

Mid-term Evaluation of Free Diagnostic (Laboratory) Services in Arunachal Pradesh 2022-23



Hospital Name	Type of Hospital	District	Total Count	Sub-type
1. HOSPITAL BANSHIYAGAN	DH	ANJALIMARI	4070	5. Culture
2. HOSPITAL BANSHIYAGAN	DH	ANJALIMARI	2107	2. RPT
3. DISTRICT HOSPITAL BANGSI	DH	WAKING	7847	3. Analysis
4. DISTRICT HOSPITAL BANGSI	DH	WAKING	3676	4. Analysis Test Package
5. DISTRICT HOSPITAL BANGSI	DH	WAKING	1362	6. Blood Smear & Wet mount
6. DISTRICT HOSPITAL BANGSI	DH	WAKING	1076	7. Urinary Sedimentation
7. DISTRICT HOSPITAL BANGSI	DH	WAKING	4703	2. Culture Test Panel
8. DISTRICT HOSPITAL BANGSI	DH	WAKING	1807	3. Culture Test Panel
9. DISTRICT HOSPITAL BANGSI	DH	WAKING	1700	4. Culture Test Panel
10. DISTRICT HOSPITAL BANGSI	DH	WAKING	3800	5. Culture Test Panel

Conducted by:
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(Branch of NHSRC)
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Preface and Acknowledgement: -

Midterm Evaluation of Free Diagnostic (Laboratory) Services (PPP mode) in Arunachal Pradesh was conducted by Regional Resource Centre for Northeastern States (RRC- NE), branch of National Health System Resource Centre, Guwahati, Assam as routine activities. The Midterm evaluation of Free Diagnostic (Laboratory) Services, operating in PPP mode; services are being carried out in four districts of Changlang, Lohit, Shi-Yomi and West Siang.

At the outset, I offer my sincere gratitude to National Health Systems Resource Centre (NHSRC), especially to Health Care Technology division of NHSRC for constant guidance and valuable suggestions extended during the evaluation.

I am also grateful to the Mission Director, National Health Mission (NHM), Arunachal Pradesh for extending the support for carrying out the evaluation of the program.

I appreciate the support extended by the State Nodal Officer and officials of National Health Mission, Arunachal Pradesh, District Medical Officer and District RCH Officer of the respective surveyed districts, other functionaries of the District Programme Management Support Units (DPMSU), officials and staffs of visited health facilities and ASR Hospitals (India) Pvt. Ltd. laboratories for their cooperation in the field level assessment activities.

Last not the least, my sincere thanks go to all the staff at RRC-NE, who has been associated in some way or the other with the evaluation study starting right from the preparing of schedules to the compilation of data, their interpretation and writing the report. Finally, special thanks to all respondents who spared their valuable time and co-operated with the Investigators by providing the required information.

(Dr. Ashoke Roy)
Director, RRC-NE

Abbreviations: -

AMC	Annual Maintenance Contract
APTT	Activated Partial Thromboplastin Time
APACS	Aunachal Pradesh AIDS Control Society
ASO	Antistreptolysin O (ASO) Titer
BEMMP	Biomedical Equipment Management & Maintenance Programme
BT-CT	Bleeding And Clotting Time Test
CAMC	Comprehensive Annual Maintenance Contract
CBC	Complete Blood Count
CMLT	Certificate Course in Medical Lab Technology
DMLT	Diploma In Medical Laboratory Technology
G6PD	Glucose-6-Phosphate Dehydrogenase
GIA	Grant in Aid
GTT	Glucose Tolerance Test
Hb	Hemoglobin
HBsAg	Hepatitis B Surface Antigen
HCV	Hepatitis C Virus
HWC	Health And Wellness Centres
ICTC	Integrated Counselling and Testing Centres
NHM	National Health Mission
OOPE	Out Of Pocket Expenditure
OPD	Outpatient Department
PAP Stain	Papanicolaou Test
PBF	Peripheral Blood Film
PC	Percentage
PPM	Planned Preventive Maintenance
PPP	Private Public Partnership
PT INR	Prothrombin Time Test (PT)
RA	Rheumatoid Arthritis
S.CRP	C-Reactive Protein Test
S.HDL	High-Density Lipoprotein
S.LDL	Low-Density Lipoprotein
S. VLDL	Very-Low-Density Lipoprotein
SD	State Dispensaries
SDCH	Subdivision Civil Hospital
SGOT	Serum Glutamic Oxaloacetic Transaminase
SGPT	Serum Glutamic Pyruvic Transaminase
TRF	Test Requisition Form
TSH	Thyroid Stimulating Hormone
VDRL	Venereal Disease Research Laboratory Test

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Executive Summary:

The Free Diagnostic Initiative is intended to provide a set of essential diagnostics at various levels of health care so that providers can make rational decisions regarding treatment and patients benefit by getting their tests conducted within the health facility free of cost.

Diagnostics are an integral part of the health care delivery system and provide information to the service providers for making informed decisions regarding treatment and management of a case. Limited availability and access to quality laboratory and radiology services are among the major challenges contributing to delayed or inappropriate responses to disease control and patient management.

Out of pocket expenditures on diagnostic tests are high and rising, sometimes even overtaking the costs of medicines. The poor who access public health care facilities have access to limited set of diagnostic services.

The availability of affordable diagnostics enables accurate detection of health risks and disease at an early stage, thus improving the disease management, and minimizing subsequent health problems and associated costs.

A package of essential diagnostics, if available free of cost in public health facilities would not only reduce the burden on the beneficiaries that face financial stress on account of expensive health care diagnostics.

With an aim to achieve the above stated facts, the state of Arunachal Pradesh has implemented the Free Diagnostic Pathology services since 2019 in PPP model through ASR Hospitals (India) Pvt. Ltd. being the partner. The MoU was signed on 19th February 2019 between NHM, Arunachal Pradesh and Service provider with an estimated amount of around Rs. 5.00 crores per annum calculated for single test to 50 different tests @ Rs. 379/ sample per patient reported at DH, 38 tests at CHCs @Rs. 262.5 / sample per patient reported at CHC and 17 tests at CHCs @Rs. 150 /sample per patient reported at PHC level for a complete basket of different pre-identified tests.

As a part of routine activity, HCT division of RRCNE has conducted the mid-term evaluation of the Free diagnostic services Pathology services under PPP mode in the State of Arunachal Pradesh in four districts viz. Changlang, Lohit, Shi Yomi and West Siang.

The interactions with beneficiaries and service providers in the health facilities during mid-term evaluation revealed that the public health facilities staff are aware of tests to be performed by the PPP service provider and are satisfied with the services. The provision of free diagnostic pathology services at the public health facility has enabled them to provide a set of tests which were previously non available. The beneficiaries also expressed their satisfaction regarding the availability of expanded range of laboratory tests at the nearest public health facilities.

The team observed that a total of 7,49,673 samples were tested in the PPP run lab services and total of 23,32,276 tests have been conducted since inception i.e. 2019 up to the month of July 2022.

Around 50 % of OPD patients availed PPP lab services in Arunachal Pradesh during April to June 2022-23.

Total 109 personnel have been engaged by the PPP Service provider in the State. It also revealed that specialist like Pathologist or Microbiologist or MD Bio-Chemistry are yet to be engaged under these initiatives by the PPP service provider in Arunachal Pradesh. Laboratory Technician send the test report electronically to the specialist posted at Hyderabad for verification & signature.

High end tests like Sero Microbiology tests: Rapid Plasma Regain (RPR) Kit Test/VDRL, HIV, RA,

ASO, HBsAg, HCV are available in the basket of laboratory services being rendered under PPP mode, free of cost to the beneficiaries, which in turn is instrumental in reducing Out of Pocket Expenditures (OOPE) to some extent. Typhi Dot has not been conducted by the service provider.

Certain areas have also been identified for midway corrections during the field visits, associated with the study. Addressing these issues will go in a long way towards people's benefit, satisfaction vis-à-vis will also make the health care delivery services through public health facilities more comprehensive and attractive to larger segments of population in Arunachal Pradesh.

Laboratory Service is being provided in Arunachal Pradesh through mixed model in i.e., both in-house & PPP in Arunachal Pradesh but Free Laboratory Service is only through PPP mode in since 2019.

Free laboratory services are provided to pregnant women only under in-house laboratory. Due to shortage of Nishchay (UPT kit by FP Division) UPT also included under PPP mode. UPT is only single test and cost Rs. 30 to 40/ test in open market, it should not be a part of PPP mode as Rs. 150/test at PHC level and Rs. 375 / test at District hospital level are being billed by the service provider to State NHM. With the same amount, State can test for 7 to 10 women for pregnancy.

A Cost – effective analysis may also need to be considered through the Department of Applied Economics of an Institute/University, in view of 27.7% of the total patients availed only single test under PPP Lab Services during April to July 2022-23 e.g 4.7 % single test for Random Blood Sugar, 6.1 % for Blood Group (ABO-Rh typing), 1.3 % for Urine HCG (Pregnancy Test), 7.6% for CBC and 8.0 % for any other tests and for the opted model, eg. A single rate for a complete basket of different pre-identified tests vs. rate/individual test along with utilization of 'individual tests' should be monitored both by the state government and by the service provider.

The packages of diagnostic services, available at Primary Health Care level needs to be revisited and a larger basket of Laboratory services may be provided as a part of the Comprehensive Primary Health Care guideline.

Optimal utilization of the Laboratory Technicians already recruited either by the State H&FW department or under contract with National Health Mission or Arunachal Pradesh State AIDS Control Society or any other organization at a public health facility, wherein PPP run FDI services are also in place, need to be further reviewed. If required a study on 'Workload Indicators of Staffing Need (WISN)' may be considered through a Medical College for further streamlining the laboratory services in the State of Arunachal Pradesh.

In addition, the laboratory technicians, already employed, are under dire need of re-orientation training and to know about the newer techniques in the field of diagnostics (pathological) including getting acquainted with use of newer automated laboratory instruments/ equipment.

In view of commissioning of FDI services through PPP mode up to PHC level, the mapping of the unutilized high-end equipment, lying idle in certain facilities, also need to be undertaken through the BEMMP dashboard for decision-making for optimal utilization of these high-end equipment along with further strengthening of the Supply Chain Management System related to supplies of reagent, Kits and consumables to the laboratories running in in-house mode. All basic laboratory tests may be conducted through in-house mode only, irrespective of the level of the facilities and there must be an exit plan from outsourced services for which the in-house laboratory services need to be further streamlined and strengthened through timely utilization of the GIAs provided under XV FC and PMA-BHIM.

Chapter -I

Introduction

Household Out-of-pocket expenditure amounts on health care services is nearly to 55.1% out of Total Health Care Expenditure in India¹, one of the highest rates globally². One-time high expenditure can deplete household resources so considerably as to induce impoverishment (NSS, 2015). The Government health expenditure as share of GDP has increased from 1.15% to 1.35% between 2013-14 and 2017-18². Out-of-pocket expenditure on diagnostic services during hospitalization 10.2 % out of total expenditure in Private Hospital in Rural Areas and 18.0 % in Public Hospital Rural areas. The same is slightly lower in urban areas³.

Private providers play a vital role in the health sector in India to fulfil all the necessary need of the growing population like India. Public-Private Partnership or PPP model is not new in India, which has emerged as one of the instruments for improving the health of the population under the Tenth Five Year Plan (2002-2007)⁴. West Bengal Government gave importance to increase stake of private sector through PPP model for diagnostic services including others during 2009-2010 in to reduce Out of pocket expenditure on healthcare⁵.

