynaecologist, Paediatrician and Anaesthetist in the CHC compromising the ability of the CHC to cater to routine medical issues.

In the absence of requisite number of doctors, the CHC catered services in General Medicine, dental care and AYUSH only and had to refer patients to DH Kohima which is 30 km away for other services.

In the case of PHC Botsa, there was one Doctor (Requirement as per IPHS norms is one Doctor in PHC), one GNM and six ANM (Requirement as per IPHS norms is three Staff nurses) and one Laboratory Technician as of March 2019. Hence, there was no shortage of staff in the category of Doctors and nurses in the PHC.

Department while accepting (October 2020) the audit observation, stated that it is constrained by non- availability of sanctioned posts and ban on creation of posts by State Government. Further, during the exit conference MD, NHM stated that Government has approved the creation of 153 posts in the cadre of Medical Officers, 211 posts of nurses, 11 OT Technicians and 11 other Technical staff.

However, post creation order indicating the type of specialisation in which posts were created, likely recruitment of doctors/nurses/technicians to fill the vacant posts based on the new post creation etc. were awaited.

3.2.1 Conclusion

Human resources, an essential resource for hospital management witnessed persistent shortage in all important cadres, including in test checked DHs. There was shortfall in human resources in the State, especially in the category of Specialist Doctors, Nursing services, Technicians etc. while there was excess manpower in clinical dentist and Ayush Medical Officers. There was persistent shortage of doctors in three test checked districts hospitals of Phek, Wokha and Tuensang in important cadres of services of Medical Officers, Staff Nurse and Paramedical Staff. Shortage of doctors in DH Phek was 50 *per cent* against norms, whereas in DH Wokha, the shortage of doctors was 54 *per cent* during 2014-19. Number of doctors in DH Tuensang slightly improved from 12 (2014-15) to 14 (2018-19). In the case of DH Kohima, position of number of doctors had improved from 44 to 62 (40.91 *per cent*) during 2014-19.

3.2.2 Recommendation

The State Government needs to address:

(i) Shortage of human resources in DHs on priority basis.

(ii) The State Government may incentivise doctors to serve in the remote and hilly areas of the State.

3.3 Physical Infrastructure

3.3.1 Position of sanctioned and functional beds in DHs

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 people and referring centres. As per IPHS norms, hospitals with bed strength below 100 (31 to 100 bedded) are treated as sub-district/sub-divisional DHs. Bed strength of DHs of Nagaland are as shown in **Table 3.4**.

Table 3.4: Bed strength of DHs in Nagaland

Sl. No.	Name of District	Sanctioned Bed strength	Functional beds	Sl. No.	Name of District	Sanctioned Bed strength	Functional beds
1	Kohima (NHAK)	300	252	7	Mokokchung	150	100
2	Mon	100	53	8	Wokha	50	50
3	Dimapur	150	150	9	Phek	75	68
4	Tuensang	100	100	10	Longleng	16	16
5	Zunheboto	50	50	11	Peren	50	30
6	Kiphire	38	38				

Out of 11 districts, there are five DHs which have a sanctioned bed strength of 100 and more. Thus, six DHs have infrastructure and facilities commensurate with a sub-district/ sub-divisional hospital. Therefore, the people of these six districts were deprived of health care services of full-fledged district hospital. Further, five DHs are functioning with less than the sanctioned bed strength.

As referred in Chapter 2 earlier, the State had neither utilised the available funds for asset creation in the health sector nor increased its capital spending resulting in six DHs working as sub-district hospitals instead of full-fledged DHs, thereby defeating the objective of providing comprehensive health care services to the people in the district.

Department replied (October 2020) that bed strength of DH Kohima was reduced to 252 from 300 due to dismantling of Oncology ward to pave way for construction of Tertiary Cancer Care Centre and also conversion of some private wards to accommodate Dialysis unit. In the case of DH Phek, Department replied during exit conference that there were sufficient beds to run the DH as per the sanctioned bed strength but due to less patient load, full sanctioned bed strength was not utilised. The Department did not offer any reply in respect of the three DHs (Mon, Mokokchung and Peren).

3.3.2 Shortage of Sub Centres and CHCs

The IPHS norms for creation of health facilities are based upon population criteria, as shown in the table below:

Table No. 3.5: Norms for creation of health facilities

Health facility	As per IPHS Norms	Requirement as per IPHS norms	Actually available	Non-functional	Actually functional	Shortage
Sub-Centre (SC)	One SC for every 3000 people	660	583	204	379	281
Primary Health Centre (PHC)	One PHC for every 6 SCs or for every 20,000 people	99	142	39	103	Nil
Community Health Centre (CHC)	One CHC for every 4 PHCs or for every 80,000 people	25	35	14	21	4

Source: Departmental reply

It is observed that there was no shortage in availability of PHC in the State as per IPHS norms, while there were shortages (42.5 *per cent*) in availability of functional SCs and (16 *per cent)* in CHCs in the State. This indicates that some habitations were deprived of health care facilities in their close proximity.

The reason for shortage of health units was stated to be lack of infrastructure and manpower. The reply is not acceptable as the department could not utilise the available capital budget during the period of audit which adversely affected creation of health facilities infrastructure at the lowest level. Further, 35 *per cent* of the SCs, 27 *per cent* PHCs and 40 *per cent* CHCs remained non-functional despite the fact that availability of funds was not a problem in the Department. As explained in paragraph 2.2.1 and paragraph 2.2.2 there were savings under both Capital and Revenue heads.

3.3.3 Blood Bank & Blood Storage Units

IPHS norms prescribe that all DHs should have functional blood banks. Blood bank shall be in close proximity to the pathology department and at an accessible distance to operation theatre, intensive care units and emergency and accident department. Further, blood bank should also follow all existing guidelines and fulfil all requirements as per the various Acts pertaining to setting up of the Blood Bank. The details of Blood Bank and Blood Storage Units in test checked DHs is given below:

Audit Observation	Department Reply
In the test checked DHs, blood bank and blood storage unit was functional only in DH Kohima. The blood bank and blood storage units were non-functional in other DHs (Wokha, Phek and Tuensang). The main reason for non-functioning of blood storage unit was non-functioning of the blood bank refrigerators.  **Photograph 3.1: Non-functional blood bank refrigerator at DH Wokha**  **Photograph 3.2 Non-functional blood storage units at DH Phek**	Department replied (October 2020) that blood bank at DH Tuensang was almost complete with only electrification and plumbing work left.

The Department did not offer any comment on non-availability of blood banks and non-functioning of blood storage units in the two test checked DHs (Wokha & Phek).

3.3.4 Conclusion

Inadequate heath system infrastructure limits the access of health facilities and also contributes to poor quality of care and outcomes, particularly among vulnerable sections of the society.

In five DHs, the functional beds were less than the sanctioned bed strength. Six DHs are functioning with less than 100 sanctioned bed strength which indicates that six districts were having inadequate health facilities of the level of sub-district/sub-divisional DHs to cater to growing population. Despite availability of funds there was shortage of 281 functional Sub Centers and four Community Health Centres in the State with reference to population criteria. There was no Blood Bank in three out of four test checked DHs. Blood Storage Unit at DH Wokha, Phek and Tuensang were also non-functional.

3.3.5 Recommendation

(i) State Government may ensure increasing the bed strength in deficient DHs taking into account population served and set up sufficient Sub-Centres and Community Health Centres to impart proximate health care services.

(ii) State Government may ensure availability of Blood Banks in all DHs as per norms and expedite installation of available blood bank equipment.

(iii) The Department may take steps to make DHs functional with Blood Banks.

3.4 Management of Drugs and Consumables

3.4.1 Assessment of requirement of drugs and consumables

Timely supply of drugs of good quality, which involves procurement as well as logistics management, is of critical importance in any health system. As per the framework of implementation of National Health Mission (NHM) 2012-17 and NHM Free Drugs Service Initiative, a Corporation/Body was to be established for procurement and logistics of equipment and supplies. Further, procurement of drugs was to be done by the Central Procurement Board or equivalent body at the State level and suppliers were required to supply the tendered drugs to the district level. To ensure that there are no disruptions in availability of free drug, provision for cash transfer to Health Units (HUs) may be allowed, preferably up to 10 *per cent* but not exceeding 20 *per cent* of the resources for local purchase. Mention was also made in 'Nagaland Drugs and Diagnostic Policy 2013' to procure drugs timely, taking into account the consumption pattern and capacity of ware house to ensure uninterrupted availability of drug to patients.

Requirement of drugs and consumables in HUs are to be assessed taking into account the patient load, number of OPD, IPD, ICU, emergencies and other services being provided by the DHs and other HUs.

Audit observed that CMOs and MSs of the selected four districts did not assess the requirement as per Essential Drug List (EDL). Indents were also not sent to the Directorate of Health Services or Managing Director, NHM for procurement of drugs and consumables. DHFW/NHM also did not monitor the receipt of such demands from the CMOs/ MSs of the Districts.

Further, it was also observed that the State followed the centralised procurement policy, the Procurement Board constituted at the Directorate, identified the quantity and type of drugs and consumables to be procured without following prescribed norms of assessing the requirements for each HU. Further, cash was also not transferred to HUs (10 *per cent* to 20 *per cent*) as envisaged in the Free Drugs Service Initiative.

During 2014-19, against requirement of 255 EDL drugs only 102 drugs were procured. The shortage of EDL drugs ranged between 17 to 100 *per cent* while the overall shortage of EDL drugs was 60 *per cent* (**Appendix-I**). The shortage is explained inter alia, by the declining expenditure under drugs and medicines and has been detailed in paragraph 2.2.2.

Department replied (October 2020) that under free drug initiative, fund made available was not sufficient to sustain the availability of drugs and consumables for the whole year. Therefore,

cash to the health units for procurement of medicines and consumable as envisaged in the guidelines could not be provided.

Reply of the Department only corroborates the audit findings of low spending on drugs.

3.4.2 Procurement of Drugs with less shelf life

Terms & conditions for supply of Drugs under NHM & State Budget stipulates that all the supplied drugs should have a minimum life of 18 months. During 2017-19, 20 number of supply orders (₹ 19.98 crore) involving supply of 414 number of drugs under NHM and State budget were issued. Out of these procurements, it was observed that in 13 cases, 123 numbers of drugs were supplied with less than stipulated shelf life of 18 months.

Drugs with reduced shelf life result in early stock out position of essential drugs. An analysis of availability of essential drugs in the four selected districts revealed that essential drugs were regularly shelf out in the hospitals as shown in **Table 3.6**.

Table 3.6: Essential drugs shelf out period

Districts Hospitals	Shelf out period of Essential drugs				
	1 month to 3 months	3 months to 6 months	6 months to 9 months	9 months to 1 year	More than 1 year
Kohima	5	17	14	0	45
Phek	14	11	7	4	31
Wokha	50	43	42	51	102
Tuensang	25	09	14	12	19

Source: Records of the Hospitals

The shelf out period of essential drugs for more than a year is an alarming trend.

Thus, improper procurement and lack of verification of supplies received from suppliers resulted in reduced shelf life and shelf out of essential drugs. In absence of the availability of essential drugs, the patients would be compelled to purchase them from the open markets.

Department stated (October 2020) that some categories of drugs have shorter shelf life. In cases where drugs procured were of lesser quantities, the manufacturing companies did not entertain to supply the same which compelled the Department to procure the latest batch available in the market. Reply furnished by the Department is not acceptable as all supply orders stipulate that all the supplied drugs should have a minimum life of 18 months and the verification board had the right to reject any items of drugs, if it was found not according to the terms & conditions of supply order.

3.4.3 Quality assurance

Quality Assurance in public procurement is extremely critical. Drugs must be sourced from manufacturers who comply with Good Manufacturing Practices (GMP). All supply orders issued by the H&FW Department also includes the clause to enforce suppliers to furnish Quality Test Certificate from the manufacturer or from the Government empanelled testing laboratory. As per Nagaland Drugs & Diagnostic Policy 2013, Purchase Committee is to verify the manufacturing company, GMP certificate, Company authorisation letter to stockist/supplier, company price list and valid whole sale drug license before awarding the

supply orders. Besides, quality of drugs are also to be checked by sample testing of every batch before distribution. The State does not have a drug testing laboratory and for testing, drugs are sent to Regional Drug Testing Laboratory (RDTL), Guwahati.

Scrutiny of records revealed that suppliers (both from NHM and State budget) did not submit Quality Test Certificate either from the manufacturer or from the empanelled laboratories. Further no record on verification of Quality Test Certificate and other mandatory documents were available in the records.

Examination of records of Drug Controller (DC), Nagaland, Kohima revealed that 425 samples were drawn from different HUs and pharmacies across the State and 13 samples were declared as substandard. However, details of all the samples taken were not furnished to audit. Details of drugs declared as substandard by DC are shown in **Table 3.7**.

Table 3.7: Drugs declared as substandard by DC during 2014-15 to 2018-19

Year	No. of drug samples tested	No. of drug samples declared substandard
2014-15	52	0
2015-16	98	5
2016-17	50	1
2017-18	42	1
2018-19	183	7
Total	425	13

Source: Records of Drug Controller, H& FW Department, Government of Nagaland

Further, it was noticed that:

- Drug Inspector under CMO Wokha sent (July 2017) a sample of Metronidazole – 400 (batch No. 1712025) to Regional Drug Testing Laboratory (RDTL) Guwahati which was declared not of the standard quality (October 2018). Though recall order (October 2018) was issued, entire drug was dispensed to HUs (January & February 2019) after declaring it as substandard.
- NHM purchased 488700 tablets (August 2018) of Zinc Tablet DT- 20 (Batch No G-180018). The sample of the medicine from CMO store, Wokha, collected by Drug Inspector, Wokha (August 2018) was declared as not conforming to standards by RDTL Guwahati (October 2018). Drug inspector, Wokha seized 1400 tablets out of 7000 received by CMO. Call back order of remaining tablets of the batch issued to all districts was not on record.
- Sample of Iron Folic Acid tablet -0.05mg (Batch No. T. 5214) collected from CMO Store, Wokha (August 2018) also did not conform to the standards as declared (October 2018) by RDTL Guwahati.
- Sample of Albendazole Tablet IP 400mg (batch No. 9410) drawn (November 2018) from CMO Store, Tuensang was also found to be substandard (February 2019).

The details of recall of substandard drugs and status of disposal were not on record.

The above cases of supply & distribution of substandard medicines were the result of non-adherence to purchase protocols formulated by the Department. This had also resulted in

probable distribution of sub-standard drugs to the health units, endangering the health of patients.

Department replied (October 2020) that quality test certificates were produced by the supplier and counter checked by the verification board. In the case of call back of substandard drugs, Drug Controller, Nagaland stated (November 2020) that except Zinc Tablet DT- 20 (Batch No. G-180018), other tablets could not be recalled due to stock out position of the same in the respective health units.

Reply furnished by the Department is not acceptable as none of verification formats contained the remarks that quality test certificates were produced by the suppliers during verification. Further, call back order of sub-standard drugs would not have arisen, if the drugs supplied had the quality test certificates from the manufacturer. The reply is also an admission of the fact that sub-standard medicines were supplied to health units, much to the detriment of health of patients.

3.4.4 Conclusion

Requirement of drugs was not assessed prior to procurement and the selected DHs did not send indents to the Directorate Health Services or NHM for procurement of drugs and consumables and the Procurement Board constituted for procurement of drugs at Directorate level, procured drugs and consumables without assessing the requirement of each HU. Due to decline in expenditure on drugs and medicines from 0.52 *per cent* to 0.38 *per cent* of the revenue expenditure, there was a huge shortage (54 *per cent*) in availability of essential drugs in the State. Out of 414 number of drugs procured, 123 drugs had a shorter shelf life than required and the quality of drugs supplied remained suspect as the manufacturers did not furnish quality certificates as required in the supply orders and the Nagaland Drugs & Diagnostic Policy 2013. There were instances where drugs declared as sub-standard by the Regional Drug Testing Laboratory were issued to the health units, jeopardising the health of patients.

3.4.5 Recommendation

(i) The Department may ensure that the procurement of drugs is based on realistic assessment of requirements of health units and ensure that Free Drugs Service Initiative is actually implemented in the State's Health Facilities.

(ii) Procurement of drugs, consumables etc. should be made in a timely manner to avoid stock of drugs with reduced shelf life.

(iii) The State Government may make it mandatory for suppliers to furnish quality report for medicines so as to ensure quality drugs to patients besides setting up of a Drug Testing Laboratory.

3.5 Availability of Equipment

In order to provide quality health services, DHs should be well equipped with all necessary lifesaving equipment, diagnostics and therapeutic equipment, furniture and other hospital accessories. Norms for requirement of equipment by various departments is provided by IPHS. Audit scrutiny revealed that sufficient number of equipment required as per IPHS norms were not available in test checked DHs as detailed in table 3.8 below:

Table 3.8: Shortage of important equipment in test checked DHs

Name of the Equipment	Upto 100 beds				201-300 Bedded	
	Norms	DH Tuensang	DH Wokha	DH Phek	Norm	DH Kohima
300 M.A X-ray machine	1	0	0	1	1	0
100 M.A X-ray machine	1	0	0	0	1	1
60 MA X-ray	1	0	0	0	1	0
Dental X-ray machine	1	0	0	0	1	1
Colour Doppler Ultrasound machine with 4 probes)	2	0	0	0	3	1
Safe light X-ray darkroom	2	1	0	2	3	1
Cassettes X-ray	10	4	0	2	15	2
X-ray lobby single	4	1	0	0	8	1
X-ray lobby Multiple	0	0	0	0	1	0
ECG machine	1	0	0	0	2	0
Ventilators (Adult)	1	0	0	0	4	1
Ventilators (Paediatrics)	1	0	0	0	1	
Pulse oximeter	3	1	0	0	8	1
Infusion pump	1	0	0	0	2	0
B.P. apparatus table model	12	1	0	0	25	3
Stethoscope	15	1	3	3	40	11
Phototherapy Unit	1	0	0	0	3	0
Total availability w.r.t norms (*Per cent*)	**56**	**9 (16%)**	**3 (5%)**	**8 (14%)**	**118**	**23 (19%)**

Source: Records from District Hospitals

It is observed from the table that important equipment such as 100 M.A X-ray machine, Dental X-ray machine, Colour Doppler ultra sound, ECG machine, Ventilators (adult & paediatrics), Infusion pump, Phototherapy unit were not available in 3 out of 4 DHs. While 300 M.A X-ray, X-ray lobby multiple, ECG machine, Infusion pump and Phototherapy unit were not available in Kohima DH. The availability of essential equipment in the three test checked DHs (Tuensang, Phek & Wokha) ranged between five to 16 *per cent*, while the availability of equipment in DH Kohima is only 19 *per cent,* which is a multispecialty hospital and the State's only referral hospital. This would severely impact effective diagnosis of the patient maladies. As referred in Chapter 2 earlier, less allocation on Capital head and non-utilisation of available funds is reflected in the poor availability of equipment in the test check DHs.