According to the CDC, 14 billion lab tests are ordered annually, and 70% of medical decisions depend on laboratory results⁶. Operating at only 4–5% of the total healthcare expenditure, the medical diagnostics industry influences the remaining 95% of the cost⁷. Around 70% of medical decisions regarding early disease diagnosis, patient prognosis and treatment selection are based on laboratory diagnostic results⁸. Along with treatment regime selection, diagnostic test results help in monitoring of the patient condition during recovery and follow-up.

Free Diagnostic Service Initiative in India:

India has a public health system with a stated commitment to provide universal access to free healthcare. Substantial investments in the National Health Mission (NHM) have resulted in improvement of access and coverage in public health facilities. However, diagnostic services are still largely unavailable in public health facilities hampering evidence-based care and delivery of essential and universal healthcare. Out-of-pocket expenditures on diagnostics continues to be high and an area of concern.

To address the urgent need for accessible and quality diagnostics in public health facilities, the Ministry of Health and Family Welfare, Government of India under the aegis of National Health Mission launched the Free Diagnostics Scheme in July 2015.

The objective of the Free Diagnostic Service Initiative program is to ensure availability and access to diagnostic tests at public health facilities so that providers can make rational decisions regarding treatment and patients benefit by getting their tests conducted within the facility free of cost to reduce out of pocket expenditure incurred by patients on diagnostics. Provision of appropriate diagnostics is necessary and critical in providing adequate comprehensive healthcare services in public health facilities.

To streamline the processes and standards related to diagnostic services, MoHFW has formulated the NHM Free Diagnostic Services guidelines that were shared with the States/UTs on 2nd July 2015.

The guidelines of 2015 suggest a minimal set of essential diagnostics to be made available across all the existing level of care (public health facilities) to reduce variability in coverage and unequal access and that includes 9 tests at Sub Centre level, 19 tests at PHC level, 39 tests at CHC level and 57 tests at SDH/ DH level. The tests encompass haematology, serology, biochemistry, clinical pathology, microbiology, and radiology.

The National Health Policy 2017 recognises that making available free diagnostics at public health facilities is one of the most effective ways for achieving the goal of providing universal healthcare. The guidelines envisage provision of expanded basket of quality tests in all public health facilities through hub and spoke mode of service delivery.

In 2019, a Guidance Document for Implementing Laboratory Services in States prepared by MoHFW Govt. of India with more details about number of tests (SC/ HWC-SC: 14, PHC/HWC-PHC: 64, CHC: 97, SDH: 111, DH: 134) to be performed and types of equipment required at each level of Health Facilities for performing the indicated tests was released and shared with the States. The guidance document also emphasised on how to improve in-house diagnostic facility through Hub & Spoke model.

SC/PHC/CHC/SDH/DH facilities in states need to strengthen to enable delivery of diagnostic services, especially low-cost high volume diagnostic tests by the public health facilities. However, in such facilities where the medical equipment, human resource, or infrastructure for performing tests does not exist, outsourcing (PPP) mechanism for the time being could be used.

Free diagnostic services in Arunachal Pradesh have been implemented in PPP mode. ASR Hospitals (India) Pvt. Ltd. is the outsourcing partner in Arunachal Pradesh.

NHM is providing support to implement Free Diagnostic Service in each State. Rs. 736.93 Lakh was approved in RoP of FY 2021-22 for the state of Arunachal Pradesh to provide free diagnostic through the PPP mode from PHC to District Hospitals. An amount of Rs. 1109.0 Lakh was estimated in the State PIP 2022-23 for free diagnostic services through PPP mode.

A dashboard has been developed by ASR Hospitals (India) Pvt. Ltd., but it is not linked with the NHM Arunachal Pradesh website. Facility wise, district wise, patient wise and type of test wise data are available in the portal. The same performance of Laboratory Services is also being uploaded in the HMIS web portal. Only report of few tests like Hb, HIV, syphilis, X-ray with their total number is available in the HMIS web portal.

OBJECTIVE:

Broad objective to evaluate the Free Diagnostic Laboratory Services (FDI) in Arunachal Pradesh as routine activities with the followings:

- a. To assess the efficiency of the PPP service provider and effectiveness of Free Diagnostic Laboratory Services in Arunachal Pradesh.

- b. To assess the quality of laboratory services provided to patients at government health facilities through PPP mode.
- c. To review and evaluate Service Provider compliance to the prescribed clauses as per MoU between State Govt. & the services provider considering the FDI guideline.
- d. To understand the issues during the implementation of the programme from State & service providers lenses.

METHODOLOGY OF EVALUATION:

The evaluation was conducted by the HCT division of RRC-NE by using schedule. The evaluation was done through (1) Literature review (2) desk review of the data from the dashboard developed by the service provider, HMIS web portal and (3) through an in-depth interview with State Nodal Officer- Free Diagnostic Service, Medical Superintendent/ MO i/c of identified health facilities, Laboratory Technician, PPP service provider and beneficiaries.

STUDY DESIGN:

- a. Four districts viz. West Siang, Shi Yomi, Lohit and Changlang were selected from different geographical region and far from the Head Quarter district for the evaluation of Free Diagnostic Services. Tomo Riba Institute of Medical Science, the earlier State hospital now Medical College, also selected in addition to above mentioned four districts.
- b. In all four districts, the study team visited 3 (Three) District Hospital (DH), 4 (Four) CHC and 5 (Five) PHC/HWC-PHCs

Day	Districts	Facilities
23-08-2022	Changlang	1. Nampong PHC 2. Kharsang PHC 3. Diyun CHC
	Papum Pare	1. TRIHMS, Naharlagun
24-08-2022	Changlang	1. Changlang DH
25-08-2022	Lohit	1. Loiliang PHC
	West Siang	1. Aalo GH 2. Kamba CHC
26-08-2022	Lohit	1. Medo PHC 2. Wakro CHC
	Shi-Yomi	1. Tato PHC (H&WC)
27-08-2022	Lohit	1. Tezu DH
	Shi-Yomi	2. Menchuka CHC

- c. The health facilities were identified based on nos. of diagnostic (laboratory) equipment available in the Laboratory, nos. of Laboratory Technicians deployed, and geographical locations. An attempt was made to find out the rationale of using outsourcing model for identified diagnostic tests.

TOOLS FOR DATA COLLECTION:

Quantitative data & other relevant information (qualitative) was collected through a schedule with multiple choice answers & few open-ended discussion points from the key informants, i.e. State Nodal Officer, Medical Superintendent, MO i/c and Lab. Technician. Separate Tools was used for State Nodal Officer, Medical Superintendent/ MO i/c & Laboratory Technician and Service provider.

KEY AREAS FOR EVALUATION

Following were the key areas for evaluation:

- i. Access to laboratory services – service provider’s and in-house
 - a. Total number of government health facilities (DHs, SDHs, CHCs and PHCs) serviced by the PPP service provider and turnaround time for commencement of its services.
 - b. Total number of patients who availed diagnostic services through the service provider and in-house laboratories and total number of tests conducted, test mix, patient to test ratio etc.
 - c. Availability of services in the PPP run and in-house laboratories.
 - d. Synergy of services of in-house laboratories with that of the service provider.
- ii. Quality of laboratory services – service provider’s and in-house
 - a. Quality assurance at laboratories: Equipment (adequacy and availability), human resources, training, standard operating procedures, quality of processes, supply chain management, internal quality control (IQC), external quality assurance scheme (EQAS), readiness of service provider for NABL accreditation etc.
 - b. Test results: Incidence of erroneous results, repeat sampling, incorrect results and relay of information to clinicians about critical results.
 - c. Patient satisfaction: OOPE, waiting time, comfort during sample collection procedure, turnaround time for receiving test reports etc.
- iii. Monitoring of services
 - a. Monitoring by government: Feedback/grievance mechanism, periodic reviews/audits, surprise visits, data validation, tests which are being outsourced despite in-house capacity, penalties to private providers etc.
 - b. Monitoring by private provider: Allocation of resources for monitoring, feedback, surprise visits, audits etc.
 - c. Third party monitoring
- iv. Adherence of service provider to the Agreement clauses
- v. Satisfaction of the service provider
 - a. Payments: Procedure for submitting bills for reimbursement, periodicity and mode of payments, challenges (if any) in receiving payments etc.
 - b. Support from the government for rollout of services: Provision of requisite infrastructure etc.

TEAM MEMBERS:

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General observation & major findings:

1. Laboratory Service is being provided in through mixed model in i.e., in-house & PPP in Arunachal Pradesh but Free Laboratory Service is only through PPP mode in since 2019.
2. Free laboratory services are provided to pregnant women only under in-house laboratory. Due to shortage of Nishchay (UPT kit by FP Division) UPT are also included under PPP mode. UPT is only single test and cost Rs. 30 to 40/ test in open market, it should not be a part of PPP mode as Rs. 375 / test are being claimed by the service provider at the district Hospital and Rs. 150/- test in the PHC. State may with the same amount can test for more women (5 to 10) for pregnancy test.
3. The MoU was signed on 19th February 2019 between NHM, Arunachal Pradesh and ASR Hospitals (India) Pvt. Ltd. for single test to 50 different tests @ Rs. 375 / sample per patient at District Hospital. Similarly, single to 17 tests at PHC @ Rs. 150 / sample per patient and single to 38 tests at CHCs @ 262.5 / sample per patient with an escalation rate of 5% per year.
4. The indicated cost per sample, as in the above Sl. 3 is not clear, as the data base is able to give us the total number of tests done per sample but is not able to give us the number of beneficiaries or average number of tests done per beneficiaries as these data is in the back end. In addition, data definition for 'Sample' needs further clarification, eg. Whether fasting and PP blood samples are taken as one or two samples? as it is associated with financial implications. The service provider informed that they are charging only maximum 2 (Two) samples per patient, but documentation was not found in the signed MoU.
5. It is also found that number of tests per sample were conducted had been almost static around 3.1 to 3.3 since inception.
6. Most of the routine tests are done free of cost under the scheme through PPP mode. However, high-end tests like Thyroid hormone tests, tumor markers and histopathology are not included defeating the main objective of the FDSI programme as only basic tests are being conducted through PPP mode.
7. In-house laboratory is capable to conduct few high-end low volume tests as equipment & specialist HR is available.
8. The PPP services provider has not engaged a single specialist like Pathologist, Microbiologist, Biochemist in the laboratory of Arunachal Pradesh.
9. Many tests like CSF analysis, Ascitic Fluid analysis, Pericardial Fluid analysis, Synovial Fluid analysis, Coombs test are not being conducted by the PPP service provider though mentioned in the TRF due to lack of Pathologist.
10. In conclusion, it may be expressed that 'no value addition', as such, has been made with PPP run laboratory services, except the lesser OOPE for the beneficiaries.
11. State Nodal officer of FDSI informed that the TRF has been changed and the list of tests under PPP are revised, but old TRF are still being used by the serviced provider.
12. Around 8 to 10 tests are being conducted at PHC through in-house mode.
13. The service provider has established one mother laboratory in TRIHMS, Naharlagun but mother laboratory is also conducting basic tests only.
14. The NABL accreditation of the Laboratories is still not completed. TRIHMS, BPGH Pasighat, GH Aalo, DH Tezu and DH Namsai are under process for NABL certification. The same five laboratories also participated for EQAS.