Department did not offer any comment (November 2020) on non-availability of important equipment in the test checked DHs.

3.5.1 Incomplete Supply and Non-utilisation of Available Equipment

Apart from shortages in equipment outlined above, audit also observed that in the following cases, though equipment was procured, its optimum use could not be ensured.

Supply order for 27 equipment for establishment of blood separation unit at DH Kohima was issued (January 2018) by State Health Society (NHM) for ₹ 72.78 lakh to the supplier with the terms & condition of the supply order that supplies should be completed within 60 days from the date of issue of supply order. It was also mandatory to produce quality test certificate from

the manufacturer or from the Government empanelled testing laboratory and up to date good manufacturing practices certificate as per the supply order. It was noticed that as per the verification report, items were supplied (September 2018) and were installed in Pathology Department of DH Kohima. However, five equipment[2] were not supplied by the supplier and payment was released (March 2019) by NHM based on an undertaking by the supplier to supply the same within 20 days. However, it was observed that the Blood Separation Unit could not be made functional as of March 2020 as the supplier did not supply all equipment despite full payment.

Department replied that equipment which were not supplied earlier have been supplied now (October 2020). However, blood separation unit could not be made functional due to defects arising in few of the supplied equipment. Reply is an acknowledgement of the fact that the quality conditions envisaged in the supply order were not complied with the supplier. Notwithstanding this defect, payment was released to the supplier.

3.5.2 Non-functional Biomedical Equipment

Department of H&FW entered into an agreement (October 2016) with a firm for maintenance of Bio-Medical Equipment in all the public health care delivery institutions for an amount of ₹ 2.60 crore per year for a period of five years. As per the term & conditions of the agreement, the service provider had to maintain an up-time of 24x7, 365 of 95 *per cent* of the equipment in DHs, 90 *per cent* in CHCs and 80 *per cent* in PHCs. Appropriate penalty clause was included in the scope of work for non-maintenance of required up-time. The firm had been paid ₹ 5.18 crore up to July 2018. No payment was released after that due to unsatisfactory service by the service provider. The Department did not cancel the agreement with the firm and also did not select any new service provider (April 2020).

Audit could not assess the status of maintenance of up-time of equipment installed in test checked DHs as DHs did not maintain Call record register. It was however observed that there were 75 different equipment[3] lying non-functional in test checked DHs. Number of months for which these equipment were lying non-functional could not be calculated as three[4] out of four test checked DHs did not furnish date from which the equipment were non-functional. In the case of DH Phek, down time of equipment ranged from two months to 15 years.

Photograph of some of the non-functional equipment are depicted below:

[2] Platelets Agitator, Automated Plasma Expresser, Electronic Weighing Balance and Elisa Rader and table top centrifuge.

[3] DH Wokha – 26 equipment, DH Tuensang- 24 equipment, DH Kohima - 17 equipment, DH Phek- 8

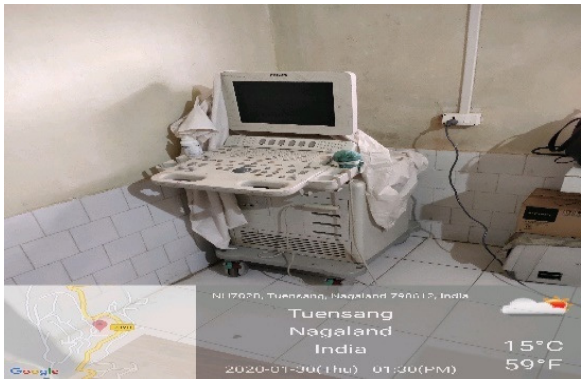
[4] DH Tuensang, Kohima and Wokha.

Photograph 3.3: Mammography Machine installed (March 2015) in DH Kohima was not functioning since October 2019. There was frequent break down and was functional only for 31 days since its installation.

Photograph 3.4: Non-functional X-ray machine kept near dental X-ray room in DH Kohima

Photograph 3.5: Non-functional ultra sound machine since March 2014 in DH Kohima

Photograph 3.6: Non –functional radiant warmer since 2018 in DH Tuensang



Photograph 3.7: Non- functional Ultra sound Machine since November 2018 in DH Tuensang.

Photograph 3.8: Non-functional dental x-ray machine since May 2018 in CHC Viswema.

Further, Department also did not invoke penalty provisions as stipulated in the contract agreement for non-maintenance of up-time.

Thus, due to non-maintenance of up-time, expected service could not be provided to the patients.

Department while accepting (October 2020) the audit findings replied that in view of the non-maintenance of up time as per agreement and in the light of non-repair of equipment lying in DHs, the payment for the month of April 2019 to December 2019 had not been released and the agreement also cancelled with effect from 1st of January 2020. It was also stated that proposal was made for management of Bio-Medical Equipment in house which has been approved in ROP 2020-21 and the State is to initiate the pilot project in one or two districts.

Fact however, remains that equipment are still remaining non- functional as no new agency has been entrusted for the repairs of the equipment (November 2020) depriving the intended benefit out of these equipment to the patients.

3.6 Conclusion

For quality healthcare services, appropriate medical equipment must always be available and should function effectively. Audit scrutiny revealed deficiencies in availability and functionality of equipment in test checked DHs. Important equipment like Dental X-ray, Ultra sonogram, Computerized ECG Machine, Cardiac Monitors, Ventilators, Photo Therapy Units, Equipment for ENT *etc.* were not available in three test checked DHs (Phek, Wokha and Tuensang). The availability of essential equipment in DH Tuensang, DH Phek and DH Wokha ranged between five to 16 *per cent* whereas the availability of equipment in DH Kohima was 19 *per cent,* though it is a multispecialty hospital and the State's only referral hospital. There were 75 different equipment which were lying non-functional in test checked DHs, for want of maintenance of equipment, affecting the service delivery.

3.7 Recommendations

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

(ii) The Department may ensure proper maintenance of equipment through Annual Maintenance Contract to reduce the breakdown time of critical equipment for diagnosis.

CHAPTER-4

DELIVERY OF HEALTHCARE SERVICES

CHAPTER 4: DELIVERY OF HEALTHCARE SERVICES

4. Delivery of timely and quality health care through line services like OPD, IPD, ICU, OT, Trauma & Emergency and Diagnostic services

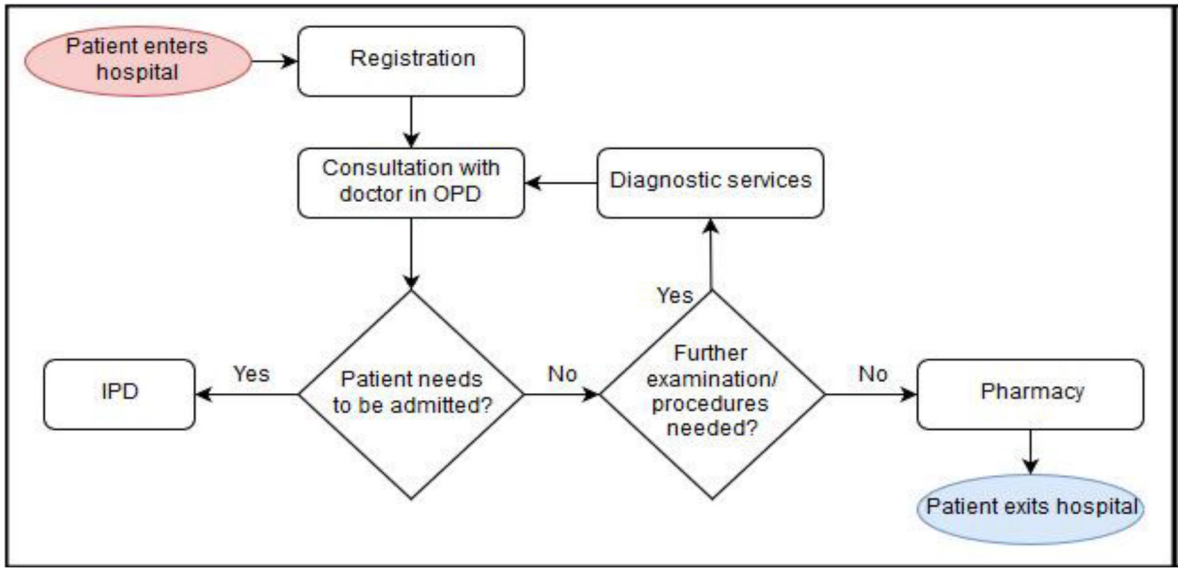
High-quality healthcare services involve the right care, at the right time, responding to the users' needs and preferences, while minimizing harm and wastage of resources. Quality healthcare increases the likelihood of desired health outcomes. Audit observations on delivery of timely and quality healthcare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

4.1.1 Registration of patients in OPD

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. IPHS norms envisage computerised registration. It is desirable that the registration process is computerised and able to collect patient information such as age, sex, address, ailment and previous patient information in case of old cases in a quick manner so that unnecessary delay is avoided. Depending on the status of illness of the patient, doctor also decides whether the patient requires to be admitted as an in-patient. The detailed process flow is shown in the chart below:

Chart 4.1: Flow of patient services



Audit scrutiny revealed that manual registration system was followed in three DHs[1]. Though registration records are maintained in these DHs, the Unique Identification Number, chief complaint, referral details, past history of the patient, diagnosis of ailment *etc.* were not

[1] DHs Phek, Wokha and Tuensang

recorded. In DH Kohima, computer based registration is followed. However, in its data, name of the patient, village and contact details only were captured. Details of ailment, whether it was a referral case etc. were not captured. Details of IPD patient were also not captured in the system and manual system was still followed for IPD patients. Back up of the data collected in computer system was periodically erased. The computer system was used to generate a registration number only for the OPD patients. Further, online registration system had not commenced in the State.

Since registration did not record complete information of the patient, registration data maintained in the DHs did not serve any purpose for patient analysis (type of complaint, referral etc.) and it is a mere data of number of patients registered in OPD and for collecting registration fee from patients.

4.1.2 Wait time for registration and waiting time between registration and consultation with the doctor

The 'wait time' for registration at the Registration counters and wait time between registration and consultation as per the response of 82 patients during Patient Satisfaction Survey conducted in the test-checked DHs is tabulated below:

Table 4.1: Waiting time for registration and between registration and consultation with the doctor in the test-checked DHs

(A) Waiting time for registration

Name of DH	No. of Patients surveyed	Wait time in minutes		
		1-5	6-30	31-60
DH Kohima	40	27	13	nil
DH Wokha	12	11	1	nil
DH Phek	10	10	nil	nil
DH Tuensang	20	19	1	nil
Total	**82**	**67**	**15**	**nil**

(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	More than 1 hour
DH Kohima	40	15	10	11	nil	2	2	nil
DH Wokha	12	8	1	01	nil	nil	01	01
DH Phek	10	1	3	2	nil	nil	3	1
DH Tuensang	20	15	5	nil	nil	nil	nil	nil
Total	**82**	**39 (47.56%)**	**19 (23.17%)**	**14(17.07%)**	**nil**	**2 (2.44%)**	**6 (7.32%)**	**2 (2.44%)**

As can be seen from above tables, registration time was within the prescribed period of 1 to 5 minutes as 67 patients (81.70 *per cent*) responded that registration time took from one to five minutes. In the case of waiting time between registration and consultation with doctor 39 (47.56 *per cent*) patients responded that waiting time was between 1-10 minutes. In DH Kohima, 13 patients (32.5 *per cent*) surveyed had a wait time of 6 to 30 minutes for registration and 21 patients (52.5 *per cent)* waited 11 to 30 minutes for consultation with doctors after registration. Thus, there was a scope for further improvement of waiting time for registration and consultation after registration in the case of DH Kohima, especially in view of the fact that

there was no shortage of doctors and the shortage of nurses and paramedical staff was least in this DH, as compared to other three DHs (Wokha, Phek & Tuensang).

4.1.3 Patient Load in OPD

IPHS norms prescribe that workload in OPD should be studied and measures should be taken to reduce the waiting time for registration, consultation, diagnostics, pharmacy etc. The norms also prescribe that hospitals should develop standard operating procedures (SOP) for OPD management, train the staff and implement the SOP. The number of out-patients attended to in the test-checked hospitals is shown in table below:

Table 4.2: Number of patients treated in OPD of the test checked DHs

Year	DH Kohima	DH Phek	DH Tuensang	DH Wokha
2014-15	67001	9985	7535	13017
2015-16	69415	8745	5541	11090
2016-17	67935	9141	7197	14725
2017-18	87158	11421	6394	17458
2018-19	119297	12402	6223	15015

Source: HMIS Reports

It is seen that the number of OPD patients increased in DH Kohima except for a minor shortfall in 2016-17. The increase in patient load in this DH was 78 *per cent* from 2014-15 to 2018-2019. Among other factors, this trend mirrors the adequacy of manpower and other facilities and also due to the fact that it is the only referral hospital in the State.

Photograph 4.1: Patients waiting at OPD in CHC Viswema (Photograph taken on 14/02/20).

In DH Phek, the number of OPD registrations went down during 2015-16 and 2016-17 while DH Wokha showed a mixed trend. In Tuensang DH, the number of OPD patients never reached the level of 2014-15 in the ensuing four years.

In CHC Viswema, number of patients utilising the OPD facilities showed decreasing trend. In the year 2014-15, number of patients utilising the services of OPD was 2924 whereas in 2018-19 it decreased to 2514 (14 *per cent* less – with reference to 2014-15). The decrease in OPD numbers could be linked to the non-availability of specialist and medical officers (64 *per cent*) including Obstetrician & Gynaecologist, Paediatrician and Anaesthetist in the CHC.

In PHC Botsa, patients utilising OPD services had increased from 2093 (2014-15) to 3209 (2018-19) which was 53.32 *per cent* increase as compared to 2014-15.

The shortage of doctors as mentioned in Paragraph 3.2 in all the three test checked DHs, had further impacted the quality of services to the public.

4.1.4 Availability of essential services in OPD

NHM Assessor's Guidebook prescribes list of services to be provided in OPD. However, some of the services were not provided in the test checked DHs as tabulated in **Table 4.3**.

Table 4.3: Availability of essential services in OPD

Name of Services	No. of Services to be provided	No. of services provided by DH			
		DH Kohima	DH Wokha	DH Phek	DH Tuensang
Curative Services	15	13	6	9	5
RMNCHA[2] Services	4	3	2	3	1
Diagnostic services	3	2	1	1	1
NHM programme [3]	10	7	5	4	3

Source: Record review, staff interview and Physical verification of test checked DHs

Reason for non-availability of services was mainly due to non-availability of human resources and infrastructure in the respective service.

Department ensured (October 2020) that gaps in essential services would be verified.

4.1.5 Basic amenities in OPD

NHM Assessor's Guidebook prescribes amenities to be provided to the care seekers in health facility. Status of availability of some of the important facilities in the test checked DHs are detailed in **Table 4.4**.

Table 4.4: Availability of some of the important facilities in the test checked DHs

Name of Amenities / facilities available	DH Kohima	DH Wokha	DH Phek	DH Tuensang
Availability of Wheel chair or stretcher for easy Access to the OPD	Yes	No	Yes	Yes
Seating arrangement	Insufficient	Yes	Yes	Yes
Potable drinking water	No	Yes	No	No
Separate toilets for male and female patients	No	No	No	No
Availability of ramps with railing	No	No	Yes	No
Availability of disabled friendly toilet	No	No	No	No

Source: Record review, staff interview and Physical verification of test checked DHs

As can be seen from above, none of the DHs provided separate toilet for male and female patients and disabled friendly toilet. Potable drinking water facility was available only in DH Wokha. Ramp was available in the new building of DH Phek but the same facility was not available in other test checked DHs. The non-availability of basic amenities in DH Kohima is serious, being the only referral hospital in the State.

[2] Reproductive, Maternal, New born, Child plus Adolescent Health

[3] Maternal Health Services, New Born Care, National Vector Borne Diseases Control Programme, TB Control Programme, Leprosy Eradication Programme etc. implemented under NHM.

Wheel Chair, Seating arrangement and Potable drinking water were available in CHC Viswema and PHC Botsa. However separate toilets for male and female, ramps, and disabled friendly toilets were not available.

Department assured (October 2020) that gaps in basic amenities would be verified but did not spell out what remedial action would be taken to improve the basic amenities in OPD.

4.1.6 Conclusion

Manual system of registration was followed in three test checked DHs and there was no facility for online registration in any test checked DHs. Patients availing OPD services showed a mixed trend. DH Kohima and DH Phek showed an increasing trend in registration of patients while DH Tuensang showed a decreasing trend. Essential services to be provided in DHs also varied across test checked DHs. There were deficiencies in providing minimum basic amenities to the patients in OPD in test checked DHs. None of the DHs provided separate toilet for male and female patients and disabled friendly toilet. Potable drinking water facility was available only in DH Wokha. Ramp was available in the new building of DH Phek but the same facility was not available in other test checked DHs.