15. All laboratories in different level of health facilities under the PPP Service provider are using Laboratory Management Information system. The software captures information about the TRF registration, Patient Information, Critical Registers, Rejected Sample List, Print Report and TAT.
16. All test reports are sent to Hub via LIS software for electronic signature of specialist. It does not help for quality laboratory services instead just signature of the specialist to maintain legal obligations.
17. All record of laboratory tests is maintained only electronic mode. Report is shared with the patients next day only. Critical results are provided to the attended of the patient within 1 hour at Hub and has been informed the concerned doctor by phone call if necessary.
18. Only 0.2 % of tests out of total reported beyond TAT in a month however the diagnostic report has been collected by the patient in next day only. Sample rejected percentage per month was 0.1% as informed by the PPP service provider. How ever the data is not available in the dashboard through State user id.
19. The PPP service provider is conducting Malaria, Dengue, HIV, RPR / VDRL, UPT, HBsAg and HCV Rapid Tests.
20. Space provided for laboratory / sample collection point to the PPP service provider in different level of health facilities is rental free.
21. The service provider has signed MoU with local NABL certified Laboratory Frontier Diagnostics for laboratory tests during breakdown of any laboratories functioning through PPP mode.
22. Power fluctuation & frequent power cut are prime issue in almost all visited health facilities. Internet facilities was also not available in remote health facilities.

Recommendation for improvement:

1. The State is suggested to made available all diagnostic services free of cost to the patients whether it is through in-house or PPP mode.
2. The State has already employed more HR in laboratories compared to PPP service provider and State run laboratories seem to be better equipped.
3. In-house laboratory may strengthen through providing financial support to procure reagents so that the diagnostic services can be made free of cost through both in-house and PPP mode. Either lumpsum amount or reimburse per test basis may support to the in-house laboratories.
4. Sample collection point should be one for patients whether the sample goes to the in-house or PPP lab and to follow the 'single puncture' guideline.
5. All rapid tests must be conducted through only in in-house mode instead of PPP and State should provide cost or in kind for the same directly to the health facility or through district.
6. High end low volume tests may be included in the list of laboratory tests through PPP mode instead of basic & kit-based laboratory tests after mutual consent of both the State & service provider. The state needs to take a call on the types of services to be provided through outsourced model and accordingly the existing MoU needs to be reviewed.
7. The MoU may be revised through mutual consent and the rate of diagnostic services should be per patient instead of sample per patient to avoid confusion and get proper record for number of patients diagnosed.
8. Record keeping in the in-house laboratory needs to be strengthened by putting LMIS in place, a single register may be utilized for recording of patients and corresponding test.

9. State may utilize DVDMS as supply chain management system for POC test kits, reagents & consumables supplies as DVDMS has been used up to the PHC level for indenting of medicine.
10. The state should focus on Integration of Laboratories and integration of Lab Technicians as well. It was observed that the Lab Technicians are performing specific tests for the programme under which they are appointed. All the Lab technicians in a Health facility should be brought under one roof which is designated as Integrated Laboratory and they should perform all the tests on shifts to provide 24x7 service.
11. The state may also plan for skill development of Lab and x-ray technicians on use of new equipment including high end equipment in support of the original equipment manufacturers.
12. The free diagnostic services initiative of the Govt. of India needs to be made clear to all the service providers and programme officers. The initiative intends to provide all the diagnostic services free of cost to the patients may it be inhouse or through involving PPP partners, to reduce the out-of-pocket expenditure.
13. Central Government has taken initiative to strengthen diagnostic services at different level of health facilities by implementing Block Public Health Laboratories under Block Public Health Unit at Block Level and Integrated Public Health Laboratories at District Level through XV FC & PM-ABHIM in addition to National Health Mission fund. XV FC & PM-ABHIM fund may also be utilized for creating a resilient the laboratory services in the whole state. Hub & Spoke model may also be explored through XV FC & PM-ABHIM fund.

The state needs to take necessary initiatives to strengthen the in-house Laboratory services by using XV FC & PM-ABHIM fund to strengthen only the in-house laboratory services. The outsourcing of services to the PPP partner should be made for high end tests and other tests where there is no Laboratory Technicians in place.

Chapter -II

About the PPP Service Provider & MoU:

Laboratory Services is being provided through mixed model i.e., in-house & PPP in Arunachal Pradesh but Free Laboratory Services is being provided only through PPP mode since 2019. The state has signed the contract with ASR Hospitals (India) Pvt. Ltd. through an open tendering process adhering to RFP provided in the NHM FDI guidelines.

State had floated the tender was subsequently awarded to L1 bidder, that was ASR Hospitals (India) Pvt. Ltd. The MoU was signed on 19th February 2019 between NHM, Arunachal Pradesh and ASR Hospitals (India) Pvt. Ltd. for single test to 50 different tests @ Rs. 375 / sample per patient at District Hospital. Similarly, single to 17 tests at PHC @ Rs. 150 / sample per patient and single to 38 tests at CHCs @ 262.5 / sample per patient with an escalation rate of 5% per year.

Initially the contract value was defined as below:

Contract value = (Number of Sample) x (Rate Quoted) x (365 days) x (Nos. of years).

Total 25 (Twenty-five) HUB and 33 (Thirty-three) spoke laboratories are being functioned by the PPP the service provider.

Following health facilities would be covered through PPP mode as per the Tender Document: No. APRHM / PATHO-LS/17-18 dated 21/11/2017

Table 1: List of health facilities providing laboratory services through PPP mode

SL.	Name of Hospital	Name of District	Population	Services provided at present
1	TRIHMS, Naharlagun	Papum Pare	111242	Yes
2	Pasighat GH	East Siang	78561	Yes
3	Tawang DH	Tawang	27742	Yes
4	Bomdila GH	WestKameng	20024	Yes
5	Seppa DH	EastKameng	18,334	Yes
6	Ziro GH	Lower Subansiri	22,586	Yes
7	Koloriang DH	Kurung Kumey	4455	Yes
8	Palin DH,	Kra Dadii	2142	Yes
9	Daporijo DH	Upper Subansiri	25066	Yes
10	Aalo GH	West Siang	34753	Yes
11	Yingkiong DH	Upper Siang	16579	Yes
12	Pangin CHC	Siang	3316	Yes

SL.	Name of Hospital	Name of District	Population	Services provided at present
13	Anini DH	Dibang Valley	6225	Yes
14	Roing DH	Lower Dibang Valley	38111	Yes
15	Tezu DH	Lohit	28801	Yes
16	Namsai DH	Namsai	23836	Yes
17	Changlang DH	Changlang	19785	Yes
18	Khonsa GH	Tirap	13206	Yes
19	Longding DH	Longding	12964	Yes
20	Hayuliang DH	Anjaw	9514	Yes
21	Ruksin CHC	East Siang	19288	Yes
22	Sagalee CHC	Papum Pare	3869	Yes
23	Doimukh DH	Papum Pare	10632	Yes
24	Basar DH	Lepa Rada		Yes
25	Miao CHC	Changlang	17590	Yes
26	Likabali DH	Lower Siang	7847	Yes
27	Chowkham CHC	Namsai	7939	Yes
28	Mahadevpur CHC	Namsai	7439	Yes
29	PHC, Lathao	Namsai	3642	Yes
30	Yazali CHC	Lower Subansiri	4060	Yes
31	Mebo CHC	East Siang	4190	Yes
32	Nari CHC	Lower Siang	3036	Yes
33	Boleng CHC	Siang	5977	Yes
34	Yachuli PHC	Lower Subansiri	2661	Yes
35	Piyong PHC	Namsai	4364	Yes
36	New Mohang PHC	Namsai	1079	Yes
37	Yagrung PHC	East Siang	1379	Yes
38	Rani PHC	East Siang	1706	Yes
39	Bilat PHC	East Siang	3598	Yes
40	Koyu PHC	Lower Siang	1159	Yes
41	Namsing PHC	East Siang	2144	Yes
42	Balek PHC	East Siang	495	Yes
43	Kora (Korang) PHC	East Siang	552	Yes

SL.	Name of Hospital	Name of District	Population	Services provided at present
44	Borguli PHC	East Siang	1975	Yes
45	Chimpu PHC	Papumpare	2898	Yes
46	Mengio PHC	Papumpare	3728	No
47	Hollongi PHC	Papumpare	463	Yes
48	Toru PHC	Papumpare	628	Yes
49	Basar Nalla PHC	Papumpare	1983	Yes
50	Taraso PHC	Papumpare	4366	Yes
51	Leporiang PHC	Papumpare	2701	Yes
52	Jote PHC	Papumpare	1492	Yes
53	Mukto PHC	Tawang	1689	No

Additional health facilities under PPP:

54	Rumgong CHC	Siang		Yes
55	Itafort UPHC	Capital		Yes
56	Bordumsa CHC	Changlang		Yes
57	Banskata UPHC	East Siang		Yes
58	Telam PHC	Lower Siang		Yes
59	Katan PHC	Upper Siang		Yes

Following Tests were to be done as per the Tender Document: No. APRHM / PATHO-LS/17-18 dated 21/11/2017

Table 2a: PHC Level

Sl.	Name of Test	As per TRF	Conducted
Clinical Pathology			
1	Hemoglobin Estimation (Hb)#	Y	Y
2	Total Leukocyte (TLC)	Y	Y
3	Differential Leukocyte Count (DLC)	Y	Y
4	Platelet Count	Y	Y
5	MP (Slide Method)	Y	Y
6	ESR	Y	Y
7	Clotting Time (CT)*	Y	Y
8	Blood Group (ABO-RH typing)	Y	Y

Sl.	Name of Test	As per TRF	Conducted
Biochemistry			
9	Blood Sugar*	Y	Y
10	S.Bilirubin	Y	Y
Sero-Microbiology			
11	Rapid Plasma Regain (RPR) kit Test	Y	Y
12	HIV Test	Y	Y
13	Sputum for AFB**	Y	Under NTEP
14	Dengue (Rapid test)	Y	Y
15	Malaria (Rapid Test)	Y	Y
Urine Analysis			
16	Urine Sugar/ Albumin/Leucoyte Esterase#	Y	Y
17	Urine Pregnancy Test (UPT)#	Y	Y
Stool Analysis			
18	Stool for OVA and cyst	Y	Y
19	Water Quality Testing -H2S Strip test for Faecal Contamination	Y	No

Table 2b: CHC Level

Sl.	Name of Test	As per TRF	Conducted
CLINICAL PATHOLOGIST			
1	Hemoglobin Estimation (Hb%)	Y	Y
2	Total Leukocyte count (TLC)	Y	Y
3.	Differential Leukocyte count (DLC)	Y	Y
4.	MP (Slide Method/Microscopy)	Y	Y
5.	ESR	Y	Y
6.	PT, INR	Y	Y
7	CBC (Complete blood count &ESR)	Y	Y
8.	Blood Group (ABO & RH typing)	Y	Y
9.	Total Red Blood Cell Count	Y	Y
10.	Platelet cell count (Microscopy)	Y	Y
11.	RBC parameters (PVC, MCH, MCV etc)	Y	Y
Biochemistry			
12	Blood Sugar (F&PP), Blood Sugar (F)	Y	Y
13.	Renal Function Test (S. Urea & S. Creatinine)	Y	Y