4.1.7 Recommendation

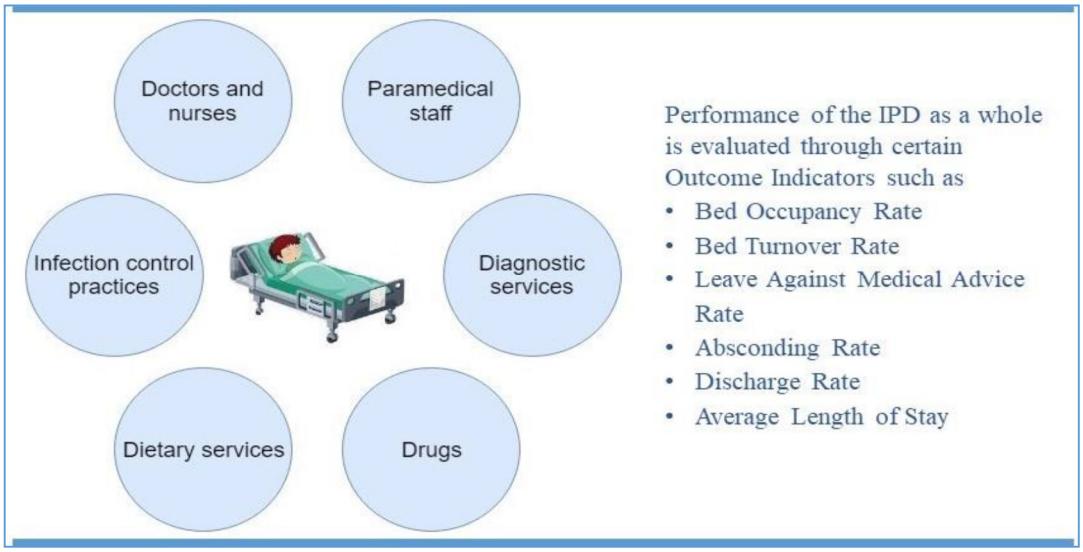
(i) The Department may ramp up the OPD Services keeping in view the increasing demand for services. They may introduce computer based registration system in OPD/IPD in all DHs.

(ii) State Government may ensure availability of essential services in the OPDs in all DHs.

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 4.2: IPD services in the hospital



4.2.1 Availability of services in the IPD of the test checked DHs

As per NHM Assessor's Guidebook, a DH should be provided with specialist in-patient (IPD) services related to General Medicine, General Surgery, Ophthalmology, Orthopaedics etc. Status of availability of important in-patient services in test checked DHs are as detailed in **Table 4.5**.

Table 4.5: Availability of important IPD services in test checked DHs

Hospital	Essential IPD Services										
	GM	IW	GS	Bur	Opth	Orth	Psy	Phy	Dia	Acc	Nursing 24x7
Kohima	✓	✓	✓	×	✓	✓	×	✓	✓	×	✓
Wokha	✓	✓	✓	×	×	×	×	×	×	×	×
Phek	✓	✓	✓	×	×	✓	×	×	×	×	✓
Tuensang	✓	×	✓	×	×	×	×	×	×	×	×

Source: Information furnished by DHs

GM: General Medicine, IW: Isolation Ward, GS: General Surgery, Bur: Burns ward, Opth: Ophthalmology, Orth: Orthopaedics, Psy: Psychiatry, Phy: Physiotherapy, Dia: Dialysis, Acc: Accident & Trauma

As can be seen from table above, Burn ward, Psychiatry and Accident & Trauma ward were not available in any of the test checked DHs. Ophthalmology, Physiotherapy and Dialysis services were not available in three DHs, Wokha, Phek and Tuensang while there was no facility for 24x7 nursing in Tuensang and Wokha. Shortage of essential IP Services like Burns, Psychiatry, Accident & Trauma in DH Kohima indicates that patients had to be either referred out of State or to private hospitals, entailing additional financial burden on the patients.

Due to non-availability of all in-patient services, the DHs failed to provide comprehensive healthcare services to the people and they were compelled to go outside from their respective District/State to avail the healthcare services.

Department replied (October 2020) that setting up of dedicated wards for accident and trauma services would be explored as per the requirement. However, Department did not comment on non-availability of other services in test checked DHs.

4.2.2 Rosters for Doctors and Nurses

Roles & Responsibilities of administrative and clinical staff are determined as per Government regulations and standard operating procedures. The facility should have an established procedure for duty roster and deputation to different departments. Duty rosters ensure that staff is available on duty as per roster. None of the test checked DHs maintained doctor's roster. However, Nurses rosters were maintained in all test checked DHs.

In the absence of duty rosters, number and type of specialists/ MOs available in IPD could not be analysed in audit. It is not known how the DH monitors the services of doctors' availability in the absence of records.

Department in its reply (October 2020) ensured that duty rosters would be maintained.

4.2.3 Availability of Intensive Care Units and Critical Care Units (ICU/CCU)

Intensive Care Units (ICU) in a DH is essential for providing minimum assured services as per the IPHS norms for DHs having more than 100 beds and is desirable if the bed strength is more than 50 in the case of sub-DHs. Out of four test checked DHs, only DH Kohima has the ICU/CCU facility. Since there is no ICU/CCU facility in DHs Wokha, Tuensang and Phek, there is every likelihood of patients being referred in an emergent condition to DH Kohima for treatment or other private hospitals in Kohima where such facilities are available. The DHs Wokha, Phek and Tuensang did not maintain the number of cases referred to higher facilities during emergent situation. Similarly, DH Kohima also did not maintain cases referred from other health units in emergent situations to ICU/CCU.

Department replied (October 2020) that all the DHs had set up ICU/ High Dependency Care Unit (HDU) during the on-going COVID-19 pandemic. However, the Department did not clarify whether the setting up of ICU/HDU was a temporary or permanent measure.

4.2.4 Availability of Emergency Services

Emergency services in DH are provided by Emergency wards or Emergency Room (ER) which is a medical treatment facility specialising in acute care of patients who reach in emergency situations. IPHS envisage 24x7 operational emergency with dedicated emergency room in every DH.

Emergency room was available in all test-checked DHs. However, certain facilities envisaged were not available in any of the test checked DHs.

(i) Emergency shall have dedicated triage, resuscitation and observation area and screens shall be available for privacy. Out of the test-checked DHs, none of the DHs have dedicated triage facility.

(ii) It is also envisaged that 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. None of the DHs have any separate provisions.

4.2.5 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.

It was observed that trauma care centre was not available in any of the test-checked DH. In the absence of a functional trauma care centre in the test-checked DHs, patients with serious injuries were referred out to higher facilities in Kohima thus, losing the golden hour, to save the life of the victims.

4.2.6 Radiology Services /Imaging Equipment

4.2.6.1 Availability of X-Ray Equipment

Diagnostic imaging allows for detailed information about structural or disease-related changes in body with the ability to diagnose during the early stages. IPHS prescribe two to four types of X-ray machines of varying penetration and radiation levels for different radiological investigations. Details of availability of radiology/imaging equipment may be seen in **Table 4.6**.

Table 4.6: Availability of radiology/imaging equipment

Equipment	Requirement as per IPHS Norms (201 - 300 bedded	Availability in DH Kohima	Requirement as per IPHS Norms (up to 100 bedded)	Availability		
				DH Phek	DH Tuensang	DH Wokha
500MA X-Ray	1	1	NA	0	1	0
300MA X-Ray	1	0	1	1	0	0
100 MA X-Ray	1	1	1	1	1	1
60 MA X-Ray	1	0	1	0	0	0
Dental X-ray	1	1	1	0	0	0
Ultrasonography (USG)	3	2	2	1	1	1
ECG machine computerized	1	0	1	0	1	0
Cardiac Monitor	8		3	0	4	2
Cardiac Monitor with defibrillator	2	2	2	0	2	0

Source: Records from District Hospitals

It was observed that except DH Kohima, no other DHs were having all types of X-ray machines as required under IPHS norms. Similarly, required number of other imaging equipment like ultra-sonography machine, dental X-ray and mammography unit were not available in test checked DHs.

Since equipment as per the norms were not available, expected services could not be extended to the patients. This was despite availability of funds with the department.

4.2.6.2 Regulatory requirement for establishing Diagnostic Radiology facilities and its compliance

For establishing X-ray and CT scan unit in any health facility, license from the Atomic Energy Regulatory Board (AERB) is necessary under Rule 2 & 3 of Atomic Energy (Radiation Protection) Rules 2004. As per IPHS norms, lay out of the X-Ray room shall be as per AERB norms and Lead Aprons and Thermos Luminescent Dosimeters (TLD) badges shall be available with all the staff working in X-ray room. TLD badges should be sent to BARC on regular basis for assessment of radioactivity.

Audit scrutiny revealed that three[4] out of four DHs did not have the license to operate X-Ray machine and TLD badges were not provided to the staff working in X-Ray room. X-Ray

[4] DH Wokha, Tuensang and Phek

rooms were also not as per AERB norms. Photograph of the two DHs test checked are shown below.

	
Photograph 4.2: Main X-Ray room, DH Phek (Photograph taken on 04/12/2019)	**Photograph 4.3**: X- Ray machine attached to DH Wokha (Photograph taken on 14/01/2020).

Further, it was observed that:

- Structural shielding was not provided for walls, doors, ceiling and floor of the room housing the X-ray equipment in all the DHs. Instead of double walled concrete separation for X-ray room, partition with wooden screens was provided posing threat of radiation to X-Ray technicians in DH Phek.
- X- Ray machine attached to DH Wokha is located in the ground floor of the erstwhile Trauma Centre which was not easily accessible to patients and was non-functional since August 2019.
- Radiation symbol and warning placards in local languages are to be placed outside the X-ray room door, but these were not found in any of the test checked DHs.
- The QA tests should be carried out at regular intervals (periodicity-once in two years) and after repairs of the equipment or when equipment malfunction is suspected. This was also not carried out in test checked DHs.
- Though Dental X-ray is provided to DH Phek, it was non-functional since April 2014 and further action taken could not be ascertained.

In DH Kohima, approval of the AERB was available and staff were provided with TLD badges. TLD badges were also periodically checked and whole body radiation dose was found to be within the permissible limits during 2014-2018.

Department replied (October 2020) that all the DHs were registered with AERB (eLORA) and two of the DHs had obtained licence to operate and process to obtain licence was going on for other DHs. The Department did not name the two DHs which had obtained licence to operate radiological/imaging equipment and documentary evidence in support of the licence also was not provided. Department did not comment on non- adoption of AERB norms for X- Ray rooms and security of X-ray technicians.

4.2.6.3 Diagnostic Services in Emergency cases

Assessors Guide Book for Quality Assurance in District Hospital (2013) requires that 24x7 emergency lab services are available for selected tests of Haematology, Biochemistry, Serology and Radiology Services. All the test checked DHs stated that they were providing 24x7 emergency services in laboratory and radiology departments.

Audit observed that in all the test checked DHs, laboratory and radiological services generally remain closed after OPD hours. It was stated that in DH Kohima, lab technicians were assigned emergency duty (24x7) which were monitored internally. However, neither the duty roster of LTs of emergency duty nor the monitoring report of service review was made available to audit. In other three test checked DHs, it was stated that LTs and X-ray technicians were available at call after OPD hours. However, there was no record of laboratory or radiological tests carried out in emergency cases or duty rosters of LTs and X-Ray technicians. Laboratory register furnished to audit also did not indicate whether tests were conducted on an emergency.

In the absence of sufficient records, non-availability of adequate emergency laboratory and radiological services after OPD hours could not be ruled out.

Department replied (October 2020) that laboratory and radiology services were provided 24x7 and technicians were assigned emergency duty. For non-maintenance of records, Department stated that direction would be issued to maintain records of radiology and laboratory tests carried out in emergency.

4.2.6.4 Quality Assurance of Laboratory reports

IPHS guidelines stipulated that external validation of laboratory reports is to be done on a regular basis to ensure that the patients were given accurate reports.

All laboratories in DHs would be encouraged to achieve NABL accreditation. A system of regular sample cross-checking of diagnostic results with identified reference laboratories is necessary for this.

Microbiology Department of the DH Kohima has ISO Certification which is valid up to December 2020. Other DHs did not have NABL certification. DH Phek quarterly sends HIV test samples from ICTC to State Reference Laboratory (SRL) Kohima for proficiency testing (20 samples during 2014-19). However, other samples of laboratory tests conducted were not sent to State Reference Laboratory (SRL) Kohima for cross-checking of results. Quality assurance in other DHs were not carried out by sending samples to SRL or other peer DHs.

Department responded (October 2020) that direction would be issued for regular sample checking for quality assurance by sending samples to SRL Kohima.

4.2.6.5 Non-calibration of Medical Equipment

Calibration of an equipment is carried out to ensure that overall functionality is accurate and reliable. As per the terms and conditions of agreement (October 2016) between M/s Faber Sindoori Management Services Private Limited, Chennai and H&FW Department, annual third party Audit by NABL accredited laboratory was to be carried out for all calibration process by the service provider.

Audit observed that test checked DHs did not maintain the status of calibration of equipment carried out by the service provider. Further, annual third party audit of calibration process carried out was not done by NABL accredited laboratory.

In the absence of vital records of calibration, there was no reasonable assurance on accuracy of medical equipment and their ability to provide correct overall output/test results.

The Department assured (October 2020) that necessary instructions would be issued to all health units to adhere to the quality protocols of calibration of equipment and annual third party Audit by NABL accredited laboratory.

4.2.7 Shortage of Laboratory services

As per the IPHS norms, District Hospital Laboratory shall also serve the purpose of public health laboratory and should be able to do all tests required to diagnose important diseases from public health point of view and recommended 97 tests in 12 specialities in a DH and 51 tests in 11 specialities[5] in Sub-DHs. Audit observed that number of laboratory services to be provided in DHs were much below the prescribed norms in the test-checked hospitals as tabulated in **Table 4.7**.

Table 4.7: Availability of laboratory services to be provided in DHs

Name of Services	As per IPHS norms for 200 to 300 beds		No. of Services to be provided as per IPHS norms up to 100 beds	Services provided by		
	No. of Services to be provided	Services provided by DH Kohima		DH Wokha	DH Phek	DH Tuensang
Diagnosis Services	97	61	51	42	35	37
Percentage of test carried out	-	62.88	-	82.24	68.62	72.55

Source: Records of DHs

Details of laboratory tests carried out in each DH may be seen at **Appendix II.** As can be seen from the table above, out of 97 tests to be provided, DH Kohima is providing only 61 tests (62.88 *per cent*). In Sub-DHs, DH Phek provides least number of services.

Department did not furnish (November 2020) specific replies on non-conduct of required number of laboratory tests in DHs as per IPHS norms. On implementation of Free Diagnostic Service Initiative of NHM, Department replied that it was planning to implement in 11 DHs as first roll out. However, the Department did not furnish any time frame for its implementation.

4.2.7.1 Imposition of non-uniform user charges

A package of essential diagnostics, if available free of cost in public health facilities, would reduce high pocket expenditure by patients for diagnostics. Audit scrutiny revealed that all the health facilities are charging user charges for diagnostic tests[6] carried out in government facilities. The amount charged for some of the laboratory tests are as shown in **Table 4.8**.

Table 4.8: The amount charged for some of the laboratory tests

(Amount in ₹)

Type Service/Test	DH Kohima	DH Phek	DH Tuensang	DH Wokha
Complete Haemoglobin	300	200	70	150
Urine	100	100	50	50
LFT/KFT	500	500	350	400
USG	400	200	500	400

(Source: District Hospital records)

[5] Clinical Pathology, Urine Analysis, Pathology, Microbiology, Serology, Bio-Chemistry, Cardiac Investigations, Ophthalmology, ENT, Radiology, Endoscopy and Respiratory Services. For DHs, Blood Bank is also required.

[6] Cases of exempted categories like JSSY/ HIV etc. are discussed separately in this report.

As can be seen from above, there was no uniform pattern of charges across the test checked districts and H&FW Department also did not notify the rate to be charged in Government facilities. It was also noticed that none of the test checked DHs displayed the user charges at the entrance of the hospital.

Department replied (October 2020) that adoption of uniform user charges across the DHs shall be analysed and will be notified.

4.2.8 Shortage of Lab Technicians for diagnosis

For ready and timely availability of affordable diagnostic results, Lab Technicians (LTs) and equipment available in a facility play a key role for in-house laboratories for taking samples and carrying out all prescribed investigations.

Examination of records revealed that there was shortage of human resources in all the four test checked DHs. As per IPHS norms, number of Laboratory Technicians (Lab + Blood storage) required for a facility up to 100 bed strength is five. However, there was shortage of three LTs in DH Wokha and DH Tuensang and two LTs in DH Phek.

Availability of human resources in respect of diagnostic services in DH Kohima, DH Phek, DH Tuensang and DH Wokha is shown in **Table 4.9**.

Table 4.9: Availability of human resources in respect of Diagnostic services in DH Phek, DH Tuensang, DH Wokha and DH Kohima

Type of HR	Requirement as per IPHS norms (up to 300 bedded)	Availability in DH Kohima as on 31/3/2019	Requirement as per IPHS norms (upto 100 bedded)	Availability as on 31/03/2019		
				DH Phek	DH Tuensang	DH Wokha
Pathologist	3	1	1	1	1	1
Laboratory Technician (Lab + Blood storage)	12	18	5 (2 +3)	3	2	2
Cyto Technician	1	0	-	-	-	-

Source: Records of the respective DH

It was stated by MS, DH Wokha that one pathologist was posted to the facility only in May 2018.

4.2.9 Operation Theatre Services

One of the essential services that is being offered in DHs is Operation Theatre Services. Audit observed that major and minor operations were carried out in all the test checked DHs while only minor operations were carried out in CHC Viswema and PHC Botsa. Number of operations carried out in test checked DHs are as shown in table 4.10 below:

Table 4.10: Number of operations carried out in test checked DHs

Year	DH Kohima		DH Phek		DH Tuensang		DH Wokha	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor
2014-15	1763	2073	42	207	115	303	168	352
2015-16	1703	1839	30	248	153	208	146	210
2016-17	1914	2030	34	236	113	317	268	302
2017-18	2034	3735	35	142	50	314	213	352
2018-19	1713	3405	14	576	68	415	162	314

Source: HMIS and Hospital records

As can be seen from above table, number of major operations carried out in DH Kohima was much higher than the number carried out in other test checked DHs. This was mainly due to functioning of five numbers of Operation Theatres (other three test checked DHs had only one Operation Theatre each) and higher number of specialists/surgeons in DH Kohima as compared to other three test checked DHs. It was also observed that in three test checked DHs where bed strength is less than 100, major operations were mainly carried out for Gynaecology-Hysterectomy. For instance, during 2018-19, out of 14 major operations carried out in DH Phek, nine (64.28 *per cent*) were in Gynaecology & Hysterectomy. Similarly in DH Wokha, 64.20 *per cent*[7]and in DH Tuensang, 95.58 *per cent*[8] were in Gynaecology- Hysterectomy. Facility for Ophthalmic & ENT surgery were available only in DH Kohima. This was mainly due to non-availability of Specialist medical officers, shortage of equipment and infrastructures in other three test checked DHs. This was despite availability of funds with the Department.