Sl.	Name of Test	As per TRF	Conducted
14.	Liver Function Test [S. Bilirubin(T/D), SGOT&SGPT, S. Alk phosphates, S. Protein (T & Albumen)]	Y	Y
15	S Bilirubin (T/D)	Y	Y
16.	Lipid Profile (S. cholesterol/Triglyceride/VLDL/HDL/Amylase)	Y	Y
17.	SGOT	Y	Y
18.	SGPT	Y	Y
19.	S. Alkaline Phosphates	Y	Y
20.	S. Total Protein	Y	Y
21.	S. Albumin	Y	Y
22.	S. Total Cholesterol	Y	Y
23.	S. Triglyceride	Y	Y
24.	SVLDL	Y	Y
25.	S.HDL	Y	Y
26.	S. Amylase	Y	Y
SEROLOGY			
27	RPR Rapid test	Y	Y
28.	HIV Rapid test	Y	Y
29.	Dengue (Rapid test)	Y	Y
30.	Malaria (Microscopy)	Y	Y
31.	Sputum for AFB	Y	By NTEP
32	Urine Sugar/ Albumin	Y	Y
33	Urine Pregnancy Test (UPT)	Y	Y
34	Urine Microscopy	Y	Y
35.	Urine complete by strip method	Y	Y
STOOL			
36	Complete Stool Examination	Y	Y

Table 2a: District Hospital Level

S/No	Name of Test	As per TRF	Conducted
CLINICAL PATHOLOGIST			
1	Hemoglobin Estimation (Hb %)	Y	Y
2	Total Leukocyte count (TLC)	Y	Y
3	Differential Leukocyte count (DLC)	Y	Y
4	MP (Slide Method/Microscopy)	Y	Y
5	ESR	Y	Y

S/No	Name of Test	As per TRF	Conducted
6	PBF (peripheral blood film exam)	Y	Y
7	Total Eosinophilic count (TEC)	Y	Y
8	PT, INR	Y	Y
9	CBC (Complete blood count &ESR)	Y	Y
10.	Blood Group (ABO & RH typing)	Y	Y
11.	Total Red Blood Cell Count	Y	Y
12	Platelet cell count (Microscopy)	Y	Y
13	RBC parameters (PVC, MCH, MCV etc)	Y	Y
14	Coomb's Test (Direct)	Y	Only few
15	Coomb' s Test (Indirect)	Y	Only few
16	CSF Analysis (Cell Count, Morphology& Biochemistry)	Y	No
17	Pleural Fluid Analysis (Cell Count, Morphology& Biochemistry)	Y	No
18	Ascitic Fluid Analysis (Cell Count,	Y	No
	Morphology& Biochemistry)	Y	No
19	Pericardia! Analysis (Cell Count, Morphology& Biochemistry)	Y	No
20	Synovial Fluid Analysis (Cell count,	Y	No
	morphology &Biochemistry)	Y	No
Biochemistry			
21	Blood Sugar (F&PP)	Y	Y
22	Blood Sugar (F)	Y	Y
23	Renal Function Test (S. Urea & S. Creatinine)	Y	Y
24	Blood Urea	Y	Y
25	S. Creatinine	Y	Y
26	Liver Function Test [S. Bilirubin(T/D),	Y	Y
	SGOT&SGPT, S. Alk phosphates, S. Protein (T & Albumen)]	Y	Y
27	S Bilirubin (T/D)	Y	Y
28	Lipid Profile (S. cholesterol / Triglyceride /VLDL/HDL/Amylase)	Y	Y
29	SGOT	Y	Y
30	SGPT	Y	Y
31	S. Alkaline Phosphates	Y	Y
32	S. Total Protein	Y	Y
33	S. Albumin	Y	Y
34	S. Total Cholesterol	Y	Y
35	S. Triglyceride	Y	Y
36	SVLDL	Y	Y

S/No	Name of Test	As per TRF	Conducted
37	S.HDL	Y	Y
38	S. Amylase	Y	Y
SEROLOGY			
39	RPR Rapid test	Y	Y
40	HIV Rapid test	Y	Y
41	Dengue (Rapid test)	Y	Y
42	Malaria (Microscopy)	Y	Y
43	Sputum for AFB	Y	By NTEP
44	Urine Sugar/ Albumin	Y	Y
45	Urine Pregnancy Test (UPT)	Y	Y
46	Urine Microscopy	Y	Y
47	Urine complete by strip method	Y	Y
STOOL			
48	Complete Stool Examination	Y	Y

Sample transportation:

The laboratory technician in the spoke engaged by the PPP service provider is transporting the sample in cold box to the HUB on daily basis by using own vehicle or public transportation.

Human Resources to be deployed by the Service Provider as per Tender Document:

The service provider shall have to position trained phlebotomists for sample collection in all health facilities under the scope of services. Phlebotomist must have Diploma in Medical lab technology. Service Provider shall provide a signed report from qualified medical professional with minimum P.G qualification in related laboratory diagnostic specialty.

Total 109 Human Resources are deployed in the State for smooth operation of PPP mode laboratory services by ASR Hospitals (India) Pvt. Ltd. but they have not yet recruited a single specialist like Pathologist, Microbiologist and Biochemist in Arunachal Pradesh.

Table 3a: Distribution of HR provided by PPP service provider

Qualification	Total
Data Entry Operator	6
Lab. Tech.	78
Phlebotomist	20
Co-Ordinator	3
Store in-charge	1
House Keeping	1
Total	109

Table 3b: HR by type of health facilities

Type of health facilities	Data Entry Operator	House Keeping	Lab. Tech.	Phlebotomist	Store in-charge	Co-Ordinator	Grand Total
State Level						3	3
CHC			11	4			15
DH	6	1	61	8	1		77
PHC			5	8			13
UPHC			1				1
Total	6	1	78	20	1	3	109

Table 3a: Distribution of equipment in ASR Laboratory provided by PPP service provider & comparison with equipment in that in-house lab

State may have a greater number of equipment which are not yet tagged under BEMMP.

Sl.	Name of Equipment	PPP mode equipment	State Equipment
1	Fully Auto Biochemistry analyser	3	4
2	Semi Auto Biochemistry Analyser	24	36
3	5 Part haematology auto analyser	20	9
4	3 Part haematology auto analyser	5	8
5	Urine Analyzer	24	6
6	PT APTT Machine	17	
7	Coombs test Machine	7	
8	Electrolytes analyser	17	8
9	Elisa Reader	Nil	22
10	Fully Automatic Immunoassay Analyzer	Nil	2
11	Colorimeter	Nil	46
12	Microscope	4	355
13	Centrifuge (18 tubes)	20	Not collected
14	Centrifuge (12 tubes)	7	
18	Card Warmer	7	
20	Blood mixer	49	
21	Refrigerator	27	
22	Refrigerator (2000L)	1	
23	Dry Bath Incubator	24	
24	Syringe And Needle Destroyer	46	
25	Sample transfer box (ice box)	100	
26	Micro Pipettes	97	

Quality of the PPP Laboratory Services:

1. The service provider has engaged four members team from the existing HR (Co-Ordinator) to monitor the quality services. The services provider has not engaged any specialist in any of the health facilities which implies the first line of compromise of the quality of laboratory services.
2. The quality team go to all the centers to supervise the sample collection process, sample processing, quality control (EQAS and IQC), calibration, critical report, sample rejection and clinician/patient feedback.
3. The NABL accreditation of the Laboratories is still not completed. TRIHMS, BPGH Pasighat, GH Aalo, DH Tezu and DH Namsai are under process for NABL certification. The same five laboratories also participated for EQAS of CMC Vellore for 10 (Ten) parameters of Bio-Chemistry tests and 3 (Three) tests Dengue CBC, IGM & ASO of Ram Manohar Lohia Hospital (RML).
4. External audit of Hub laboratories is not conducted through any NABL accredited agency or laboratory.
5. Internal quality control has been done through a. batch QC b. split QC and c. company QC method. The PPP service provider has signed MoU with local NABL laboratory "Frontier Diagnostic" for quality control.
6. Biomedical Waste are disposed through the in-house process i.e deep burial, sharp pit etc. However liquid waste treatment facilities are not available.
7. Sample discard rate was less than 1 % as informed by the service provider but the data is not available in the dashboard for the State user id.

External Quality Assurance Scheme - First Monthly Summary

CHRISTIAN MEDICAL COLLEGE
DEPARTMENT OF CLINICAL BIOCHEMISTRY
CMC EXTERNAL QUALITY ASSURANCE SCHEME
MONTHLY SUMMARY REPORT - JULY 2022

Lab Code: 10043
Date of Report Published: 04/08/2022

Sl. No.	Analyte	Method/Reference Range	Analysed	No. of Participants	Min	Max	Mean	SD	CV	
1	GLUCOSE	SIEMENS	Agree	164	116.16	7.14	22.73	100 mg/dl	1.44	3.95
2	UREA	UREAS DV/ GLDM	Agree	166	127.52	7.37	9.49	120 mg/dl	1.27	1.46
3	CREATININE	Jaffe Kinetic Alkaline picrate	Agree	99	0.92	0.93	0.93	mg/dl	1.26	0.97
4	TRIGLYCERIDE	Glycerol est (Colorimetric)	Agree	161	1.99	10.91	6.91	1 mg/dl	2.44	0.92
5	TRIGLYCERIDE	Enzymatic - Colorimetric	Agree	172	0.96	0.51	0.52	0.10 g/dl	1.12	0.85
6	ALBUMIN	Bio-Rad Colorimetric	Agree	174	3.76	5.48	4.50	4.12 g/dl	2.00	0.92
7	UREIC ACID	Enzymatic - Ureaase Colorimetric	Agree	148	0.37	10.36	0.53	1.05	1.28	0.98
8	CHOLESTEROL	CHOD-PAP	Agree	163	112.28	7.11	8.23	100 mg/dl	0.79	1.19
9	TRIGLYCERIDE	Glycerol Phosphoric	Agree	166	215.14	4.25	17.38	100 mg/dl	1.56	2.66
10	UREA	UREAS DV/ GLDM	Agree	148	16.16	11.03	2.89	100 mg/dl	0.23	0.49
11	ALT	UV Spectrocolorimetric method PGP IP	Agree	166	122.33	0.82	12.07	100 IU/L	1.16	1.93
12	ALT	UV Spectrocolorimetric method PGP IP	Agree	148	16.16	11.03	2.89	100 IU/L	1.42	1.68
13	ALP	Phosphatase	Agree	166	122.33	0.82	12.07	100 IU/L	1.16	1.93
14	AMYLASE	Phosphatase	Agree	166	122.33	0.82	12.07	100 IU/L	1.16	1.93

RML - Quality Assurance Program (RML - QAP)

Lab Code No. 2451

BASIC SEROLOGY
FINAL RESULT ASSESSMENT

CYCLE NO.: 11 ROUND: 4 TOTAL PARTICIPANT: 308 DATE: 01/08/2022

Parameter	Total Responses	Your Result	All Lab Result	%	Remarks
S1- Dengue IgM	308	Non-Reactive	Reactive Non-Reactive : 03	99%	Within Consensus
S2- ASO	216	NA	Reactive Non-Reactive : 07	97%	-

Chief Coordinator: Dr. Sanjay Mahotra
Programme Director: Dr. Bandana Mahotra

Biochemistry EQAS

RML - Quality Assurance Program (RML - QAP)

HEMATOLOGY
ALL METHOD REPORT
Cycle: 11/2022
Round: 4 Date: 01/08/2022

Lab Code: 2451

Parameters	No. of Participants	Group Mean	Standard deviation (SD)	Uncertainty of Measurement (U _M)	Range (s & S ₀₁)	Your Value	Standard Deviation Index (SDI)
Hb (g/dl)	214	11.5	2.4	0.02	10.0-13.2	11.5	0.0
HbC = 107/gd	212	10.5	2.4	0.21	5.0-15.3	12.5	0.6
HbC = 107/gd	214	4.0	0.1	0.01	3.74-4.30	3.69	-0.4
HCT%	213	34.39	2.4	0.13	33.2-35.0	34.7	0.8
MCV fL	214	86.9	4.2	0.30	78.5-95.2	100.4	3.2
MCH pg	214	28.9	1.0	0.09	27.6-30.9	31.7	2.0
MCHC (g/dl)	214	33.1	2.0	0.17	31.1-37.2	31.0	-0.8
RDW-CV	214	20.0	2.0	1.03	17.4-21.4	24.4	1.3

Interpretation of SDI:
SDI Value < ± 3 0 - 0.5 0.6 - 0.9 1.0 - 2.0 2.1 - 2.9 > 3

Interpretation: Excellent Performance Good Performance Acceptable Performance Marginal Performance Unacceptable Performance Needs Urgent action

Peripheral Blood Smear (PBS):
Your Result: P-37, L-02, N-1
Consensus Result: L-10, O-R-4, P-11, R-21, P-08, L-13, S
Diagnosis: Lymphoproliferative Disorder
Chronic Lymphocytic Leukemia (CLL), Chronic Lymphoproliferative Disorder (CLPD), Chronic Lymphoid Leukemia

Hematology EQAS

Dengue EQAS

External Quality Assurance Scheme - First Monthly Summary

Beyond 3.0 Unacceptable performance. Action Signal.

LAB ADDRESS:
ASH HOSPITALS INDIA PRIVATE LIMITED
SARIN PECTIN GENERAL HOSPITAL, PASIGHAT
EAST SANGI
ARUNACHAL PRADESH 71102

Coordinator Contact Details:
Email: sllingo@cmcvellore.ac.in
Contact Number: 0415-2321102

Dr. Pamela Christodou
CMC EQAS Coordinator
Christian Medical College, Vellore

Homogeneity and Stability of the sample is passed.
Data in CMC EQAS reports is confidential.
CMC EQAS does not sub contract any components
**** End of Report ****

CMC Vellore

Chapter -III

Performance data analysis:

A total of 25,64,730 different types of tests have been conducted out of 8,23,053 nos. of samples in the PPP lab services since inception i.e. October 2019 up to the month of June 2022. There is no proper information about the nos. of patients availed the laboratory services as multiple samples were drawn from a single patient.

Table 4A, 4B and 4C clearly shows that, the number of patients & tests increases in every year. Number of tests per patient is an important indicator to monitor the basket of services availed by the patient as the rate contract is generally based on it. But in Arunachal Pradesh the Rate contract is based on numbers of samples drawn irrespective of the numbers of patients. The clause was revisited by

During the period of Global COVID pandemic 2020-21, a total of 1,76,191 samples were tested under free pathology services through PPP mode, on an average 14,683 samples /month. In the FY 2021-22, total 3,87,415 samples were tested under the diagnostic services and a total 12,06,946 tests which is around 3.3 tests per sample.

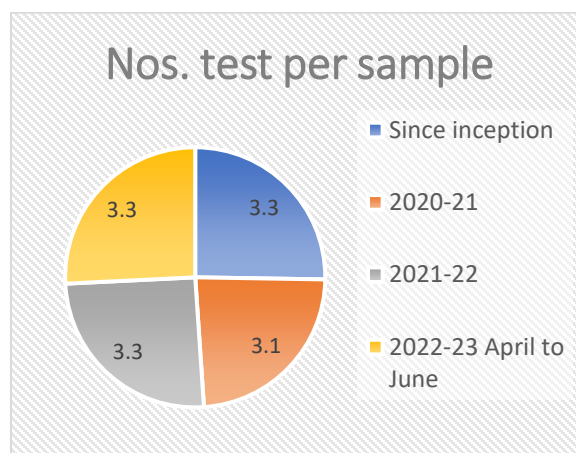
Total 79,445 patients availed PPP lab services in four districts during April to July 2022-23.

As mentioned, patient wise information is not available in the dashboard developed by ASR Hospitals (India) Pvt. Ltd. for Arunachal Pradesh PPP mode. Details of types of tests had been conducted for each & every patient during April to July 2022-23 was collected separately.

the State and maximum two samples per patients must be considered by the services

From the figure 1, it is also seen that number of tests per sample were conducted had been almost static around 3.1 to 3.3.

Figure 1:



It has been also observed that, only a single test has been done for 27.7 % of the total patients availed PPP Lab Services during April to July 2021-22. Similarly, any two tests for 15.5%, three tests for 12.8, four test for 12.0 %, 5 tests for 9.8%, 6 or more tests for 22.2 patients have been conducted.

Figure 2

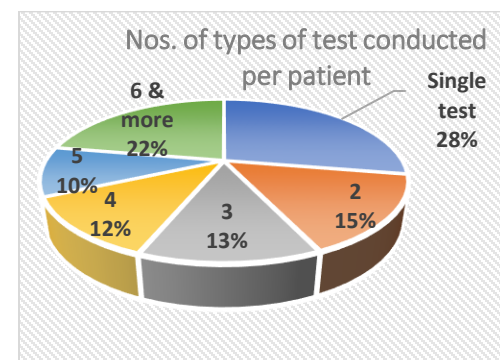
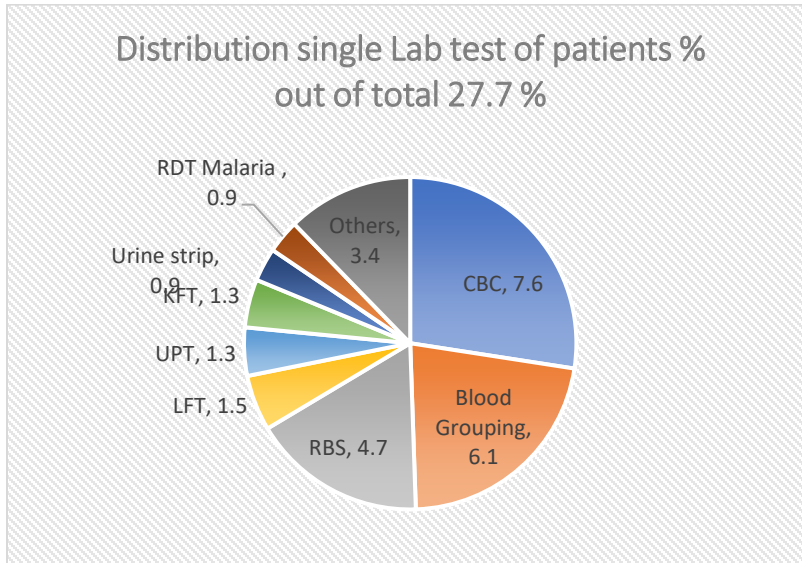


Figure 3 depicts that, 7.6% of single tests are being done for CBC, 6.1 % for Blood Group (ABO-Rh typing), 4.7 % for Random Blood Sugar, 1.5 % for LFT, 1.3% for Urine HCG (Pregnancy Test), 1.3 % for RFT, 0.9 % Urine for sugar and or protein is being done by Strip method, 0.9% for RTD malaria and 3.4 % for any other tests have been conducted during April to July 2022-23.

Figure: 3



Around 70% of medical decisions regarding early disease diagnosis, patient prognosis and treatment selection are based on laboratory diagnostic results. It is found that based on the Table 4.A Hayuliang DH (145.6 %), Changlang DH (112.9%), Palin DH (237.7%), Koloriang DH (185.1%) and Daporijo DH (111.7%) sample were tested against OPD & IPD registered patients in year 2020-21. Similarly, more than 100% samples were tested for few health facilities in the year 2021-22 and during April to June 2022-23. The above analysis based on number of samples; it could not be done based on number of patient as it is not available in the dashboard.

It is also seen that the many health facilities like Anini DH, Pasighat DH, Ziro DH, Namsai DH, TRIHMS, Aalo GH are conducting good numbers of tests in the in-house laboratory compared to the existing PPP mode. Pasighat DH has conducted more tests in the in-house laboratory than PPP service provider during April to June in 2022-23.

Table 4 A.: District Hospital wise distribution of OPD, in-house & PPP mode lab tests 2020-21

District Hospital wise distribution of OPD, in-house & PPP mode lab tests 2020-21							
Sl.	District Name	Facility Name	Functional Bed	IPD as per HMIS	OPD (Allo) as per HMIS	Total Tests Conducted in-house mode	Nos. of different tests conducted PPP mode
1	Anjaw	Hayuliang DH	43	186	5133	2013	22760
2	Changlang	Changlang DH	85	553	10732	3677	24043
3	Dibang Valley	Anini DH	30	111	5369	2211	5880
4	East Kameng	Seppa DH	60	1739	21348	1686	46632
5	East Siang	Pasighat DH	120	6697	46852	60345	84325
6	Kra Daadi	Palin DH	50		2149	644	13421
7	Kurung Kumey	Koloriang DH	50	694	2903	863	27295
8	Leparada	Basar DH	40	430	9031	880	5789
9	Lohit	Tezu GH	88	2109	24216	6587	33842
10	Longding	Longding DH					17566
11	Lower Dibang Valley	Roing DH	72	598	30957	5676	41963
12	Lower Siang	Likabali DH	20	426	11541	1662	12750
13	Lower Subansiri	Ziro DH	100	477	17035	4856	22567
14	Namsai	Namsai DH	27	1587	22317	5350	42652
15	Papum Pare	TRIHMS	350	7730	272545	18360	446929
16	PAPUMPARE	Doimukh DH					7325
17	Tawang	Tawang DH	38	1033	19890	6112	31580
18	Tirap	Khonsa GH	59	612	6560	1707	10618
19	Upper Siang	Yingkiong DH	32	686	11782	4543	30426
20	Upper Subansiri	Daporijo DH	84	1618	14455	0	61804
21	West Kameng	Bomdila GH	31	710	13827		31599
22	West Siang	Aalo GH	80	558	40263	9701	92129
Total			1459	28554	588905	136873	1113895

Table 4 B.: District Hospital wise distribution of OPD, in-house & PPP mode lab tests 2021-22

District Hospital wise distribution of OPD, in-house & PPP mode lab tests 2021-22						
Sl.	District Name	Facility Name	IPD as per HMIS	OPD (Allo) as per HMIS	Total Tests Conducted in-house mode	Nos. of different tests conducted PPP mode
1	Anjaw	Hayuliang DH	215	5133	2013	22760
2	Changlang	Changlang DH	573	10732	3677	24043
3	Dibang Valley	Anini DH	80	5369	2211	5880
4	East Kameng	Seppa DH	1382	21348	1686	46632
5	East Siang	Pasighat DH	7111	46852	60345	84325
6	Kra Daadi	Palin DH	1014	2149	644	13421
7	Kurung Kumey	Koloriang DH	653	2903	863	27295
8	Leparada	Basar DH	502	9031	880	5789
9	Lohit	Tezu GH	1735	24216	6587	33842
10	Longding	Longding DH				17566
11	Lower Dibang Valley	Roing DH	605	30957	5676	41963
12	Lower Siang	Likabali DH	699	11541	1662	12750
13	Lower Subansiri	Ziro DH	921	17035	4856	22567
14	Namsai	Namsai DH	2479	22317	5350	42652
15	Papum Pare	TRIHMS	12026	272545	18360	446929
16	PAPUMPARE	Doimukh DH				7325
17	Tawang	Tawang DH	1285	19890	6112	31580
18	Tirap	Khonsa GH	896	6560	1707	10618
19	Upper Siang	Yingkiong DH	595	11782	4543	30426
20	Upper Subansiri	Daporijo DH	1404	14455	0	61804
21	West Kameng	Bomdila GH	934	13827		31599
22	West Siang	Aalo GH	2596	40263	9701	92129
Total			37705	588905	136873	1113895