Department accepted (October 2020) the audit findings.

4.2.9.1 Documentation of OT procedures

NHM Assessor's Guidebook for Quality Assurance in DHs (2013) prescribes for maintenance of surgical safety checklist, pre-surgery evaluation records and post-operative notes for all OTs carried out in DH.

All the test checked DHs replied that they maintain surgical safety check list, pre and post-operative notes for operations. However, except DH Kohima, other DHs did not furnish documentary evidence in support of maintenance of surgical safety check list, pre-surgery evaluation and post-operative notes.

In the absence of reliable records, the reliability of appropriate documentation in OT procedures cannot be assured.

Department replied (October 2020) that records/documents were maintained for surgical safety check list, pre-surgery evaluation and post-operative notes. However documentary evidence in support of the reply was not furnished to Audit.

4.2.10 Indicators of availability and accessibility to services

Citizen charter consisting of vision & mission statements, details of business transacted by the organisation, details of clients; details of services provided to each client group; details of grievance redressal mechanism and how to access it; and expectations from the clients is necessary for information to patients and to ensure their adequacy in health facilities.

For information of services available, each health facility has to display Citizen Charter at OPD and entrance in local language including patient rights and responsibilities. For easy access to these facilities, signage is also to be installed at prominent places for the purpose of informing and guiding a person inside a hospital's premises.

In the test checked DHs, status of display of citizen charter, signage, patient rights, availability of grievance redressal mechanism etc. is shown in **Table 4.11**.

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[7] Total major operations – 162, Operations related to Gynaecology- Hysterectomy- 104

[8] Total major operations -68, Operation in Gynaecology- Hysterectomy -65

Photograph 4.4: Signage showing way to different wards in DH Wokha

Photograph 4.5: Citizen Charter displayed near OPD of DH Kohima.

Table 4.11: Status of display of citizen charter, signage, patient rights, availability of grievance redressal mechanism etc.

Indicators	DH Wokha	DH Phek	DH Tuensang	DH Kohima	Remarks
Citizen Charter	Yes	Yes	Yes	Yes	Citizen Charter displayed in DH Kohima is very old, rusted and does not contain all necessary information
Signage	Yes	Yes	Yes	Partial	Display of signage in DH Kohima though available, was not placed in prominent areas within the hospital premises for easy access.
Patient rights	Yes	Yes	Yes	No	
Display of services	No	Partial	Partial	No	
Display of entitlements	Partial	Partial	Partial	Partial	
Information in local language	No	Partial	No	No	
Grievance & redressal Cell	No	No	No	No	Suggestions/Complaint boxes were provided at various locations in the hospital.
Patient satisfaction survey	Yes	No	No	No	DH Wokha conducted patient satisfaction survey only once during 2014-19.
Web site of the Hospital	No	No	No	No	-

Source: Departmental records

Department replied (October 2020) that it will initiate steps for displaying services available and facilities admissible for patients.

4.2.11 Grievance Redressal Cell

Grievance redressal/complaint cell is to be formed in all facilities as per IPHS norms. H& FW Department notified (October 2013) and re-organised committees in the State, District and DHs for handling grievances & redressal and to strengthen grievance redressal mechanism. As per this notification, Medical Officer in charge of the DH will be the chairman of the Committee and was supposed to meet once in every month.

Examination of records revealed that mechanism for addressing the grievances/complaints was not constituted in any of the test checked DHs, though complaint/suggestion boxes were placed at various locations in the hospitals. However, number of complaints/suggestion received, action taken on such suggestions/ complaints were not on record. In DH Wokha, during 2017-18, 31 number of suggestions were received which were mainly on neatness of the facility. This issue of neatness is now addressed through comprehensive renovation of DH Wokha.

Department replied (October 2020) that direction will be issued to reactivate grievance redressal cell/committee in all the districts.

4.2.12 Fire Safety norms

National Disaster Management Guidelines – Hospital Safety (2016) laid down provisions for establishing the minimum requirements for a reasonable degree of safety from fire emergencies in hospitals, such that the probability of injury and loss of life from the effects of fire are reduced. Ministry of Health & Family Welfare also reminded (October 2016) to all States & Union Territories to adhere to fire safety norms as per the National Building Code and to obtain NOC from Fire Department. It also stressed for installation of fire signage and evacuation route in vernacular language and conduct routine fire drills. National Building Code of India 2016, Part 4, Fire and Life Safety required that fire extinguishers must be installed in every hospital, so that the safety of the patients/attendants/visitors and the hospital staff may be ensured in case of any fire in the hospital premises. Further, Assessor's Guidebook for Quality Assurance in District Hospitals, 2013 stipulates that hospital should have a plan for prevention of fire. Also, the facility should have a system of periodic training of staff and regular conduct of mock drills for fire and other disaster situation.

Scrutiny revealed that none of the test checked DH had a certificate for fire safety from the Fire Department. Physical verification of test checked hospitals revealed that the main building of DH Phek and OT/ICU of DH Kohima were functioning in some multi-storey buildings. There was no plan for prevention of fire in any of the test checked hospitals. System for auto detection of fire was also absent in all the test checked DHs. Evacuation area in the case of fire is to be marked with illuminated exit sign. This was not being followed in any of the DHs. Satisfactory supply of water exclusively for the purpose of firefighting shall always be available in the form of underground static storage tank with arrangements of replenishment. Dedicated water tank for firefighting purpose was not constructed in any of DHs test checked. Hose Boxes with Delivery hoses, though available in DH Kohima, it was not supported with underground water tank. Fire & Emergency Department had inspected the DH Wokha (September 2018) and was advised to comply with National Building Code 2016. It was also mentioned that entry & exit routes should be clearly marked and other fixed installations such as smoke and heat detectors,

sprinklers etc. should also be installed. However, DH Wokha did not comply with the suggestions of Fire & Emergency Department.

Periodic training of staff and regular conduct of mock drills for fire and other disaster situation was not conducted in DHs Tuensang, Phek and Wokha. However, DH Phek stated that mass mock drills were conducted on 'Fire Safety Week' by the Fire Department. DH Kohima stated that periodical mock drills were conducted on fire and other disaster situations but number of mock drills conducted was not on record.

Department replied (October 2020) that directions has been issued to all districts to obtain NOC/Fire Safety Certificate from the Fire Department. However, Department did not comment on periodic training of staff and regular conduct of mock drills on fire safety.

4.2.13 Conclusion

Burn ward, psychiatry indoor services and accident & trauma ward were not available in any of the test checked DHs. Ophthalmology indoor services, indoor physiotherapy and dialysis services were not available in DHs Wokha, Phek and Tuensang. All laboratory and diagnostic services as per IPHS norms were not provided by the test checked DHs. There was no uniform pattern of user charges for diagnostic services across the test checked districts and H&FW Department also did not notify the rate to be charged in Government facilities. There was wide gap in average number of laboratory tests conducted per technician across DHs. Three out of four DHs did not have the license to operate X- Ray facilities and DHs did not have all 'X' Ray equipment as per norms. DHs did not maintain the status of calibration of equipment and annual third party Audit by NABL accredited laboratory.

Further, fire safety of patients, attendants, medical personnel and the hospital buildings had not been ensured by the concerned hospital administration. DH Wokha had not complied with findings of Fire Safety Inspection done. None of the DHs had dedicated water tank for firefighting purposes.

4.2.14 Recommendations

(i) The OPD and IPD Services provided in DHs may be reviewed to improve the number of services and facilities as per norms.

(ii) User charges for diagnostic services in DHs may be notified and streamlined for all DHs in the State.

(iii) Availability of equipment as per the IPHS norms may be ensured for quality services.

(iv) Calibration of diagnostic equipment may be implemented for reliable diagnostics.

(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. Fire safety audit be carried out of all health facilities in the State, including the Special New Born Care Units (SNCU) in DHs.

CHAPTER-5
SUPPORT SERVICES

CHAPTER 5: SUPPORT SERVICES

5. 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 and quality 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.

Audit observed that none of the DHs adhered to the prescribed protocols for storage of drugs. However, temperature controls/refrigerators were used for storage of vaccines relating to immunisation programmes in all the test checked Health units and Central Stores. In DH Phek, though there was no separate designated area for controlled, dangerous and restricted medicines, however, it was seen that drugs were stored separately. Such arrangements were not made in other test checked DHs. Deficiencies in storage of drugs in the test checked hospitals is shown in **Table 5.1**.

Table 5.1: Deficiencies in storage of drugs in the test checked hospitals

Sl. No.	Parameters	No. of Hospitals having deficiency	Probable impact of not adhering to parameter
1	Air-conditioned storage/pharmacy	4	Loss of efficacy and shelf life of drugs.
2	Labelled shelves/racks	4	High turnover time in disbursement of drugs.
3	Away from water and heat	4	Loss of efficacy and shelf life of drugs.
4	Drugs stored away from walls	4	-do-
5	24- hour temperature recording of cold storage area	4	-do-
6	Display instructions for storage of vaccines	4	-do-
7	Functional temperature monitoring device in freezers	4	-do-
8	Maintenance of temperature chart of deep freezers	4	-do-
9	Expired drugs stored separately	4	Mixing of expired drugs with usable drugs

Source: Physical verification of test checked hospitals

It can be seen from the above table that major deficiencies were observed in the storage of drugs in all test checked DHs.

Photographs showing deficiency in storage of drugs in DHs are given below:

Photograph 5.1: Storage of medicines & Consumables in DH Phek. Photograph taken on 06/12/2019.

Photograph 5.2: Medicine stored in DH Wokha where medicines are stored near Walls and on floor.

Photograph 5.3: Storage of Ayush and other Medicines in DH Wokha

Photograph 5.4: Storage of medicines in emergency Department of DH Wokha

Photograph 5.5: Storage of Medicines at DH Tuensang. Photograph taken on 01/02/2020

Photograph 5.6: Seepage in an entire wall of storeroom where medicines are stored in DH Kohima

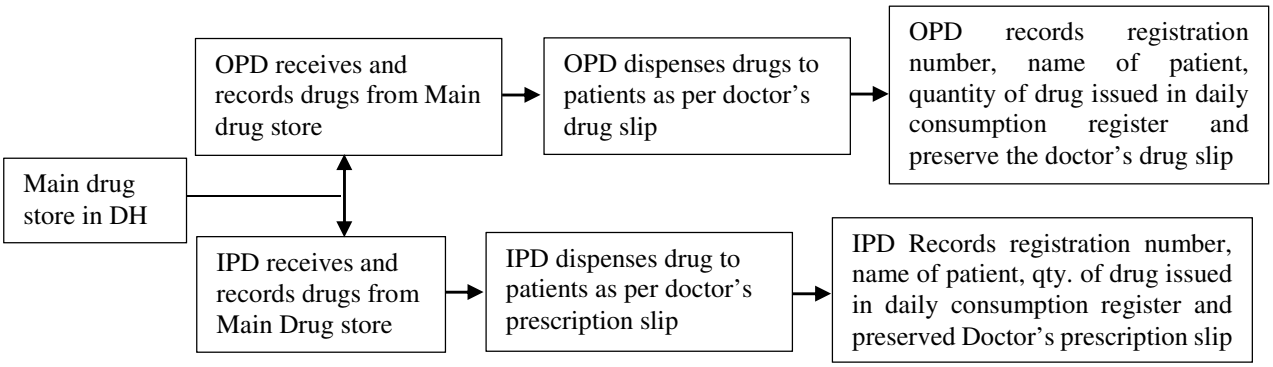
Department replied (October 2020) that all health units would be instructed to make arrangements for storage of drugs as per the guidelines and training would be imparted to pharmacists/ store-keeper and cold chain officers in the districts on store management.

5.2 Utilisation of Drugs by the Health Units

Financial rules stipulate that all items received and issued should be entered in stock account on the date the transaction takes place.

The process of dispensing of drugs in hospitals is shown in the **Chart 5.1**.

Chart 5.1



Audit observed discrepancies in documentation in receipt and dispensing of drugs to patients by OPD and IPD sections of the four selected hospitals as detailed in **Table 5.2**.

Table 5.2: Status on maintenance of record relating to drugs

Sl. No.	Parameters on maintenance of records	No. of DH not documenting	No. of CHCs and PHC not documenting
1	Stock Register of Main drug store countersigned by DDO	2 (DH Kohima, DH Tuensang)	2
2	Maintenance of stock register on drugs received from Main store by IPD and OPD	4	2
3	Documenting dispensing of medicine by OPD	4	2
4	Documenting dispensing of medicine by IPD	4	2
5	Preservation of Drug slip by OPD	4	2
6	Preservation of Doctors prescription slip of IPD	4	2

Source: Records of DHs

It can be seen from the table above that in all the four test checked DHs, neither the OPDs nor the IPD wards maintained records on drugs received by them from main drug store of the hospital. Further, records of dispensing of drugs to the patients were also not maintained by the IPDs and OPDs of all DHs.

In the absence of ward-wise stock register on drugs, patient wise distribution and utilisation of drugs issued from main store to the health facility could not be verified in audit. Thus, pilferage of drugs could not be ruled out in the DHs.

Efficient mechanism needs to be evolved for proper documentation and evidencing of drugs issued from main store of the facility to the inpatient area and OPD patients.

Department replied (October 2020) that store-keepers and pharmacists would be instructed to maintain proper records on receipt and utilisation of drugs.

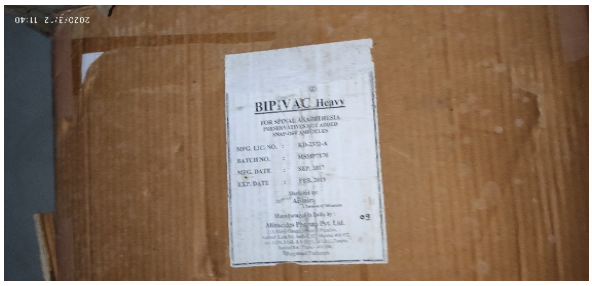
5.3 Management of expired drugs and sub-standard quality drugs

Operational Guidelines for Free Drug Services Initiative issued by the Ministry of H&FW (June 2015), require that an analysis of short expiry drugs would be conducted on a fortnightly basis, based on consumption patterns in all HUs/ facilities. The facility would utilize such drugs on priority. Such a review mechanism if conducted at the warehouse level, such drugs could be redistributed to nearby facilities in need.

Audit scrutiny revealed that fortnightly review of the expiry of drugs was not carried out in any of the test checked DHs. Therefore, quantity and type of medicines expired without usage could not be analysed in audit. There were also no records pertaining to the drugs received and subsequently recalled back due to substandard quality.

Verification of the stores of the test checked facilities revealed that huge quantities of expired drugs were stored and photographs of the same are depicted below.

Photograph 5.7: Expired Medicines stored in Store Room of DH Kohima. Photographs taken on 12/03/2020



(i) Bipivac- Spinal Anastasia, Expiry date February 2019

(ii) Omeputcapsules, Expiry date October 2018

(iii) Expired Ornidazole Tablets at DH Kohima

(iv) Expired Medicines stored at DH Tuensang

Department replied (October 2020) that over indenting leading to expiry of huge quantity of drugs would be resolved once the supply chain management system is implemented. It was also stated that instructions would be issued for fortnightly review of short shelf life drugs.

5.4 Infection Control

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

5.4.1 Formation of Hospital Infection Control Committee

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

Verification of records in the selected four DHs and one CHC revealed that HICT was not constituted in the four test checked DHs and one CHC, while HICC was not constituted in one DH (Tuensang) and one CHC (Viswema) as shown in **Table 5.3**.

Table 5.3: Formation of HICT and HIC

Particulars	DH Kohima		DH Tuensang		DH Phek		DH Wokha		CHC, Viswema (Kohima Dist.)	
	Yes / No	Date/ year	Yes/ No	Date/ year	Yes/ No	Date/ year	Yes/ No	Date/ year	Yes/ No	Date/ year
HICT	No	-	No	-	No	-	No	-	No	-
HICC	Yes	-	No	-	Yes	Aug, 2015	Yes	2017	No	-

Source: Records from DHs

Absence of Infection Control Committee and team resulted in ineffective assessment of infection prevention and control mechanism which is crucial for providing high quality health care for patients and a safe working environment for healthcare professionals.

Department responded (October 2020) that instructions had already been issued for constitution of HICC/HICT.

5.4.2 Standard Operating Procedure for Infection Control

NHM Assessor's Guidebook requires DHs and CHCs to frame a schedule of procedure to be followed by the health care facilities known as Standard Operating Procedures (SOPs). Audit observed that none of the selected DHs and CHCs had framed SOPs for infection control.

Non-availability of SOPs resulted in lack of structural response to issues of hygiene and infection control in the selected DHs and CHCs which is discussed below:

5.4.2.1 Checklist for hygiene and infection control

NHM Assessor's Guidebook requires that Infection Control policies are to be framed, practised and monitored by HICC. The role of HICC is to implement the infection control programme and polices. Further, for cleaning and disinfection of patient care areas, standard practices be followed through maintenance of a checklist for hygiene and infection control.

Verification of records revealed that only DH Kohima framed checklist for effective monitoring of hygiene and infection control in the hospitals. Details are shown in **Table 5.4**.

Table 5.4: Availability of checklist for effective monitoring of hygiene and infection control in selected DHs

Particulars	DH Kohima	DH, Tuensang	DH, Phek	DH, Wokha
Checklist for Housekeeping (hygiene)	Exists only from December 2019	No	No	No
Checklist for Disinfection	-do	No	No	No

Source: Hospital Records

In the absence of checklist for effective monitoring of hygiene and infection control in various departments of the hospitals, audit could not derive an assurance on the quality of hygiene and infection control mechanism available in these hospitals.

5.4.2.2 Microbiological Sampling

As per National Centre for Disease Control (NCDC) guidelines, routine environment sampling (surface and air sampling) for epidemiologic investigation are to be done in all hospital departments. Verification of records revealed that microbiological sampling for surface was done in two DHs[1] and CHC during the period of audit. None of the DHs had done air sampling during the period of audit. DH Kohima stated to have carried out air sampling in 2020, in Operation Theatres. Further, none of the hospitals could furnish records on epidemiological investigation on air and surface sampling conducted by them.

5.5 Laundry Services

5.5.1 Availability of linen

IPHS prescribed 21 different types[2] of linen that are required to be provided for patient care services of hospitals with 101 beds and more.