Table 4 C: District Hospital wise distribution of OPD, in-house & PPP mode lab tests 2022-23 (April to June)

District Hospital wise distribution of OPD, in-house & PPP mode lab tests 2022-23 (Ap-June)						
Sl.	District Name	Facility Name	IPD as per HMIS	OPD (Allo) as per HMIS	Total Tests Conducted in-house mode	Nos. of different tests conducted PPP mode
1	Anjaw	Hayuliang DH	130	1477	761	3801
2	Changlang	Changlang DH	170	2655	502	4165
3	Dibang Valley	Anini DH	49	1777	993	1590
4	East Kameng	Seppa DH	264	7834	1816	16510
5	East Siang	Pasighat DH	1806	14689	41746	39406
6	Kra Daadi	Palin DH	162	550	80	2852
7	Kurung Kumey	Koloriang DH	79	846	151	3827
8	Leparada	Basar DH	171	2858	174	3030
9	Lohit	Tezu GH	453	8452	2389	8707
10	Longding	Longding DH				2968
11	Lower Dibang Valley	Roing DH	168	9688	1507	9992
12	Lower Siang	Likabali DH	114	3205	696	3220
13	Lower Subansiri	Ziro DH	329	6111	2005	11192
14	Namsai	Namsai DH	591	8368	293	10773
15	Papum Pare	TRIHMS	3600	82854	4629	161903
16	PAPUMPARE	Doimukh DH				5284
17	Tawang	Tawang DH	431	8769	1863	9532
18	Tirap	Khonsa GH	204	2392	93	2552
19	Upper Siang	Yingkiong DH	144	3340	942	9869
20	Upper Subansiri	Daporijo DH	425	4304	0	14365
21	West Kameng	Bomdila GH	175	4080	250	14124
22	West Siang	Aalo GH	610	11995	2976	26052
Total			10075	186244	63866	365714

Table 5.a: District wise distributions of total number of tests were conducted against total patients.

SL	Hospital Name	Total tests			Total sample (patient)			Average nos. of test per sample		
		since 2019	2022-23 Ap to June	2021-22	since 2019	2022-23 Ap to June	2021-22	since 2019	2022-23 Ap to June	2021-22
1	Hayuliang DH	32394	3801	22758	10566	711	7744	3.1	5.3	2.9
2	Changlang DH	37044	4074	24026	17358	1771	12738	2.1	2.3	1.9
3	Anini DH	8722	1286	5821	3229	568	2329	2.7	2.3	2.5
4	Seppa DH	110704	16413	46614	37126	5518	15133	3	3	3.1
5	Pasighat DH	190135	39158	84160	71419	14854	32126	2.7	2.6	2.6
6	Palin DH	20959	2852	13251	7315	1089	5108	2.9	2.6	2.6
7	Koloriang DH	35672	3827	26393	9077	1227	6659	3.9	3.1	4
8	Basar DH	12653	3030	5591	5576	1599	2769	2.3	1.9	2
9	Tezu GH	63650	8598	33735	23462	3240	11260	2.7	2.7	3
10	Longding DH	27767	2601	17301	12829	1216	8931	2.2	2.1	1.9
11	Roing DH	65214	9928	41961	17532	3011	10784	3.7	3.3	3.9
12	Likabali DH	22146	3185	12387	6956	1457	4035	3.2	2.2	3.1
13	Ziro DH	53886	11147	22481	17936	3138	6957	3	3.6	3.2
14	Namsai DH	70424	10624	42647	31243	4538	19288	2.3	2.3	2.2
15	TRIHMS	852580	159169	446107	219163	40946	114590	3.9	3.9	3.9
16	Doimukh DH	23818	5240	7300	5444	1045	1779	4.4	5	4.1
17	Tawang DH	61452	9390	31344	19963	3527	10367	3.1	2.7	3
18	Khonsa GH	24173	2497	10608	9438	1070	5234	2.6	2.3	2
19	Yingkiong DH	53198	9738	30343	18534	3258	10480	2.9	3	2.9
20	Daporijo DH	161715	14181	61792	55440	4470	17952	2.9	3.2	3.4
21	Bomdila GH	78435	14047	31559	20902	4217	9279	3.8	3.3	3.4
22	Aalo GH	151439	25879	92129	42441	7389	25275	3.6	3.5	3.6

Table 5.b: District wise distributions of total number of tests were conducted against total patients.

SL	Hospital Name	District	Total tests			Total sample (patient)			Average nos. of test per sample		
			since 2019	2022-23 Ap to June	2021-22	since 2019	2022-23 Ap to June	2021-22	since 2019	2022-23 Ap to June	2021-22
1	Rumgong CHC	Anjaw	636	83	534	433	70	347	1.5	1.2	1.5
2	Miao CHC	Changlang	5112	1208	3077	3102	942	1610	1.6	1.3	1.9
3	Diyun CHC	Changlang	10772	3025	6917	5388	1825	3185	2	1.7	2.2
4	Ruksin CHC	East Siang	17766	3261	8270	5328	1026	2572	3.3	3.2	3.2
5	Mebo CHC	East Siang	6528	1263	2936	2465	443	1169	2.6	2.9	2.5
6	Nari CHC	East Siang	4990	949	2871	4021	919	2535	1.2	1	1.1
7	Rani PHC	East Siang	2003	97	727	562	35	259	3.6	2.8	2.8
8	Bilat PHC	East Siang	229	0	12	69	0	6	3.3		2
9	Namsing PHC	East Siang	1391	173	748	712	104	312	2	1.7	2.4
10	Balek PHC	East Siang	511	79	290	305	59	157	1.7	1.3	1.8
11	Korang PHC	East Siang	589	65	227	547	65	225	1.1	1	1
12	Boruguli PHC	East Siang	687	120	359	666	141	373	1	0.9	1
13	Yagrung PHC	East Siang	4864	1429	3019	1904	551	1186	2.6	2.6	2.5
14	Koyu PHC	East Siang	369	0	25	232	0	6	1.6		4.2
15	Banskata UPHC	East Siang	540	366	0	267	217	0	2	1.7	
16	Sille PHC	East Siang	846	732	0	260	224	0	3.3	3.3	
17	Mahadevpur CHC	Lohoit	14453	1960	9701	8382	861	5873	1.7	2.3	1.7
18	Telam PHC	Lower Siang	11	11	0	11	11	0	1	1	
19	Yazali CHC	Lower Subansiri	2901	710	1590	2233	460	1432	1.3	1.5	1.1
20	Achuli PHC	Lower Subansiri	6561	346	2801	5914	343	2593	1.1	1	1.1
21	Chongkham CHC	Namsai	15736	3225	9738	8946	1319	5943	1.8	2.4	1.6
22	New Mohong PHC	Namsai	3570	577	1524	2935	564	1272	1.2	1	1.2
23	Lathao PHC	Namsai	9090	1322	5799	7058	1209	4338	1.3	1.1	1.3
24	Piyong PHC	Namsai	2896	790	953	2416	771	781	1.2	1	1.2
25	Bordumsa CHC	Namsai	5997	2806	2038	4075	2070	1412	1.5	1.4	1.4
26	Sagalee CHC	Papumpare	4125	470	1227	1650	287	641	2.5	1.6	1.9
27	Chimpu PHC	Papumpare	4725	660	2177	2115	346	886	2.2	1.9	2.5

SL	Hospital Name	District	Total tests			Total sample (patient)			Average nos. of test per sample		
			since 2019	2022-23 Ap to June	2021-22	since 2019	2022-23 Ap to June	2021-22	since 2019	2022-23 Ap to June	2021-22
28	Hollongi PHC	Papumpare	2022	133	815	636	34	190	3.2	3.9	4.3
29	Toru PHC	Papumpare	718	99	195	372	24	54	1.9	4.1	3.6
30	Bysar Nalla PHC	Papumpare	431	10	0	340	4	1	1.3	2.5	0
31	Tarasso PHC	Papumpare	305	0	0	246	0	0	1.2		
32	Leporiang PHC	Papumpare	996	23	50	776	22	50	1.3	1.0	1.0
33	Jote PHC	Papumpare	149	0	0	118	0	0	1.3		
34	Boleng CHC	Siang	6406	1007	3414	3011	610	1749	2.1	1.7	2.0
35	Pangin CHC	Siang	1182	59	591	936	82	604	1.3	0.7	1.0

Table 6.a reveals the information about numbers of tests conducted for each patient. It is seen that from the table, 27.7 % only single test was conducted out of 79,445 patients during April to July 2022-23. Only 32 % tests were conducted 5 or more than 5 types during the same period. This information was specially obtained for critical review, which is not available in the dashboard.

It is also found that, single test per patient has been conducted in large number in PPP run laboratories of few hospitals like Anini DH (58%), Basar DH (41.0%), Yingkiang DH (51.8%), Boleng Chc (65%), Pangin (85.9%), Mahadevpur CHC (47.9%), Yazali CHC (70.0%) etc.

Few health facilities conducted laboratory test 5 or more per patient through PPP mode like Pasighat DH (49.1%), Doimukh DH (50.4%), Daporijo DH (35.3%), Aalo DH (57.0%) etc.

Table 6.b shows that out of total single test conducted for 22021 patients, Complete Blood Count (CBC) test is conducted 27.5%, Blood Grouping 22.1%, Random Blood Sugar 16.8 % etc.

Blood Grouping, Random Blood Sugar, Urine Pregnancy Test (UPT) and other kit-based tests must be conducted in the existing in-house mode only for optimal utilization of the State exchequer.

Table 6a: Distribution of numbers of types of tests per patient during April to July 2022-23

Nos. of type of test	Nos. of Patients	In %
1	22021	27.7
2	12279	15.5
3	10192	12.8
4	9525	12.0
5	7807	9.8
6	5137	6.5
7	4038	5.1
8 & more	8446	10.6
Total	79445	100.0

Table 6.b: Distribution of different single test conducted during April to July 2022-23

Name of Test	Single test has done against nos. of patients	In % of total patients	In % of only single test patients
Complete Blood Count (CBC)	6061	7.6	27.5
Blood Grouping	4865	6.1	22.1
RBS	3710	4.7	16.8
Liver Function Test	1189	1.5	5.4
UPT	1072	1.3	4.9
Renal Function Test	1030	1.3	4.7
Urine complete by strip method	739	0.9	3.4
Malaria Rapid Test	687	0.9	3.1
FBS	433	0.5	2.0
Lipid Profile Test	426	0.5	1.9
Others	307	2.4	8.2
Total patient (only single Lab test)	22021	27.7	100.0
Total patients	79445		

Table 6c: Facility wise distribution of numbers of types of tests per patient during April to July 2022-23

Hospital Name	Single Test		2 Tests		3 Tests		4 Tests		5 & more tests		Total
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	
TRIHMS	3580	15.8	2201	9.7	2870	12.7	2865	12.7	11108	49.1	22624
Pasighat DH	2751	31.1	1408	15.9	969	11.0	864	9.8	2842	32.2	8834
Bomdila DH	954	33.8	544	19.2	490	17.3	479	16.9	359	12.7	2826
Doimukh DH	21	4.2	16	3.2	97	19.5	113	22.7	251	50.4	498
Anini DH	287	58.0	84	17.0	82	16.6	37	7.5	5	1.0	495
Basar DH	505	41.1	285	23.2	198	16.1	99	8.1	142	11.6	1229
Changlang DH	268	20.6	367	28.3	245	18.9	191	14.7	228	17.6	1299
Daporijo DH	480	17.7	638	23.6	374	13.8	261	9.6	955	35.3	2708
Hayuliang DH	267	35.8	265	35.5	142	19.0	51	6.8	21	2.8	746
Koloriang DH	69	9.6	152	21.1	165	22.9	142	19.7	191	26.6	719
Likabali DH	241	25.0	158	16.4	205	21.2	138	14.3	223	23.1	965
Longding DH	268	34.4	81	10.4	90	11.6	207	26.6	132	17.0	778
Namsai DH	1252	37.2	511	15.2	439	13.1	415	12.3	745	22.2	3362
Palin DH	248	36.3	148	21.7	128	18.7	62	9.1	97	14.2	683
Roing DH	518	27.8	253	13.6	235	12.6	419	22.5	436	23.4	1861
Seppa DH	636	21.6	434	14.7	223	7.6	272	9.2	1378	46.8	2943
Tawang DH	719	28.3	535	21.1	402	15.8	392	15.4	491	19.3	2539
Yingkiong DH	1334	51.8	460	17.9	193	7.5	113	4.4	474	18.4	2574
Aalo DH	324	9.0	349	9.7	333	9.3	526	14.6	2059	57.3	3591

Hospital Name	Single Test		2 Tests		3 Tests		4 Tests		5 & more tests		Total
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	
Khonsa DH	125	22.7	126	22.9	124	22.5	87	15.8	89	16.2	551
Tezu DH	268	14.1	415	21.8	375	19.7	347	18.2	500	26.2	1905
Gtgh Ziro DH	649	29.0	281	12.5	266	11.9	371	16.6	674	30.1	2241
Boleng CHC	370	65.5	84	14.9	34	6.0	40	7.1	37	6.5	565
Bordumsa CHC	1048	55.2	379	20.0	176	9.3	138	7.3	157	8.3	1898
Chongkham CHC	195	24.4	49	6.1	373	46.6	80	10.0	103	12.9	800
Diyun CHC	518	45.8	96	8.5	154	13.6	106	9.4	258	22.8	1132
Mahadevpur CHC	358	47.9	195	26.1	135	18.0	40	5.3	20	2.7	748
Mebo CHC	154	46.5	45	13.6	29	8.8	29	8.8	74	22.4	331
Mechuka CHC	191	37.2	134	26.1	63	12.3	90	17.5	35	6.8	513
Miao CHC	217	37.7	58	10.1	137	23.8	93	16.2	70	12.2	575
Nari CHC	182	30.4	314	52.5	18	3.0		0.0	84	14.0	598
Pangin CHC	85	85.9	10	10.1	1	1.0	3	3.0		0.0	99
Ruksin CHC	269	47.4	23	4.0	22	3.9	54	9.5	200	35.2	568
Rumgong CHC	44	66.7	17	25.8	3	4.5	1	1.5	1	1.5	66
Sagalee CHC	99	43.8	81	35.8	30	13.3	10	4.4	6	2.7	226
Yazali CHC	289	70.0	76	18.4	15	3.6	3	0.7	30	7.3	413
Balek PHC	54	88.5	1	1.6	1	1.6	1	1.6	4	6.6	61
Boruguli PHC	115	65.3	57	32.4	4	2.3		0.0		0.0	176
Basar Nalla PHC	1	33.3		0.0	1	33.3	1	33.3		0.0	3
Chimpu PHC	46	19.7	136	58.4	30	12.9	16	6.9	5	2.1	233
Hollongi PHC	4	23.5		0.0	1	5.9	5	29.4	7	41.2	17
Katan PHC	3	50.0		0.0	1	16.7		0.0	2	33.3	6
Korang PHC	77	98.7	1	1.3		0.0		0.0		0.0	78
Lathao PHC	205	29.2	73	10.4	176	25.1	221	31.5	26	3.7	701
Leporiang PHC	17	85.0	2	10.0		0.0	1	5.0		0.0	20
Namsing PHC	40	46.0	20	23.0	22	25.3	5	5.7		0.0	87
New Mohong PHC	749	77.9	152	15.8	24	2.5	9	0.9	27	2.8	961
Piyong PHC	317	50.3	254	40.3	16	2.5	11	1.7	32	5.1	630
Rani PHC	6	30.0	3	15.0	3	15.0	1	5.0	7	35.0	20
Sille PHC	11	10.0	10	9.1	10	9.1	28	25.5	51	46.4	110
Telam PHC	11	100.0		0.0		0.0		0.0		0.0	11
Toru PHC	1	7.1	1	7.1	1	7.1	2	14.3	9	64.3	14
Yachuli PHC	132	46.2	150	52.4	4	1.4		0.0		0.0	286
Yagrung PHC	163	52.9	29	9.4	6	1.9	17	5.5	93	30.2	308
UPHC Banskata	22	18.8	13	11.1	11	9.4	8	6.8	63	53.8	117
UPHC Itafort	264	23.9	105	9.5	46	4.2	61	5.5	627	56.8	1103
Total	22021	27.7	12279	15.5	10192	12.8	9525	12.0	25428	32.0	79445

Beneficiaries' view:

A total number of 18 OPD patients who availed the laboratory services were interviewed during the visit. They are happy about the free diagnostic services in the health facilities. Average waiting time for sample collection was 10 to 15 minutes in the PHC / CHC but more than 30 minutes in TRIHMS due to high OPD load.

Finance:

The service provider submits consolidated monthly report signed by the Medical Superintendent of District Hospital and MO i/c of CHC/PHC on quarterly basis to the State NHM Office for the payment. Around 90 (Ninety) days has been taken by the State NHM office for the payment.

Service provider's view

- a. Difficult to transport equipment, reagents and sample.
- b. Lack of continuous power supply. Using online UPS along with stabilizer to avoid voltage fluctuation.
- c. Poor internet connectivity.
- d. Difficult to hire local Qualified trained HR

Chapter -IV

Observations at the health facilities:

Changlang District

1. PHC Nampong: (only in-house laboratory services)

Eight bedded Nampong PHC was established in 1953 situated remotely in the Indo-Myanmar border district Changlang of Arunachal Pradesh, average OPD of 20 per day.

Diagnostic services: In-house

1. Laboratory technician post is vacant since 2017. One laboratory assistant is working in the facility with working experience in APSACs. She has not been got any training since 2017.
2. Ten diagnostic tests are being conducted at the health facility with user fee for general patients and free for pregnant women. User fee is utilized for purchasing reagents and consumables.
3. On an average of 52 tests per month i.e nearly 2 test / day has been conducted in last seven months.
4. Facility used to conduct ESR and malaria test but could not conduct for last few days due to shortage of anticoagulant and reagent respectively.
5. Fourteen new equipment like 3-part hematology analyzer, semi auto analyzer etc. are supplied to the health facilities which are yet to be installed.

Table No. List equipment available within the facility and functional

Sl No.	Equipment Name
1	Glucometer
2	Centrifuge
3	Microscope

Table No. List of tests available within the facility

Sl. No.	Name of Test	Machine/ Method
1	Typhoid Test	Kit
2	Blood Glucose	Manual
3	Urine R/E	Kit
4	Blood Grouping	Manual
5	Blood (R/E)	Manual
6	Hbs Ag	Kit
7	VDRL	Manual
8	Haemoglobin	Sahli's method
9	ESR	Manual
10	Urine Pregnancy Test	Kit

Few photographs of the laboratory in the health facility

		
In house Laboratory	Recently supplied equipment to be installed	Laboratory equipment and below packed newly supply equipment

2. PHC Kharsang: (only in-house laboratory services)

1. Six bedded Kharsnag PHC with average OPD of 30 patients per day and Rs.10 /patient as has been collected as user fee for OPD patient.
2. The Facility have 3 GDMOs, 1 Laboratory Technician, 1 DHV (Domiciliary Health Visitor) and 5 RFW (Regular Field Worker).
3. The health facility is conducting on an average 25 delivery/month, which is highest among the PHCs in the State.

Diagnostic services: In-house

1. On an average 300 tests per month are being conducted in the laboratory of Kharsang PHC.
2. The Laboratory does not have fridge.
3. DHV has been for engaged for rapid Malaria test in the community.
4. HIV and HBsAg supply are supplied by NACO, shortage of the kits was observed during the visit.
5. Voltage fluctuation with 180 V during many times in working hour is one of the major issues in the health facility.
6. 14 equipment viz. Semi auto biochemistry analyzer, Blood mixer, 3-part Hematology analyzer, Digital haemoglobinometer, Electra brushless centrifuge etc. but machines are yet to installed.

List of Test conducted in In house laboratory of Facility

SI No.	List of Test	Method /Material
1	Hb	Sahli's method
2	Blood Group	Manual
3	Urine Pregnancy Test	Kit
4	Urine Sugar & Albumin	Manual
5	HIV	Kit
6	VDRL	Kit
7	Blood Sugar	Glucometer
8	Malaria	Kit & Slide

Few photographs of the laboratory in the health facility



3. CHC Diyun (both in-house & PPP laboratory services)

Fourteen bedded Diyun CHC provided OPD & IPD services with average OPD of 600 & IPD 30 per month. The average delivery per month is 20 per month. Rs.10 /patient as has been collected as user fee for OPD patient

Diagnostic services:

1. Facility do not have any regular or contractual laboratory technician and radiographer since last 2 years. The existing X-rays machine is lying idle.
2. The inhouse laboratory have one semi biochemistry analyzer, 4 centrifuge and 4 microscopes but not in use due to non-availability of Lab. Tech.

PPP Service provider collection centre: -

1. One sample collection center has been opened by the PPP service provider within the facility. Only one laboratory technician has been posted for sample collection. Timing of sample collection center is 8:30 am to 2:00 pm.
2. The collection center does not have any computer /Laptop for online registration in the service provider portal. Individual TRF are sent to the nearest Hub Laboratory at the Namsai DH via WhatsApp and patient is registered from there. Sample of the patients are sent at 3:00 pm to Namsai district hospital. The sample collection time is not mentioned in the TRF
3. There was no display of SOPs within the sample collection center, but the nodal coordinator has the soft copy with him.
4. Service provider is not having its own fridge and at present using the fridge of the facility for sample storage.
5. Monthly reports are shared with the facility in charge.

The equipment present in the PPP collection centre is:

Sl.	Name of the equipment		Remark
1	Semi-Auto-biochemistry machine		Equipment is yet to be installed
2	Centrifuge		
3	Dry Bath Incubator		
4	Pipettes		

It is observed from the table below that RBS (17.94%), CBC (14.16%), ESR (10.67%), S. Creatinine (7.16 %) and S. Urea (7.18 %) are the major prescribed test in the facility in PPP laboratories in the current FY 2022-23 upto July.

It is also found that Complete Stool examination, Urine microscopy have not been conducted in the PPP laboratory from the last 4 months.