Examination of records of the test checked DHs revealed shortage of different types of linen as shown in **Table 5.5.**

[1] DH, Wokha and DH Kohima

[2] Abdominal sheets for OT, Bed sheets, bedspreads, Blankets, Doctor's overcoats, Draw sheets, Hospital worker OT coats, leggings, Macintosh sheets, Mats (Nylon), Mattresses (foam) for adults, Mortuary sheets, Perennial sheets for OT, Pillows, Pillow cover and table cloth.

Table 5.5: Statement showing shortage/non-available of types of linen in the selected hospitals.

Type of linen	51 to 100 bedded sub DHs				201 to 300 bed DHs	
	Norm	Actual available			Norm	Actual available in DH Kohima
		DH Tuensang	DH Wokha*	DH Phek		
Bedsheets	400+ 200 (desirable)	250	90	180	1200	1500
Bedspreads	600	300	34	50	1800	1000
Blankets Red and blue	30	150	81	77	100	300
Draw sheet	75	50	-	0	150	20
Doctor's overcoat	30	30	-	0	90	0
Hospital work over coat	200	200	-	0	400	0
Patients house coat (for female)	300	150	-	5	900	500
Patients Pyjama(for male) Shirt	200	150	-	5	400	500
Over shoes pairs	60	25	-	0	100	0
Pillows	150	200	109	53	450	70
Pillows covers	300	150	340	100	900	300
Mattress(foam)Adult	100	100	15	30	300	250
Paediatric Mattress	16	50	-	0	40	0
Abdominal sheets for OT	50	100	-	0	200	30
Pereneal sheets for OT	50	300	-	0	200	0
Leggings	80	20	-	0	150	0
Mortuary sheet	30	5	-	0	70	0
Mats (Nylon)	50	0	-	0	200	0
Mackintosh sheet (in meters)	150	40	-	0	300	5

Source: Replies to questionnaires

****Complete information on availability of different types of linen in DH Wokha was not furnished to audit.***

It can be seen from the table that out of 19 items of linen, one to 13 items were not available with the DHs and CHC. The shortage was more than 50 *per cent* in 6 to 11 items in the DHs and CHCs.

Department replied (October 2020) that rational indent/ issue of linen would be done as per the hospital strength in future.

5.5.2 Washing of linen

As per the IPHS, laundry facility should be available in the hospitals to provide well washed and infection free linen to patients.

Audit observed that out of four selected DHs, all hospitals engaged outsourced agencies/dhobi for laundry services up to 2017. However, after 2017 three hospitals[3] commenced in-house laundry services, whereas DH Kohima continued engaging dhobi for laundry service.

[3] DHs Wokha, Phek and Tuensang

However, none of the test checked DHs had formulated guidelines or SOP for handling, washing and disinfecting of linens. Audit further observed that:

- Physical verification of the site for laundry of DHs (including DH Kohima) revealed that linens of the hospital were washed using detergents and sun dried. However, blood stained linens were bleached before washing. Safety measures of persons handling the linen was not ensured.
- Waste water was let out in public drain without any disinfection or treatment.
- None of the test checked DHs pre-treated soiled linen (contaminated with blood and body fluids) before separating them and delivering for laundry service.
- Ward or department wise colour marking of linen was not seen which indicates that linen from all wards (including that of departments handling infectious disease) were washed together with linen of other departments exposing them to contamination.

Photograph 5.8: View inside linen washing room in DH Wokha.

(i) Three types of coloured plastic containers were used for different types of waste management.

(ii) Washing machine was used to clean sluiced linens

(iii) Detergent kept for washing of linen.

Photograph 5.9: Linen washing area of DH Kohima (premises of Dhobi)

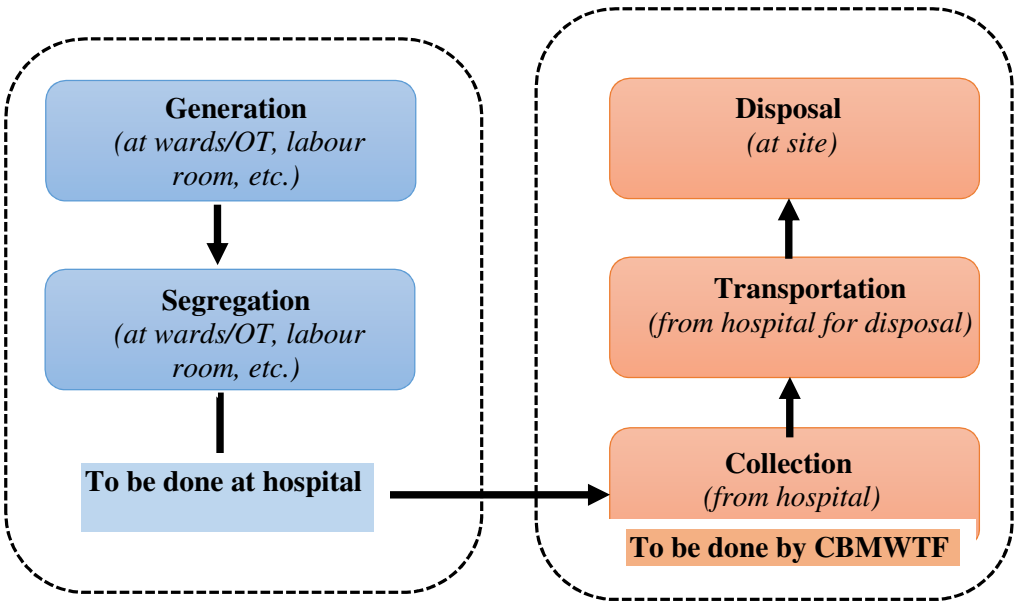
(i) Linen being soaked and hand washed by Dhobi of DH Kohima. Waste water let in public drain

Department replied (October 2020) that based on the audit comments, SOP for handling, washing and disinfecting of linen had been prepared which would be circulated to health units for compliance.

5.6 Bio-Medical Waste Management

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

Figure 5.1: Stages of bio-medical waste management



5.6.1 Authorisation for generating Bio-Medical waste

BMW Rules required that hospitals generating BM waste should obtain authorisation from the State Pollution Control Board (SPCB). Department replied (October 2020) that authorisation from the State Pollution Control Board had been obtained for all health units in the State. However, Department did not furnish documentary evidence obtained from SPCB to audit for verification.

5.6.2. Segregation and disposal of Bio-Medical waste

BMW rules require hospitals to segregate different categories of BM waste 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 test checked DHs, CHC and PHC segregated solid BM waste at the point of generation in colour coded bins. Method of collection and disposal of the BM waste by the four DHs is shown in **Table 5.6**.

Table 5.6: Method of collection and disposal of solid BM waste in the test checked DHs

Sl. No.	Parameters of biomedical waste management	DH Kohima	DH Wokha	DH Phek	DH Tuensang
1.	Segregation of bio waste at the point of generation in colour coded bins	Yes	Yes	Yes	Yes
2	Collection of bio waste from the DHs by CBMWTF	Outsourced	Disposal done by hospital	Disposal done by hospital	Disposal done by hospital
3	Disposal of human anatomical waste and other solid biological waste.	Outsourced but not segregated	Deep burial	Deep burial	Deep burial

4	Disposal of sharps and other hazardous waste	-do-	Deep pit	Deep burial	Deep burial
5	Disposal of liquid biological waste	Discharged into drain, untreated	Disinfected and discharged into drain	Disinfected and discharged into drain	Discharged in drain, untreated
6	Chemical waste	Discharged into drain	Discharged in drain	Discharged into drain	Discharged into drain

Source: Replies furnished by Department and physical verification

It can be seen from the table above that except DH Kohima, all the other three district[4] hospitals did not engage any agency or CBMWTF for disposal of solid BM waste. It was done by the hospital engaging its own staff in the hospital premises, following the methods of solid bio-waste disposal.

However, DH Kohima engaged Kohima Municipal Council (KMC) to collect the BM waste from the hospital site for disposal. Audit observed that segregation of BM waste was done by the wards/departments of hospital as per provisions of the BMW rules. The BM waste was collected from the wards/departments and dumped at a common waste pit of the hospital without segregation or without colour coded bags. This defeated the very purpose of segregation of BM waste at the point of generation. Further, it was also seen that KMC collected the BM waste from the waste pit and dumped in the common public waste dumping site of KMC.

Photographs 5.10: Colour coded plastic containers are used for collecting different types of Hospital waste in DH Wokha

Photograph 5.11: Effluent plant without lids – DH Wokha

Photograph 5.12: Hospital waste burnt in open space at DH Wokha

Photograph 5.13: DH Kohima waste (in black plastic bags) in dump pit. BM waste dumped in the common collection point without segregation for pickup by KMC.

[4] DH Tuensang, Phek and Wokha

Photograph 5.14: KMC picks up unsegregated BM waste from DH Kohima dump pit

Photograph 5.15: KMC dumps the BM waste at the common dumping site of Kohima

In respect of liquid chemical and bio-medical waste generated in health care facilities, BMW Rules mandated segregation of the waste at source and its pre-treatment or neutralisation prior to mixing with other effluent generated from health care facilities.

However, except DH Wokha, other test checked hospitals and CHCs did not establish Effluent Treatment Plants (ETPs) for pre-treatment of the liquid chemical and bio-medical waste, resulting in draining of the waste into public drainage.

Thus, all the four test checked hospitals not only violated the BMW Rules but also created an environment hazardous to public health at large.

Department replied (October 2020) that colour coded bins have been distributed to all the Health Units but colour coded bags are in the process of procurement through Nagaland Health Project (NHP). It was also stated (February 2021) that construction of effluent treatment plant has been completed in DH Phek in January 2021 and is ongoing in DH Tuensang.

5.7 Ambulance Services

IPHS norms prescribes that every DH should have three ambulances if the bed strength is more than 100 and two ambulances if the bed strength is from 51 to 100. In the case of CHCs, round the clock ambulance service with basic life support should be available. It is also desirable to have an ambulance in PHCs to provide emergency services.

Position of availability of Ambulance in the State was as shown in **Table 5.7.**

Table 5.7: Position of availability of Ambulance in the State

Year	Number of Ambulance at the beginning of the year	Number purchased during the year	Total available with the Department	Number of functional Ambulance	Number of Non-functional ambulance
2014-15	75	5	80	77	3
2015-16	80	0	80	77	3
2016-17	80	1	81	78	3
2017-18	81	0	81	75	6
2018-19	81	11	92	70	11

Source: Departmental records

There are 174 facilities[5] (excluding SCs) where pregnant women report for ANC check-ups and delivery is carried out in the State.

Table 5.8 showing requirement of ambulances as per IPHS norms

Type of facility	Number of health units	Norms	Requirement as per norm
DHs with more than 100 bed strength	3	3	9
DHs with bed strength less than 100	8	2	16
CHCs	25	1	25
PHCs	138	1	138
Total			**188**

As can be seen from above table, there was shortage of 118 (62.77 *per cent*) ambulances in the State.

All test checked DHs were providing ambulance services. DHs Tuensang and Kohima have two ambulances each. One of the ambulance (NL 10 3287) attached to DH Tuensang was not used for transport of patients or JSSY beneficiaries due to unreliable condition (registered in the year 2000) of the vehicle. Out of two ambulances available in DH Kohima, one ambulance is retained for protocol duties. DH Wokha and DH Phek had one ambulance each for emergency services.

Photograph 5.16: Ambulance provided to DH Phek.

Photograph 5.17: Inside view of the Ambulance.

Ambulance attached to DH Wokha is off road since November 2019, while ambulance attached to DH Kohima is mainly utilised for carrying patients from DH to a Private Hospital for taking CT scan and back. The State had not implemented 108 Ambulance Services for patients.

Further, an ambulance is supposed to maintain a minimum of 11 (**Appendix III**) items including emergency drugs and equipment. None of the DHs maintained the stock registers of drugs and equipment available in the ambulance. Emergency drugs / first aid kits were not found during physical verification of ambulances. It was stated by all DHs that as and when necessity arises, nurses and medicines from emergency department were provided for ambulance. However, due to non-maintenance of stock register in emergency ward, actual issue of drugs to ambulances could not be ascertained in audit.

[5] 11 DHs, 25 CHCs and 138 PHCs.

Department replied (November 2020) that audit observations were noted for strict compliance and henceforth stock register would be maintained in respect of emergency medicines, equipment etc. However, Department did not offer any comment on shortage of ambulances in the State.

5.8 Availability of sufficient Water in Hospitals

As per IPHS norms, arrangement should be made round the clock for piped water supply along with an overhead water storage tank with a provision to store at least 3 days water requirement and it should have pumping and boosting arrangements. Approximately 450 to 500 litres of water per bed per day is required.

Scrutiny of records followed by physical verification revealed that sufficient water was not available in test checked DHs.

Table 5.9: Status of water availability in the test checked DHs

Name of DH	Functional bed strength	Quantity of water required per day (@450 litres per day per bed)	Capacity of the tanks available (Litre)	Remarks
DH Kohima	252	113400	Not available	Sufficient and reliable water supply not available. Depends on PHED line
DH Wokha[6]	50	22500	5000	Sufficient water not available in bore well. Depends on water harvesting structures.
DH Phek	68	30600	50000	Sufficient water available in Bore/ tube well and PHED line and rain water harvesting.
DH Tuensang	100	45000	Not available	One water harvesting structure of capacity 83250 litres is under construction. Currently water from PHED line is available.

As can be seen from above, except DH Phek, in other DHs sufficient water was not available. At DH Kohima not even overhead tank was provided and the supply depended mainly on PHED line which was not dependable in lean seasons. In Wokha, though there were three water harvesting structures of 71000 litres capacity and 5000 litres of overhead tank, scarcity of water occured during lean season.

Photograph 5.18: Water storage tanks in DH Wokha

[6] DH Wokha – Water Harvesting structures of capacity 22977 litres, main Water Tank - 23000 litres, capacity - 25485 litres capacity and 5000 litre capacity overhead tanks.

Quality of water from ring well in DH Wokha was tested thrice[7] and different parameters were found to be within permissible limits. Quality test in other test checked DHs were not carried out.

Department replied (October 2020) that in DH Tuensang, rain water harvesting tank (80K litres capacity) and tube well were constructed during October 2020. It further stated that construction of rain water harvesting tanks was in progress in all DHs.

Reply of the Department did not fully address the observations raised in Audit such as testing of quality of water and arrangement for water during lean seasons.

5.9 Conclusion

There were deficiencies in proper storage of drugs as none of the test checked DHs followed prescribed protocol for storage of drugs. Neither the OPDs nor the IPD wards maintained records on drugs received by them from main drug store of the hospital. Further, records of dispensing of drugs to the patients were also not maintained by the IPDs and OPDs of all DHs. Fortnightly review of the short expiry of drugs were never carried out in any of the facility. There was also no record to show the quantity and type of medicines expired. There was also no record on drugs received and subsequently called back due to substandard quality. Assessment of infection prevention and control mechanism was ineffective. All types of linens as prescribed by IPHS norms were not available in test checked DHs. The State had 70 functional Ambulances but there was a serious shortage (63 *per cent*) of ambulance services with respect to IPH norms.

All the test checked DHs were segregating bio waste of the hospital as per norms. However, except for Kohima, the collection in other DHs was not outsourced to local authorities. The disposal of bio waste and other hazardous waste was done in drains/deep pit burials by the hospitals themselves. Except DH, Wokha, other test checked hospitals did not have ETP plants for treatment of liquid and bio medical waste resulting in drainage discharge of the waste.

5.10 Recommendation

(i) The DHs needs to take corrective steps to store the drugs as per the labelling conditions prescribed on the packs to maintain their loss of efficacy before being administered to the patients.

(ii) The Department needs to ensure that the infection control mechanism is embedded in hospitals and is thoroughly monitored by adopting all prescribed methods of sterilisation and microbiological sampling etc.

(iii) The Department may ensure that BMW Rules are adhered and followed rigorously by DHs to provide an infection free environment in the hospitals. Deviation from BMW Rules in Procedures for collection, handling, transportation, disposal and monitoring of the Bio-medical waste should be viewed seriously and monitoring mechanism be developed at the Government level needs to be put in place.

[7] August 2017, March 2018, November 2018

CHAPTER-6

MATERNAL AND CHILD CARE, PREVALENCE OF CANCER AND HIV/AIDS IN THE STATE

CHAPTER 6: MATERNAL AND CHILD CARE, PREVALENCE OF CANCER AND HIV/AIDS IN THE STATE

6. Adequacy of healthcare services relating to maternal and infant care, cancer and HIV/AIDS and consequent improvement in patient outcomes

6.1 Maternal & Child Health

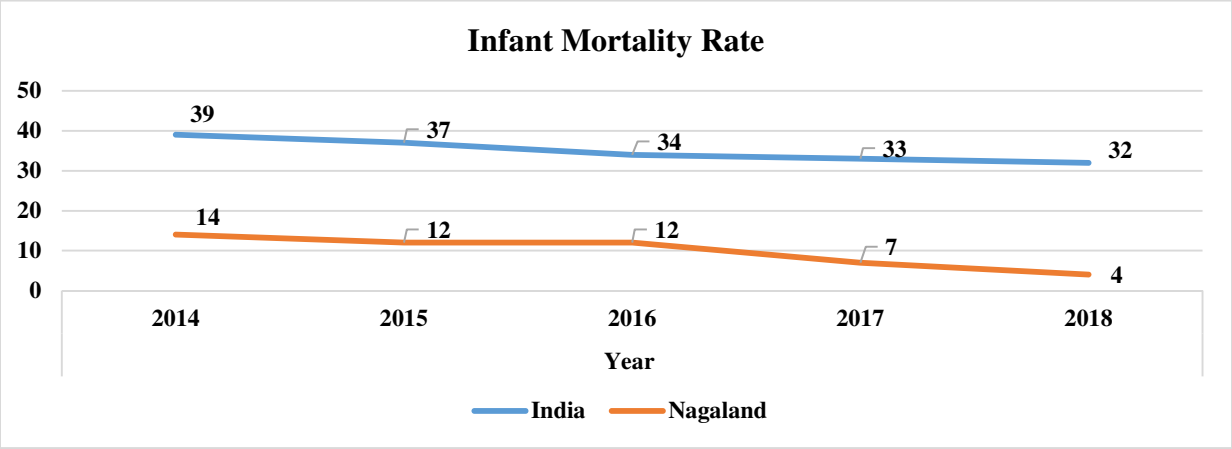
Maternal health refers to the health of women during pregnancy, childbirth and the postpartum period, whereas prenatal health refers to health from 22 completed weeks of gestation until seven completed days after birth. New born health is the babies first month of life. A healthy start during the prenatal period influences infancy, childhood and adulthood[1].

In Maternal and Child Health, the Anganwadi Centres are supposed to function in coordination with Health Department. It is part of the Indian Public Health Care System. Basic health care activities include contraceptive counselling and supply, nutrition education and supplementation and pre-school activities. The centres are also used for oral rehydration source, basic medicines and child care. They were started as part of the Integrated Child Development Service Programme to combat child hunger and malnutrition. However, in Nagaland, Anganwadi Centres (AWC) are functioning independently and coordination activity with Health Department is limited to organising Village Health Nutrition Day once every month in the village. AWC is identified as the hub for service provision in Reproductive Child Health programme under NHM and also act as a platform for inter-sectoral convergence.

6.1.1 Infant Mortality

The Infant Mortality Rate (IMR) is often regarded as a barometer for overall welfare of a community or a country. As such, it has been used as an outcome to be explained or as an explanatory variable to capture the socio economic development of a country. The IMR of the entire State is shown in Chart 6.1 below:

Chart 6.1 Comparison of Infant Mortality Rate with National Average



Source: SRS Bulletin of respective years (Registrar General, India)

[1] According to World Health Organisation (WHO)

It can be seen from above that Infant Mortality Rate (IMR) was lower than the national figures. In Nagaland, IMR showed a declining trend from 14 in 2014 to 4 in 2018. The decline was more in urban areas as compared to the rural areas. In urban areas it decreased from 17 (2014) to 3 (2018) and in rural areas it decreased from 13 (2014) to 5 (2018). The overall IMR during the period 2014-18, was higher in urban areas as compared to the rural areas.

6.1.2 Manpower and infrastructure on maternal care

Audit observed that there was shortage of Gynaecologists in the following test checked DHs as detailed in T**able 6.1.**

Table 6.1: Shortage of Gynaecologists in the test checked DHs

Name of Hospital	Approved Bed strength	Functional Bed strength	Requirement of Gynaecologist as per IPHS	Gynaecologist actually available		Shortage	
				April 2014	March 2019	April 2014	March 2019
DH Phek	75	68	2	1	1	1	1
DH Wokha	50	50	2	2	1	0	1
DH Tuensang	100	100	2	1	2	1	Nil
DH Kohima	300	252	4	2	5	2	Nil

Source: Department and Hospital Records

Position of availability of Specialist Medical Officers (Gynaecologist) has improved in DHs Kohima and Tuensang while there was shortage in DH Phek.

Department did not comment (November 2020) on shortage of Specialist Medical Officers (Gynaecologist) in the two DHs.

6.1.3 Antenatal Care

Government of India, adopted (January 2013) a strategy of expanding the scope of Reproductive and Child Health (RCH) to Reproductive, Maternal, New-born, Child plus Adolescent Health (RMNCH+A). The RMNCH+A guidelines identified delivery of antenatal care package and tracking of high-risk pregnancies as a priority intervention to monitor the progress of foetal growth and to ascertain the well-being of the mother.

The Framework for Implementation of NHM issued by GOI as well as IPHS norms stipulate the first antenatal check-up within the first 12 weeks of pregnancy and three check-ups thereafter. The framework also prescribed Iron and Folic Acid (IFA) supplementation of 100 milligram of elemental iron and 500 microgram of folic acid daily for 100 days during pregnancy, followed by same dose for 100 days in post-partum period.

The position of ANC registration and services provided in the State during 2014-19 are as detailed below in **Table 6.2**.

Table 6.2: The position of ANC registration and services provided in the State during 2014-19

Year	Total pregnant women registered for ANC	Registered within first trimester (12 weeks)	Received three ANC check-ups during pregnancy	Not received three* ANC check-ups	Pregnant women who received TT1	Pregnant women who received TT2	Pregnant women who received 100 IFA tablets
2014-15	44588	20865	14951	29637	20792	16232	15081
2015-16	48846	17500	15731	33115	19890	15106	14131
2016-17	47166	14512	15299	31867	19173	14803	11913
2017-18	37174	11039	6896	30278	17711	11721	3405
2018-19	37402	10457	8151	29251	17897	11144	5843
Total	**215176**	**74373**	**61028**	**154148**	**95463**	**69006**	**50373**

2017-18 onwards pregnant women are supposed to get four or more ANC check-ups
Source: Departmental figures

It can be seen from the table above that, the number of pregnant mothers who registered within the first trimester is only 34.56 *per cent* of the total registered pregnant mothers. The number of mothers who received three or more ANC check-ups was 28.36 *per cent* of the total registered pregnant mothers. Further, it is also seen that the total number of registered mothers showed a decreasing trend in the State from 2016-17 onwards. Over the years, pregnant women who received three ANC check-ups during pregnancy had reduced to less than 50 *per cent* with reference to 2016-17. Out of registered pregnant women only 23.41 *per cent* received 100 IFA tablets.

Audit observed that the State Government was not able to keep track of all pregnant women who were registered for ANC to ensure that all pregnant mothers received the stipulated quantum of ANC, timely check-ups, TT and IFA tablets at intervals.

Department did not offer any comment (November 2020).

6.1.4 Post-natal care

6.1.4.1 Discharge within 48 hours of delivery

As per JSSK Guidelines, the first 48 hours after delivery are vital for detecting any complications and its immediate management. Care of mother and baby (including immunisation) are essential immediately after delivery and at least upto 48 hours. During this period, mother may be advised for extra calories, fluids and adequate rest which is required for well-being of baby and herself. The position of institutional deliveries and number of women discharged within 48 hours in four test checked DHs is shown in table 6.3 below:

Table 6.3: Number of women discharged within 48 hours of delivery in the selected DHs

Year	Kohima			Phek			Tuensang			Wokha		
	ID	Discharge within 48 hrs	%	ID	Discharge within 48 hrs	%	ID	Discharge within 48 hrs	%	ID	Discharge within 48 hrs	%
2014-15	1902	651	34.23	166	146	87.95	545	503	92.29	421	411	97.62
2015-16	1871	1058	56.55	160	142	88.75	494	445	90.08	329	263	79.94
2016-17	1913	824	43.07	156	123	78.85	496	461	92.94	278	262	94.24
2017-18	1854	1224	66.02	135	101	74.81	507	453	89.35	294	294	100.00
2018-19	1835	1083	59.02	132	120	90.91	596	530	88.93	288	288	100.00
Total	**9375**	**4840**		**749**	**632**		**2638**	**2392**		**1610**	**1518**	

Source: HMIS data of test-checked districts

It can be seen from the table above that as many as 9382 (65 *per cent*) out of the 14,372 women who delivered at the DHs were discharged within 48 hours. The percentage of women discharged within 48 hours was alarming in DH Phek (84 *per cent*), Tuensang (91 *per cent*) and Wokha (94 *per cent*).

Department did not offer any comment (November 2020).

6.1.5 Status of still birth rate

The still birth rate is a key indicator of quality of care during pregnancy and childbirth. The Still births status in the test checked DHs is given in table below:

Table 6.4: Still birth status in the test checked DHs

Year	DH Kohima			DH Phek			DH Tuensang			DH Wokha		
	Total No. of deliveries	Total No. of still birth	% of still birth to deliveries	Total No. of deliveries	Total No. of still birth	% of still birth to deliveries	Total No. of deliveries	Total No. of still birth	% of still birth to deliveries	Total No. of deliveries	Total number of still birth	% of still birth to deliveries
2014-15	1902	34	1.79	166	2	1.20	545	23	4.22	421	0	0.00
2015-16	1871	22	1.18	160	2	1.25	494	17	3.44	329	1	0.30
2016-17	1913	31	1.62	156	0	0.00	496	21	4.23	278	0	0.00
2017-18	1854	35	1.89	135	2	1.48	507	23	4.54	294	6	2.04
2018-19	1835	24	1.31	132	2	1.52	596	18	3.02	288	7	2.43

Source: HMIS data

As can be seen from table above, the still birth rate had declined in Kohima but had increased in Phek. The rate of still birth was highest in DH Tuensang. The shortage of doctors (41.67 *per cent*), nurses (13.34 *per cent*), paramedical staff (86.05 *per cent*) and equipment (83.92 *per cent*) in the DH Tuensang, has a bearing on this issue and the DH had not provided information on steps taken to review this comparatively high still birth rate in the district.

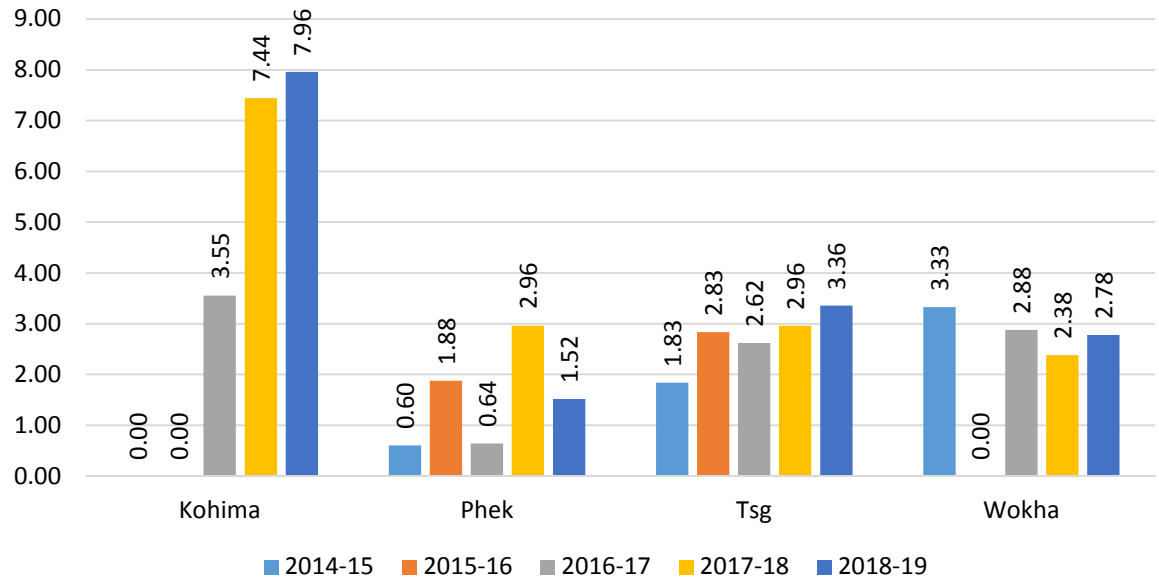
Department did not offer any comment to this audit observation (November 2020).

6.1.6 Low Birth Weight (LBW) babies

World Health Organisation (WHO) defined Low Birth Weight (LBW) babies as such infants with a birth weight of 2,499 grams or less. Premature birth and Intrauterine growth restriction (IUGR) are the main causes of LBW.

Audit observed that percentage of low birth babies ranged from zero to 7.96 *per cent* in test checked DHs.

Chart No. 6.2: LBW cases in test check DHs in Percentage



As can be seen from the chart above, new-born with LBW showed an increasing trend during the last five years in DH Kohima whereas in other three DHs it showed a mixed trend.

6.1.7 Deliveries through Caesarean sections

C-section, or caesarean delivery, is the use of surgery to deliver babies. NHM Guidelines on "Engaging General Surgeons for Performing Caesarean Sections and Managing Obstetric Complications" stated that around 8 to 10 *per cent* of total delivery cases require C-Section.

Status of C-Section deliveries in test checked DHs is shown in **Table 6.5.**

Table 6.5: C-Section deliveries in test checked DHs

Year	DH Kohima			DH Phek			DH Tuensang			DH Wokha		
	ID[2]	C-Section[3]	% of C-Section[4]	ID	C-Section	% of C-Section	ID	C-Section	% of C-Section	ID	C-Section	% of C-Section
2014-15	1902	353	18.56	166	25	15.06	545	52	9.54	421	87	20.67
2015-16	1871	325	17.37	160	30	18.75	494	49	9.92	329	60	18.24
2016-17	1913	319	16.68	156	20	12.82	496	35	7.06	278	38	13.67
2017-18	1854	354	19.09	135	20	14.81	507	26	5.13	294	41	13.95
2018-19	1835	323	17.60	132	6	4.55	596	66	11.07	288	36	12.50
Total	**9375**	**1674**	**17.86**	**749**	**101**	**13.48**	**2638**	**228**	**8.64**	**1610**	**262**	**16.27**

Source: HMIS data

[2] ID-Institutional deliveries
[3] Caesarean deliveries
[4] Per cent of Caesarean deliveries

As can be seen from table above, C-Sections in all DHs were above 10 *per cent* except DH Tuensang (2017-18) and DH Phek (2018-19). Though, average C-Section in DHs ranged between 8.64 *per cent* and 17.86 *per cent*, DH Tuensang and DH Wokha were conducting C-Section deliveries without the services of an anaesthesiologist. The percentage of C-Section deliveries were highest in DH Kohima, due to the availability of sufficient manpower (doctors, staff nurse, technical services) in the DH.

Further, examination of records in test checked CHC Viswema, revealed that, out of 120 institutional deliveries during the five years, there was no C-section performed. Lack of C-section services in CHCs were primarily due to shortage of essential resources, including qualified specialist (Gynaecologist), anaesthesiologist, qualified staff nurse, major operation theatre etc.

On Conducting of C-Section deliveries without the services of an anaesthesiologist, Department replied (October 2020) during exit conference that a gynaecologist can perform C-Section after administering spinal anaesthesia.

6.1.8 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 examined records of two parameters [Institutional Deliveries (ID) and In-patient Department (IPD)] for the period 2014-19 in two test checked DHs. It was observed that the data reported to the Ministry in respect of the two selected parameters during the five years varied with that of the actual data recorded in the respective DHs. The details are given in the following **Table 6.6**:

Table 6.6: Comparison of HMIS data with records of DH Wokha and Phek

Month/ Year	Total No. ID in Wokha		Total No. ID in Phek		Total No. IPD in Wokha		Total No. IPD in Phek	
	HMIS data	DH records	HMIS data	DH records	HMIS data	DH records	HMIS data	DH records
2014-15	421	206	166	169	2682	3105	1107	533
2015-16	329	388	160	157	1804	2486	1145	451
2016-17	278	252	156	145	1941	2386	2504	516
2017-18	294	295	135	138	1789	2307	5540	545
2018-19	288	268	132	121	1689	1769	4279	693
Total	**1610**	**1409**	**749**	**730**	**9905**	**12053**	**14575**	**2738**
Difference	201		19		-2148		11837	
Percentage	14.27		2.60		17.82		432.32	

Source: Records of DH Wokha and Phek and HMIS data

As can be seen from the Table above, the Hospital Management Information System (HMIS) data for ID registered for ANC was inflated by 14.27 *per cent* and 2.6 *per cent* in DH Wokha and DH Phek respectively. In the case of IPD admissions, HMIS data was understated by 2148 (17.82 *per cent*). However, in the case of DH Phek, it was inflated by 11837 (432.32 *per cent*).

During exit conference (October 2020), Principal Secretary, H & FW stated that Department had prioritised 11 DHs for installation of "Mera Hospital" software for effective patient management system and till such installation, one DEO would be posted in each DH under

NHM who would collect information from DH and pass to CMO of the district. The reply did not elaborate on the data discrepancy.

6.1.9 Coverage of ANC under Pradhan Mantri Surakshit Matritva Abhiyan

Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) was launched (July 2016) by the Ministry of Health & Family Welfare (MoHFW), Government of India. The program aims to provide assured, comprehensive and quality antenatal care, free of cost, universally to all pregnant women on the 9th of every month.

A minimum package of antenatal care services (including investigations and drugs) would be provided to the beneficiaries at identified public health facilities (PHCs/ CHCs, DHs/ urban health facilities etc.) in both urban and rural areas in addition to the routine ANC at the health facility/ outreach. It was launched in Nagaland during November 2016.

Number of pregnant women given ANC from November 2016 to March 2019 in test checked districts were as shown in **Table 6.7**.

Table 6.7: Number of pregnant women given ANC from November 2016 to March 2019 in test checked districts

Year	Kohima		Wokha		Phek		Tuensang	
	Target for the year	No. of ANC given	Target for the year	No. of ANC given	Target for the year	No. of ANC given	Target for the year	No. of ANC given
2016-17	4794	41 (0.85%)	2683	29 (1.08%)	2235	54 (2.41%)	3175	3 (0.09%)
2017-18	4818	302 (6.26%)	2966	171 (5.76%)	2913	125 (4.29%)	3511	105 (2.99%)
2018-19	4024	Not reported	2477	4 (0.16%)	2433	58 (2.38%)	2933	74 (2.52%)

Source: As furnished by the Department

As can be seen from above, achievement against the target for ANC was very low in the selected districts and ranged from 0.09 *per cent* to 6.26 *per cent*, which indicated that comprehensive and quality antenatal care as envisaged under the programme, could not be given to pregnant women.

Department replied (October 2020) that the achievement was low as only 36 health facilities were implementing PMSMA out of 615 health units across 11 districts.

The outreach of PMSMA may be increased by implementing the scheme in more number of health units.

6.1.10 District Early Intervention Centre (DEIC)

Government of India launched (February 2013) the Rashtriya Bal Swasthya Karyakram (RBSK) targeted to deliver Child Health Screening and Early Intervention Services under NHM. The RBSK also envisaged setting up of District Early Intervention Centres (DEIC) at the DH level across the country. The purpose of DEIC is to provide referral support to children detected with health conditions during health screening, primarily for children up to 6 years of

age group. DEICs are supposed to deliver 16 types[5] of services. A team consisting of one Paediatrician, one Medical officer, one Dentist, two Staff Nurses, Paramedics and visiting specialists will be engaged to provide services.

Government of India approved establishment of five[6] DEICs (ROP 2017-18) and approved ₹ 144.63 lakh (ROP 2017-18) for procurement of equipment for DEIC. Equipment for ₹ 119.45 lakh was procured (February 2019) by NHM which was issued (February to August 2019) to five DEICs. On further scrutiny, it was observed that except DEIC Kohima, other four DEIC were not yet established and DEIC Kohima commenced its function from April 2019 whereby 119 patients had utilised the services available in DEIC Kohima (July 2019) so far.

Photograph 6.1: Non-functional dental x-ray equipment in DH-Kohima

Audit noticed that Dental X-Ray set received (02/19) in DEIC unit of DH Kohima could not be utilised due to non-receipt of time range. Similarly, Indirect Ophthalmoscope received (February 2020) also could not be used due to non-supply of lens (Specification not stated to audit). Tuning fork (one number) also was not supplied. BERA with ABR both insert phone and head phone received on 20/02/2019 could not be put to use due to problem in calibration.

Thus, the objective of DEIC to intervene in the early stages of child health could not be achieved in the three test-checked districts and in Kohima, its impact was minimum.

Department in reply (October 2020) stated that initially five DEICs were approved for establishment, subsequently one DEIC could be made functional due to shortage of specialist doctors.

Reply is not acceptable as the Department was well aware that there were shortage of specialist doctors in the State but decided to procure DEIC equipment which resulted in blockade of Government money.

6.1.11 Conclusion

Government of India had initiated many focussed interventions under NHM like ANC, JSY, JSSK, Labour Room Quality Improvement Initiative, Capacity building trainings in Skilled Birth Attendance, Emergency Obstetric Care, Navjat Shishu Suraksha Karyakram, etc. along with establishment of First Referral Units (FRUs) to promote enhanced access to critical maternal, new-born and child health services in health institutions. Main objective of these

[5] Medical services, Dental services, Occupational therapy & Physical therapy, Psychological services, Cognition services, Audiology, Speech-language pathology, Vision services, Health services, Lab services, Nutrition services, Social support services, Psycho-social services, Transportation and related costs, Service coordination – (DEIC Manager)

[6] District Hospitals of Kohima, Mokokchung, Tuensang, Mon and Dimapur

programmes were to reduce the IMR and MMR. Though infant death was less in Nagaland, but still birth rate continued to be high in Tuensang and Phek districts. There were shortage of Gynaecologists in DH Phek and DH Wokha. Audit observed that the number of women receiving ANC was decreasing over the years and had reduced to less than 50 *per cent* over the years in the test checked DHs. This indicated that State Government was not able to track all pregnant women who were registered for ANC to ensure that all pregnant mothers received the stipulated quantum of ANC. Deficiencies were observed in providing post-natal care as 65 *per cent* women who delivered at the DHs were discharged within 48 hours which was against the norms of JSSK. DEIC could be made operational only in one district, for want of specialist doctors. The HMIS data of the State provided to GoI, was not reliable as it differed significantly with the DH records.

6.1.12 Recommendation

(i) The Department may strengthen the ante-natal care by proper monitoring and follow up of all pregnant women in collaboration with ASHA workers so that the mandated check-ups, including immunisation and IFA tablets are availed by all pregnant women.

(ii) ANC should be strengthened in all HUs to achieve the objective of mother and child care.

(iii) DHs may review still birth rates critically for corrective action.

(iv) Sanctioned DEICs may be made functional as per the norms prescribed by GoI.

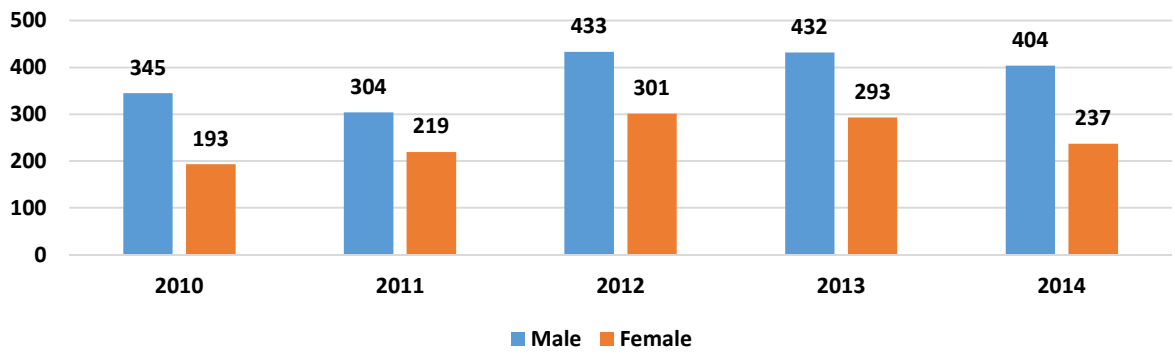
(v) HMIS data of the State may be made reliable with adequate cross checks by the DH administration and at the State level.

6.2 Cancer

6.2.1 National Cancer Registry Programme

National Cancer Registry programme (NCRP) was commenced (December 1981) by the Indian Council of Medical Research (ICMR) with a network of cancer registries across the country. The main objective of the programme was to generate a reliable data in magnitude and patterns of Cancer. Population based Cancer Registry was established in Nagaland in June 2009 with its office at DH Kohima in the Department of Pathology. As per the report of Population Based Cancer Registry, Nagaland, total number of cancer cases registered for the years 2010-14 was 3161 where 60.68 *per cent* were male and 39.32 *per cent* were female.

Chart 6.3: Number of cancer cases registered in Nagaland during 2010-14



Report of the Population Based Cancer Registry Nagaland (2015-19) is yet to be published (March 2020).

6.2.2 Cancer cases diagnosed in DH Kohima

As per information furnished to audit by the DH Kohima, 1297 cases were diagnosed as cancer during 2014-19. Audit observed that number of cancer cases diagnosed increased from 188 (2014-15) to 335 (2018-19) which showed a growth of 78.19 *per cent* during last five years. Total number of patients screened and gender wise bifurcation was not furnished to audit.

6.2.3 Establishment of Non-Communicable Diseases (NCD) clinics

The Cancer Control Programme in the State was being implemented mainly through Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke' (NPCDCS) under the National Health Mission.

The focus of NPCDCS is promotion of healthy life styles, early diagnosis and management of diabetes, hypertension, cardiovascular diseases & common cancers e.g. cervix cancer, breast cancer & oral cancer. NPCDCS was initiated in the State during September 2014. Under NPCDCS, NCD Clinics are to be set up at District and CHC levels, to provide services for early diagnosis, treatment and follow-up for common NCDs.

At present the programme is functioning with one State NCD cell, NCD clinics in all DHs and five[7] CHC NCD clinics.

In the case of cancer, number of patients newly diagnosed, put on treatment, treatment follow-up and referral made in sampled DHs during 2018-19 were as shown in **Table 6.8.**

Table 6.8: Number of patients newly diagnosed, put on treatment, treatment follow-up and referral made in sampled DHs in respect of Cancer during 2018-19

Name of DH	Type of NCD	No. of patients attended in NCD	Newly diagnosed with Cancer.	No. of newly diagnosed Put on treatment	No. of persons on treatment follow-up	Referred
Tuensang	Cancer	3924	9	8	0	0
Phek		583	1	1	0	0
Kohima		3971	62	62	0	0
Wokha		8234	8	3	0	0

Source: Monthly Report (Form 5A) of respective NCD Cell

As can be seen from the above table, though newly diagnosed patients were put on treatment, there was absence of follow-up and referrals.

There was no community screening as per the prescribed age and periodicity during the last five years. Two programmes were conducted during 2014-19 for cancer screening by Wokha DH during 2014-19. 48 cases of cancer suspects were identified and referred for higher examination.

[7] Bhandari, Pungro, Jalukie, Medziphema and Noklak

DHs are supposed to have equipment like Colposcope for detection of Precancerous conditions of the cervix and mammography for detection of breast cancer. In three[8] DHs, audit observed that Mammography machine and Colposcope were not available.

In reply (October 2020) Department stated that community screening commenced from 2018 in Kohima and Dimapur districts and continued with Phek and Kiphire districts in 2019 through population based screening. Equipment like Colposcope and Mammogram for early detection of cancer were yet to be procured.

6.2.4 Referral cases

Paragraph 2.3.2 of Operational guidelines of NPCDCS prescribes that complicated cases shall be referred from CHC to the DH for further investigations. Audit observed that test checked hospitals did not maintain any records pertaining to cases referred from CHCs/ PHCs including suspected cases of cancer.

In the absence of records, audit could not comment on referral cases of NCD clinics in test checked DHs.

6.2.5 Training in Non-Communicable Diseases (NCDs)

Health professionals and health care providers at various levels of health care are to be trained for health promotion, NCD prevention, early detection and management of cancer, diabetes, cardiovascular diseases (CVD) and stroke. Audit observed that MOs or Nurses were not trained in NCD in DH, Phek. Further, no training targets had been set in the test checked DHs.

Department did not offer any reply to this observation (November 2020).

6.2.6 Institutional mechanism for treating of poor Cancer patients

Under Rashtriya Arogya Nidhi (RAN) (set up in January 1997), Ministry of Health & Family Welfare, GoI was to provide financial assistance to patients living below poverty line who are suffering from major life threatening diseases, to receive medical treatment at any of the super speciality hospitals/institutes or other Government hospitals. State Governments were also to set up (November 1996) State Illness Assistance Fund (SIAF) in their respective States for which Grant-in-Aid would be released by Central Government. Audit observed that State Government did not setup any SIAF nor referred any case under RAN.

6.2.7 Establishment of Tertiary Care Cancer Centre (TCCC) at DH Kohima

NPCDCS guidelines stipulate that identified cases should be referred to the Tertiary Cancer Care Centre (TCCC) for further management of the disease and that the TCCC was to be equipped with necessary infrastructure for such treatment. Scrutiny of records of DH Kohima revealed that the project for setting up TCCC under the 'Strengthening of Tertiary Care Cancer facilities Scheme' of NPCDCS was approved for ₹ 43.50 crore[9] on 90:10 sharing basis between GoI & GoN in 2016-17. An amount of ₹ 13.23 crore was released by GoI between December 2016 and April 2018 against which GoN released State share of ₹ 1.30 crore in November 2019.

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[8] DHs Wokha, Phek and Tuensang

[9] Civil works ₹ 12.00 crore and equipment ₹ 31.50 crore.

Work order for construction of TCCC for ₹14.82 crore was awarded (December 2017) by Development Authority Nagaland (DAN) to a contractor to be completed within 30 months. However, the construction work is still incomplete (October 2020).

Photograph 6.2: showing the current status of project- TCCC, DH Kohima.

The purchase order for the equipment was awarded (December 2017) to a firm[10] for ₹ 7.04 crore before completion of civil work. The equipment was received (March 2018) and was kept in DH Kohima pending installation due to non-completion of Civil works. Thus, procurement of equipment before civil work resulted in idle expenditure of ₹ 7.04 crore.

Photograph 6.3: Equipment for TCCC lying in DH Kohima, uninstalled since two years of completion of supply order

Further, Ministry of H&FW had directed (April 2018) to complete the project by March 2019 as the assistance will not be given after 2018-19. Thus, the prospect of completion of the project with the assistance of GoI under the scheme is doubtful. The delay in completion of the project defeats the very objective of strengthening of Tertiary Care Cancer facilities and the benefits that would have accrued to the cancer patients of the State.

Department in its reply (October 2020) accepted that construction work was delayed due to various reasons like land stability issue, non-availability of stone piling experts, incessant rains etc. It further stated that stone piling work is expected to be completed by December 2020 and radiation treatment of patients would begin by last part of 2021.

[10] M/s. Panacea Medical Technologies Pvt Limited, Whitefield Bangalore.

Reply of the Department was silent on funding for completion of the project as Ministry of H&FW had informed that assistance would not be given after 2018-19. No reply was given on procurement of equipment before completion of civil works.

6.2.8 Monitoring and evaluation

Success of implementation of any programme depends on effective monitoring on achievement of set objectives and quality of impact by evaluation. As per the operational guidelines of NPCDCS, the State NCD cell is to undertake situational analysis and prepare State Plans that spell out physical targets, means of coordination, supervision and monitoring related to various components of NPCDCS in the State.

Audit observed that periodic surveys were not carried out by the Department on prevalence of cancer, type of cancers and indicators which causes cancer. Since periodic surveys were not carried out, remedial action in control of cancer were inadequate. Strategies for supervision and monitoring were also not framed.

6.2.9 Conclusion

Management of Cancer Control Programme in the State needs improvement in many areas. Public awareness on cancer through IEC activity requires to be strengthened. The TCCC at DH, Kohima sanctioned by GoI in 2016-17 at a cost of ₹ 43.50 crore and against which funds received were ₹ 13.23 crore remained incomplete, due to land issues and non-availability of stone piling experts etc. Despite MOHFW direction to complete the project by March 2019, the project remained incomplete (October 2020) and the Department would not be able to provide services until end 2021.

6.2.10 Recommendation

(i) Develop an accurate data bank of all details relating to the incidence of cancer in the State and strengthen screening of the patients to identify early warning signals of all types of cancer.

(ii) Develop focussed strategies to bring behaviour changes in tackling the menace of Cancer.

(iii) Develop infrastructure as well as human resources in district hospitals for necessary diagnostic procedures including biopsy.

(iv) Ensure expeditious completion of TCCC at DH, Kohima and it may be made fully functional with state of the art bio medical equipment.

6.3 HIV/AIDS

6.3.1 Prevalence of AIDS in the State

The National AIDS Control Organisation (NACO), is a division of India's Ministry of Health and Family Welfare that provides leadership to HIV & AIDS control programme in India through HIV & AIDS Prevention and Control Societies, and is "the nodal organisation for formulation of policy and implementation of programs for prevention and control of HIV & AIDS in India." Nagaland State Aids Control Society (NSACS) co-ordinates different activities of NACO in the State. Under NSACS, District Aids Prevention and Control Unit (DAPCU) were established in ten districts except Longleng. DAPCU coordinates with all the HIV facilities in the district.

Under DAPCU, each district constituted Integrated Counselling and Testing Centre (ICTC) which is a place where a person is counselled and tested for HIV. Under DAPCU, Opioid Substitution Therapy (OST), Sexually Transmitted Infections (STI) and Anti-Retroviral Therapy (ART) centres are also functioning. ART centres provide care, support and treatment services to persons living with AIDS and monitor patients in HIV care.

6.3.2 Preparation of Annual Action plan

As per para 5.1 of Operational Guidelines for Financial Management of NACO, there should be a bottom-up approach in respect of planning of activities as inputs for the preparation of budget at the State Aids Control Society (SACS) level. The activity plan should be prepared based on the inputs from various implementing units.

Audit observed that inputs were not received from these units before formulation of budget and preparation of Annual Action Plan by NSACS. Hence, bottom-up approach in respect of planning at State and district level was not adopted.

6.3.3 Status of HIV/AIDS in the State

The status of number of cases tested and number found positive in respect of HIV/AIDS in the State during 2014-15 to 2018-19 is shown in **Table 6.9**.

Table 6.9: Number of cases tested and number found positive of HIV/AIDS in the State during 2014-15 to 2018-19

Year	Total number of clients tested	Total number found positive	Percentage positive cases
2014-15	99179	1834	1.85
2015-16	95247	1616	1.70
2016-17	90924	1697	1.87
2017-18	90236	1801	2.0
2018-19	83013	1879	2.26
Total	**458599**	**8827**	**1.92**

Source: Departmental figure

It is observed that there has been a decline in the total number of clients tested in the State and the percentage found positive registered an increase except in 2015-16. In the case of sampled districts, status is as shown in **Table 6.10**.

Table 6.10: Status of HIV/AIDs in the test checked districts during the last five years.

District		2014-15	2015-16	2016-17	2017-18	2018-19	Total
Kohima	Tested	13775	12613	13117	14243	12127	65875
	Positive cases	319	281	296	300	295	1491
	Percentage	***2.32***	***2.23***	***2.26***	***2.11***	***2.43***	***2.26***
Phek	Tested	5499	4775	4187	5155	4321	23937
	Positive cases	36	52	34	25	28	175
	Percentage	***0.65***	***1.09***	***0.81***	***0.48***	***0.65***	***0.73***
Tuensang	Tested	10334	10478	8463	7916	7495	44686
	Positive cases	154	166	187	152	249	908
	Percentage	***1.49***	***1.58***	***2.21***	***1.92***	***3.32***	***2.03***
Wokha	Tested	7549	7350	7950	7172	6419	36440
	Positive cases	33	29	58	52	55	227
	Percentage	***0.44***	***0.39***	***0.73***	***0.73***	***0.86***	***0.62***

Source: Departmental records

HIV positive cases in the test checked DHs have shown a mixed trend. However, the HIV positive cases increased by 16 *per cent* from 542 to 627 during the period 2014-15 to 2018-19. Nagaland State Aids Control Society (NSACS) conducted study/research on 'Epidemiological Investigation in to the drives of HIV& AIDS in the State' during 2018. The result of which is yet to be put in public domain.

6.3.4 Surveillance System for tracking HIV/AIDS

The objective of Surveillance System for tracking HIV/AIDS is to study and analyse risky behaviour which spread HIV infection. Initial information is collected from Integrated Counselling and Testing Centre (ICTC), Programmes of Prevention of Parent to Child Transmission (PPTCT), ARTs, Sentinel Surveillances sites etc. It was stated by the NSACS that National Institute of Medical Statistic (NIMS) conducts estimation by data triangulation method using spectrum software.

It was observed that specific surveillance plan was not formulated by the NSACS and hence identification of the pockets of infection of HIV/AIDS was limited to data received from DAPCU.

Department replied (October 2020) that in order to detect / get information on HIV/AIDS, Standalone ICTCs, Facility-ICTCs and Community Based Screening were set up in all the Government health facilities.

6.3.5 ICTC Services for pregnant Women

The RMNCH+A Guidelines issued by GOI (January 2013) identified parent to child transmission of HIV/AIDS as a major route of new and emerging HIV infections in children. Therefore, universal confidential HIV screening of pregnant women was made as an integral part of routine ANC check-up.

Status of pregnant women screened for HIV/AIDS and referred to ICTC/ART centres in test checked DHs during 2014-19 were as shown in **Table 6.11**.

Table 6.11: Status of pregnant women screened for HIV/AIDS and referred to ICTC/ART centres in test checked DHs during 2014-19

Name of DH	Registered for ANC	No. of Screening conducted	Positive cases	Actually referred to ART	Percentage referred to ART to positive cases
Wokha	8742	4055	42	10	23.81
Phek	8623	3581	38	13	34.21
Tuensang	11564	5974	125	36	28.8
Kohima	27481	11807	171	108	63.16
Total	**56410**	**25417**	**376**	**167**	**41.41**

Source: NSACS data

As can be seen from above table, only 45 *per cent* of the women registered for ANC were screened for HIV/AIDS. Though 376 pregnant women were screened as positive for HIV/AIDS, only 41.41 *per cent* were referred or attended ARTs. Since all the positive cases were not given ART services, possibility of transmission of HIV/AIDS to the new-borns cannot be ruled out. This indicates counselling being offered in ICTC centres for pregnant women was not adequate.

Department replied (October 2020) that despite given adequate counselling services to the positive clients, some of the positive pregnant women were unable to reach ARTC due to inaccessibility of the Centre.

6.3.6 STI/RTI services in ICTC

Diagnostic and laboratory services for management of Sexually Transmitted Infections (STI) and Reproductive Tract Infections (RTI) were to be provided at all CHCs, First Referral Units and at PHCs 24x7. Further, special focus was to be given to linking up with Integrated Counselling and Testing Centres (ICTCs) and establishing appropriate referrals for HIV testing and RTI/STI management. Status of pregnant women screened for RTI/STI cases in test checked DHs is shown in **Table 6.12**.

Table 6.12: Status of pregnant women screened for RTI/STI cases in test checked DHs

Name of DH	Total pregnant women				Percentage of pregnant women not screened for RTI/STI to the total registered ANC
	Registered for ANC	Screened for RTI/STI	Positive cases	Not screened for RTI/STI	
Wokha	8742	1206	12	7536	86.20
Phek	8623	1181	13	7442	86.30
Tuensang	11564	3698	23	7866	68.02
Kohima	27481	8454	51	19027	69.24
Total	**56410**	**14539**	**99**	**41871**	

Source: Records of DHs

In the test checked districts overall 74 *per cent* of pregnant women registered for ANC were not screened for RTI/STI. In the test checked DHs, the non-screening of pregnant women for RTI/STI ranged between 68.02 *per cent* (DH Tuensang) to 86.30 *per cent* (DH Phek).

6.3.7 Conclusion

NSACS had initiated a number of steps for improvement of institutional mechanisms in the State for coordinating HIV/AIDS related activities. It had established DAPCU in 10 out of 11 districts. Under DAPCU, all test checked DHs had ICT centres, OST & STI clinics and ART centres for treatment. However full potential of these facilities were not found utilised as all the pregnant women registered for ANC were not screened for HIV/AIDS and RTI/STI and those found positive were not fully referred to ART. The number of HIV positive cases had increased by 16 *per cent* to 627 during the period 2014-19. The results of the HIV Study, though completed in 2018 had not been put in public domain, so as to benefit/learn from the results of the Study.

6.3.8 Recommendation

The Nagaland State AIDS Control Society and the Department may consider:

(i) Adopting a bottom up approach for preparation of Annual Action Plans so that it is realistic and meets the demands of local situation in the State.

(ii) Taking effective steps to screen all pregnant women registered for ANC for detection of HIV/AIDS and RTI/STI cases and ensure that those detected positive should be referred for ART.

(iii) The results of the HIV Study conducted by NSACS be put in public domain.

CHAPTER-7

EVALUATING EFFICIENCY OF THE HOSPITALS

CHAPTER 7: EVALUATING EFFICIENCY OF THE HOSPITALS

7. Evaluation of in-patient services through Outcome Indicators

Patient services provided in IPD were evaluated through certain outcome indicators (OIs) like Bed Occupancy Rate (BOR), Bed Turn Over Rate (BTR), Average Length of Stay (ALOS), Leave Against Medical Advise (LAMA), Referral Out Rate (ROR) etc. **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
Clinical care capability of hospital	ALOS (in days)	Total patient bed days	Discharges in the year (including death, LAMA, referred)
Service quality of hospital	LAMA (Rate/1000)	Total no. of LAMA X 1000	Total no. of admissions
	Absconding Rate (Rate/1000)	Total no. of Absconding cases X 1000	Total no. of admissions
Efficiency	BTR	Total discharge (including death)	Total no. of functional beds
	ROR (in *per cent*)	Total no. of cases referred to higher facility	Total no. of admissions

7.1 Bed Occupancy Rate

Bed Occupancy Rate (BOR) is used to examine how effectively hospital's inpatient capacity is being utilized for inpatient care. As per IPHS norms, the BOR of hospitals should be at least 80 *per cent*. BOR of the test checked DHs is given in **Table 7.2**.

Table 7.2: **BOR of the test checked DHs *(in per cent)***

Year	DH Kohima	DH Phek	DH Tuensang	DH Wokha
2014-15	Not furnished	Not furnished	55.50	25.89
2015-16	Not furnished	Not furnished	21.74	44.89
2016-17	Not furnished	Not furnished	30.96	42.63
2017-18	Not furnished	61	31.00	48.22
2018-19	59	47	39.20	63.78

Source: Departmental figure ***Benchmark: 80 per cent***

While DH Kohima and Phek did not furnish BOR for three to four years, in none of the DH, it was 80 *per cent*. It was on a decreasing trend in two DHs (Phek & Tuensang – as compared to 2014-15), while the BOR improved in DH Wokha. The deficiencies in services and non-availability of comprehensive services in test check DHs as mentioned in this Report, gets reflected in the poor BOR. Test checked PHC and CHC did not furnish their BOR.

7.2 Average Length of Stay

Average Length of Stay (ALoS) is an indicator of clinical care capability and to determine effectiveness of interventions. ALoS is the time between the admission and discharge/death of the patient and expressed in number of days. As per IPHS norms ALoS in a DH is five days. ALoS in respect of test checked DHs were as shown in **Table 7.3**.

Table 7.3: ALoS in respect of test checked DHs

Year	DH Kohima	DH Phek	DH Tuensang	DH Wokha
2014-15	Not furnished	Not furnished	7.5	Not furnished
2015-16	Not furnished	Not furnished	3.5	Not furnished
2016-17	Not furnished	Not furnished	4.5	Not furnished
2017-18	Not furnished	3	4.5	2.4
2018-19	5.63	3	5.0	3.0

Source: Departmental figures

All the test checked DHs did not furnish information on ALoS uniformly across the years. However, in the year 2018-19, ALoS was minimum in DH Phek & DH Wokha and highest in DH Kohima. Test checked PHC and CHC did not furnish ALoS.

Department replied (October 2020) that instruction would be issued to all districts for calculation and yearly review of out-come indicators.

7.3 LAMA cases in DHs

To measure service quality of a hospital, Leave Against Medical Advice (LAMA) rate & Absconding Rate are evaluated. LAMA is the term used for a patient who leaves the hospital against the advice of the doctor and Absconding Rate refers to patients who leave the hospital without informing the hospital authorities. Scarce data is available on various aspects of the problem like type of cases, reasons where patients leave etc. LAMA cases in test checked districts is given in **Table 7.4**.

Table 7.4: LAMA[1] cases in test checked districts

Year	DH Kohima			DH Phek			DH Tuensang			DH Wokha		
	IPD admission	LAMA case	LAMA rate	IPD admission	LAMA case	LAMA rate	IPD admission	LAMA case	LAMA rate	IPD admission	LAMA case	LAMA rate
2014-15	7757	26	3.35	1107	0	0.00	2704	0	0.00	2682	3	1.12
2015-16	8020	0	0.00	1145	1	0.87	2359	0	0.00	1804	4	2.22
2016-17	7993	9	1.13	2504	0	0.00	2512	0	0.00	1941	5	2.58
2017-18	8220	33	4.01	5540	1	0.18	2515	0	0.00	1789	3	1.68
2018-19	7842	26	3.32	4279	1	0.23	2863	2	0.70	1689	4	2.37
Total	**39832**	**94**	**2.36**	**14575**	**3**	**0.21**	**12953**	**2**	**0.15**	**9905**	**19**	**1.92**

Source: HMIS data, Departmental records

There were 94 cases of LAMA in DH Kohima followed by 19 cases in DH Wokha during 2014-19. LAMA cases were not reported from CHC Viswema and PHC Botsa.

Test check history sheet of LAMA cases revealed that neither written consent of the patient nor the follow-up action to be taken were noted in the discharge slip.

7.4 Patient Satisfaction survey

There was no established system to carry out patient satisfaction survey in test checked DHs.

In DH Wokha, during 2017-18, patient satisfaction survey was carried out and 31 number of responses were received. Majority of patients rated the performance of the DH Wokha as very good. However, five patients rated the cleanness of the hospital as poor. This issue of neatness is now addressed by comprehensive renovation of DH Wokha.

Audit carried out patient satisfaction survey of 82 patients (36 IPD patients and 46 OPD patients) in four test checked DHs.

Patient satisfaction survey of important out comes across test checked DHs revealed that:

- Registration process in all the test checked DHs were hassle free as it took 5.7 minutes only for registration.
- Average waiting time between registration and consultation with the doctor was 23 minutes.
- Provision for drinking water for patients was poor as only 13.4 *per cent* respondents replied that drinking water was available in DHs.

[1] LAMA figures taken from Departmental records as it did not appear in HMIS for the year 2014-15 to 2016-17.

- Wash room facilities were scarce, as only 42.7 *per cent* patients responded that facility was available.
- Signage was available for guidance at hospitals as 78 *per cent* responded it was available and 19.6 *per cent* responded it was available partially while 2.4 *per cen*t responded it was not available.
- 86.6 *per cent* responded that Rate list for different diagnostic services were not displayed in the reception area.
- On explanation by doctors on ailment, cost, course and duration of treatment, 29.3 *per cent* responded positively, 22 *per cent* negatively and 48.8 *per cent* responded that doctors use to explain about ailment, duration, cost etc.
- On availability of prescribed medicines/drugs, 23.2 *per cent* responded it was always available, 24.4 *per cent* responded it was available most times, 25.6 *per cent* responded few times and 26.8 *per cent* responded it was almost never available.
- On availability of lifts, wheel chairs, stretchers, ramps etc. for specially abled, 58.5 *per cent* responded that they were not aware about such services.
- Overall rating of hospital experience was "Good" as 63.4 *per cent* responded positively.

7.5 Recommendation

(i) The State 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 DHs.

(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.

Kohima
The 18 June 2021

(E. Mhonbemo Patton)
Principal Accountant General (Audit)
Nagaland

Countersigned

New Delhi
The 25 June 2021

(Girish Chandra Murmu)
Comptroller and Auditor General of India

APPENDICES

Appendix-I

Availability of essential drugs procured during the five years

(Reference: Paragraph 3.4.1)

Sl. No.	Category	No. of drugs required under EDL	No. of drugs procured	No. of drugs not procured	Percent shortage
1	Analgesic	19	8	11	58
2	Antibiotics	58	34	24	41
3	Gastro- Anti Gastric Ulcer	8	0	8	100
	Gastro - Anti Emetic	11	1	10	90
	Gastro - Anti Diarrhoea	2	1	1	50
	Gastro - Anti Spasmodic And Purgative	8	1	7	88
4	Central Nervous System Drugs	22	2	20	91
5	Respiratory drugs	15	4	11	73
6	Cardiovascular drugs	18	7	11	61
7	Diuretics	6	3	3	50
8	Antifungal	6	0	6	100
9	Anti-allergy	16	6	10	63
10	Local and General Anaesthetic Drugs	23	19	4	17
11	Anthelminthic	6	2	4	64
12	Vitamins & Minerals	9	5	4	44
13	Eye /Ear/Nasal Drops	16	6	10	63
14	Antidiabetic	4	1	3	75
15	Uterine Drugs	8	2	6	75
Total		**255**	**102**	**153**	**60**

Source: Department records

Appendix-II

Laboratory and Diagnostic Services in District Hospitals

(Reference: Paragraph 4.2.7)

Speciality	As per IPHS Norms for 200-300 beds		As per IPHS norms for up to 100 beds			
Name of Services	No of services to be provided	Available	No of services to be provided	Available		
		DH, Kohima		DH Phek	DH Tuensang	DH Wokha
Clinical Pathology	29	22	24	19	18	21
Pathology	8	3	1	1	1	3
Microbiology	7	4	4	1	1	2
Serology	7	4	4	3	4	3
Blood Bank	1	1	0	0	0	0
Biochemistry	21	10	6	8	9	11
Cardio Investigation	3	2	1	1	1	1
Ophthalmology	3	3	5	1	1	1
ENT	2	2	1	0	0	0
Radiology	7	5	3	1	1	0
Endoscopy	8	5	1	0	0	0
Respiratory	1	0	1	0	1	0
Total:	**97**	**61**	**51**	**35**	**37**	**42**
% of total:-	**100%**	**62.88%**	**100%**	**68.63%**	**72.55%**	**82.24%**

Appendix-III

Details of status of equipment / medicines etc. available in Ambulances in test checked DHs.

(Reference: Paragraph 5.7)

Sl. No.	List of equipment/ medicines etc. required in Ambulance	Kohima	Phek	Wokha	Tuensang
1	Oxygen, Oxygen mask,& manometer	No	No	No	No
2	Stretchers	yes	yes	yes	yes
3	Blankets	No	No	yes	No
4	Emergency first aid kits	No	No	yes	No
5	Suction equipment	No	No	No	No
6	Supplies for immobilizing fractures	No	No	No	No
7	Venoclysis equipment	No	No	No	No
8	Drugs for emergency use	No	No	No	No
9	Minimal equipment for resuscitation manoeuvres	No	No	No	No
10	Daily checklist of equipment	No	No	No	No
11	Maintenance records of vehicle	No	No	No	No

Ambulance (DH Wokha) off road since November 2019. Records of List of equipment/ medicines etc. not furnished

GLOSSARY

Glossary		
1	AERB	Atomic Energy Regulatory Board
2	ALoS	Average Length of Stay
3	ANC	Antenatal Care
4	ANM	Auxiliary Nurse Midwife
5	ART	Anti-Retroviral Therapy
6	ASHA	Accredited Social Health Activist
7	AWC	Anganwadi Centre
8	BM	Bio-Medical
9	BMW	Bio-Medical Waste
10	BOR	Bed Occupancy Rate
11	BTR	Bed Turnover Rate
12	C&AG	Comptroller and Auditor General of India
13	CBMWTF	Common Bio-Medical Waste Treatment Facilitator
14	CCU	Critical Care Unit
15	CHC	Community Health Centre
16	CMO	Chief Medical Officer
17	CT	Computerised Tomography
18	CVD	Cardiovascular Diseases
19	DAPCU	District Aids Prevention and Control Unit
20	DC	Drug Controller
21	DEICs	District Early Intervention Centres
22	DH	District Hospital
23	DHFW	Department of Health & Family Welfare
24	DMO	District Medical Officer
25	ECG	Electro Cardiogram
26	EDL	Essential Drug List
27	ENT	Ear Nose Throat
28	ER	Emergency Room
29	ETPs	Effluent Treatment Plants
30	FRUs	First Referral Units
31	GMP	Good Manufacturing Practices
32	GNM	General Nursing & Midwifery
33	GOI	Government of India
34	GoN	Government of Nagaland
35	GSDP	Gross State Domestic Product
36	H&FW	Health & Family Welfare
37	HDU	High Dependency Unit
38	HICC	Hospital Infection Control Committee
39	HICT	Hospital Infection Control Team
40	HIV/AIDS	Human Immuno-Deficiency Virus/Acquired Immune Deficiency Syndrome
41	HMIS	Hospital Management Information System

42	HUs	Health Units
43	ICMR	Indian Council of Medical Research
44	ICTC	Integrated Counselling And Testing Centre
45	ICU	Intensive Care Unit
46	ID	Institutional Deliveries
47	IFA	Iron and Folic Acid
48	IMR	Infant Mortality Rate
49	IPD	In-Patient Department
50	IPHS	Indian Public Health Standard
51	IUGR	Intraurine Growth Restriction
52	JSSK	Janani Sishu Suraksha Karyakram
53	JSSY	Janani Sishu Suraksha Yojana
54	KFT	Kidney Function Test
55	KMC	Kohima Municipal Council
56	LAMA	Leave Against Medical Advise
57	LBW	Low Birth Weight
58	LFT	Liver Function Test
59	LT	Lab Technicians
60	MD	Mission Director
61	MMR	Measles Mumps Rubella
62	MO	Medical Officer
63	MoHFW	Ministry of Health & Family Welfare
64	MS	Medical Superintendent
65	NABL	National Accreditation Board for testing and calibration Laboratories
66	NACO	National AIDS Control Organisation
67	NCD	Non-Communicable Diseases
68	NCDC	National Centre for Disease Control
69	NCRP	National Cancer Registry programme
70	NER	North Eastern Region
71	NHAK	Naga Hospital Authority Kohima
72	NHM	National Health Mission
73	NHP	National Health Policy
74	NIMS	National Institute of Medical Statistic
75	NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
76	NQAS	National Quality Assurance Standards
77	NSACS	National State Aids Control Society
78	OIs	Outcome Indicators
79	OPD	Out Patient Department
80	OST	Opioid Substitution Therapy
81	OT	Operation Theatre
82	PA	Performance Audit
83	PD	Principal Director

84	PHC	Primary Health Centre
85	PMSMA	Pradhan Mantri Surakshit Matritva Abhiyan
86	PPTCT	Programmes of Prevention of Parent to Child Transmission
87	RAN	Rashtriya Arogya Nidhi
88	RBSK	Rashtriya Bal Swasthya Karyakram
89	RCH	Reproductive and Child Health
90	RDTL	Regional Drug Testing Laboratory
91	REH	Revenue Expenditure on Health
92	RMNCHA	Reproductive, Maternal, New born, Child plus Adolescent Health
93	ROR	Referral Out Rate
94	SACS	State Aids Control Society
95	SCs	Sub-Centres
96	SDGs	Sustainable Development Goals
97	SIAF	State Illness Assistance Fund
98	SNCU	Special New Born Care Units
99	SOPs	Standard Operating Procedures
100	SPCB	State Pollution Control Board
101	SRL	State Reference Laboratory
102	SRS	Sample Registration Statistics
103	STI	Sexually Transmitted Infections
104	TCCC	Tertiary Care Cancer Centre
105	TLD	Thermos Luminescent Dosimeters
106	USG	Ultrasonography
107	WHO	World Health Organisation

https://cag.gov.in/ag/nagaland