Test conducted in CHC Diyun (performance in April to July 2022)

Sl.	Test parameter	Total test conducted April - July 2022	% of total
Clinical Pathology			
1	Hemoglobin Estimation (Hb %)		
2	Total Leukocyte Count (TLC)		
3	Differential Leukocyte Count (TLC)		
4	ESR	471	10.67
5	PT		
6	INR	1	0.02
7	Total Red Blood Cell Count		
8	Platelet Count		
9	RBC Parameters (PCV,MCH,MCV)		
10	Complete Blood Count	625	14.16
11	MP Slide Method	2	0.05
12	Blood Group (ABO & RH Typing)	159	3.6
Biochemistry			
13	Fasting Blood Sugar	9	0.2
14	Post Prandial Blood Sugar	9	0.2
	Random Blood Sugar	792	17.94
Renal Function Test			
15	Serum Urea	317	7.18
16	Serum Creatinine	316	7.16
Liver Function Test			
17	Serum Billirubin Total	299	6.77
18	Serum Billirubin Direct	297	6.73
19	SGOT	142	3.22
20	SGPT	142	3.22
21	ALP	136	3.08

Sl.	Test parameter	Total test conducted April - July 2022	% of total
22	Total Protien	135	3.06
23	Albumin	136	3.08
24	ELECTROLYTES	9	0.2
Lipid Profile			
25	Serum Cholestrerol	38	0.86
26	Serum Triglycerides	20	0.45
27	VLDL	20	0.45
28	HDL	20	0.45
29	Amylase		
30	LDL	20	0.45
Serology			
31	RPR Rapid Test	88	1.99
32	HIV Rapid Test	89	2.02
33	Dengue Rapid Test	1	0.02
34	Malaria Rapid Test	47	1.06
35	Sputum for AFB	2	0.05
36	Urine Sugar & Albumin	2	0.05
37	Urine Pregnancy Test	55	1.25
38	Urine Microscopy		
39	Urine Complete by strip method	15	0.34
40	Complete Stool Examination		
Total		4414	100.0

Few photographs of the laboratory in the health facility:

		
Semi auto analyzer in the in-house laboratory	Centrifuge present in in house laboratory	Microscope kept idle
		
PPP collection center	Bar codes for sample	Sample transportation box

4. DH Changlang (both in-house & PPP laboratory services)

In House laboratory

1. Eighty-five bedded hospital was established in 1962 and new building construction for the hospital is going on, OPD timing of hospital is 8:00 am to 2:00 pm.
2. The hospital has 6 GDMOs and a single specialist (MD Medicine) and 7 laboratory technicians
3. The hospital has an integrated laboratory set up both the in house and PPP laboratory were in same room.
4. On an average 650 tests per month are being conducted in the in-house laboratory
5. The inhouse laboratory is having TRUENAAT & CBNAAT machines and has recently got one PCR machine with Biosafety cabinet. The PCR machine is yet to install. The facility has also got one D Dimer machine which is at present not in used.
6. Except for the typhoid testing all the test in the in-house laboratory is free to all the patients
7. MD medicine doctor mentioned that the list of tests is general and there is scope for further addition of tests in the PPP list. *He suggested tests like Thyroid profile, ASO Titre, HepB/Hep C viral load, HBA1C, etc needs to be included within the ambit of list of tests of PPP service partner.*

Number of tests conducted in the inhouse laboratory

Sl.	Tests
1	HIV
2	WIDAL
3	Urine/RE
4	Syphilis
5	ABO Rh
6	Haemoglobin
7	Scrub Typhus
8	MTB
9	Hemoglobin %
10	Malaria
11	Blood Sugar
12	HCG
13	VDRL
14	HBsAg
15	Stool R/E

The sample collection room was common for both in house and PPP service laboratories, the set-up was quite congested.

PPP mode laboratory: -

1. The PPP service provider laboratory have 3 laboratory technicians and the laboratory is open till 6:00 pm. SoPs were pasted on the wall.
2. ASR laboratory technician were running the internal control, but the frequency was not regular and the record for the same was not maintained properly. EQAS has not been started by the service provider for any divisions.

- The LIS system of service provider is in place, the system can take test result values from equipment, but the semiauto analyzer and Urine analyzer are yet to be linked with LIS.
- Doctors of the hospital revealed that there was shortage of reagent for Electrolyte analyzer.

List of equipment and Test mapping for PPP service provider

Sl.	Name of the equipment	List of Test performed using equipment
1	Semi-Auto-biochemistry machine	RBS, FBS, PPBS, RFT, LFT, Lipid profile, Amylase
2	Haematology analyser	TLC, DLC, Total Red Blood cell count, Platelet Count, RBC parameters
3	Electrolyte analyzer	Na+, K+, Cl+
4	PT INR analyzer	PT INR
5	Urine Analyzer	
6	Dry bath incubator	
7	Centrifuge	
8	Blood mixer	

kit based test conducted by the service provider

Sl. No.	Test
1	HIV
2	RPR (VDRL)
3	Malaria
4	Dengue
5	HCV
6	HbsAg
7	Urine pregnancy Test

Status of DH Changlang PPP laboratory (performance in April to July 2022)

It was observed that from the table below, maximum test prescribed are Urine Sugar Albumin (13.26 %), Random Blood sugar (7.42 %), CBC (5.87 %), SGOT (5.41%), SGPT (5.41%) and serum urea (5.21). The PPP service provider does not conduct Coombs Test.




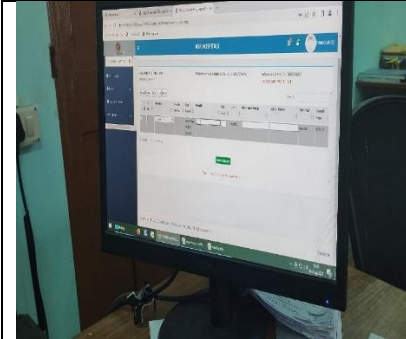
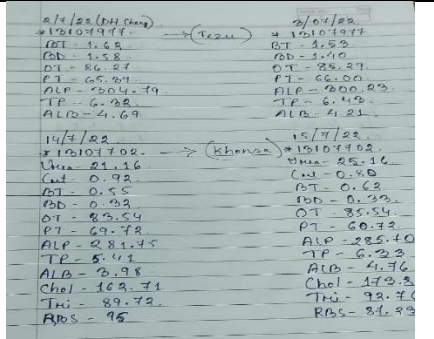

It is also found that complete Stool Examination, MP Slide Method, Urine microscopy, Coomb's Test (Direct/Indirect), CSF Analysis are not done in PPP laboratory in FY 2022-23 up to July 2022.

Sl.	Test parameter	Total Count	% of Test
Clinical Pathology			
1	Hemoglobin Estimation (Hb %)		
2	Total Leukocyte Count (TLC)		
3	Differential Leukocyte Count (TLC)		
4	ESR	328	3.91

Sl.	Test parameter	Total Count	% of Test
5	PT	37	0.44
6	INR	96	1.14
7	Total Red Blood Cell Count		
8	Platelet Count		
9	RBC Parameters (PCV, MCH, MCV)		
10	Complete Blood Count	493	5.87
11	Coomb's Test (Direct)		
12	Coomb's Test (Indirect)		
13	CSF Analysis		
14	Ascitic Fluid Analysis		
15	Pericardial Analysis		
16	Synovial Fluid Analysis		
17	MP Slide Method		
18	Blood Group	119	1.42
Biochemistry			
19	Random Blood Sugar	623	7.42
20	Fasting Blood Sugar	46	0.55
21	Post Prandial Blood Sugar	19	0.23
Renal Function Test			
22	Serum Urea	438	5.21
23	Serum Creatinine	454	5.41
Liver Function Test			
24	Serum Bilirubin Total	415	4.94
25	Serum Bilirubin Direct	415	4.94
26	SGOT	454	5.41
27	SGPT	454	5.41
28	ALP	393	4.68
29	Total Protein	403	4.8
30	Albumin	392	4.67
Lipid Profile			
31	Serum Cholesterol	163	1.94
32	Serum Triglycerides	174	2.07
33	VLDL	174	2.07
34	HDL	111	1.32
35	Amylase		
36	LDL	131	1.56
37	Electrolytes (<i>not in the old TRF</i>)	93	1.11
Serology			
38	RPR Rapid Test	150	1.79
39	HIV Rapid Test	159	1.89
40	Dengue Rapid Test		
41	Malaria Rapid Test	95	1.13
42	Sputum for AFB	Under NTEP	

Sl.	Test parameter	Total Count	% of Test
43	Urine Sugar & Albumin	1114	13.26
44	Urine Pregnancy Test	109	1.3
45	Urine Microscopy		
46	Urine Complete by strip	347	4.13
47	Complete Stool Examination		
Total		8399	

Few photographs of the laboratory in the health facility:

		
In house laboratory	TRUENAT machine	CBNAAT machine in inhouse Laboratory
		
LIS	Inter laboratory comparison is done	PPP laboratory equipment

5. PHC Loliang: (only in-house laboratory services)

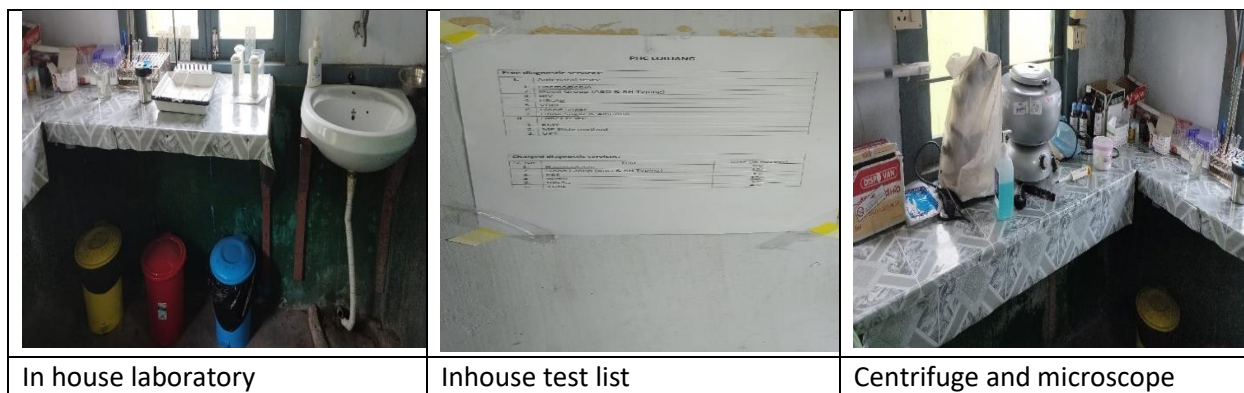
Diagnostic services: In-house

1. Six bedded Loliang PHC has only one Laboratory Technician.
2. Seventy-three patients have availed the diagnostic services as non-ANC patient and nine as ANC patient in the last two months.
3. The facility is charging a minimal fee from non-ANC patient and laboratory tests are free for the pregnant woman.
4. The laboratory staff has maintained proper records

List of tests conducted at the PHC

Sl. No	Tests	Remarks
1	Hb%	Reagents locally purchase
2	Blood Grouping	
3	HIV	NACO
4	HBsAg	Reagents locally purchase
5	VDRL	
6	Blood sugar	
7	Urine Sugar & Albumin	
8	RMT	State supply
9	MP slide and Kit	State supply
10	UPT	Reagents locally purchase
11	WIDAL	Supply
12	ESR	Shortage of anticoagulant

Few photographs of the laboratory in the health facility:



6. PHC Medo: (only in-house laboratory services)

1. Ten bedded Medo PHC was upgraded to PHC from Sub-center in 2018 with monthly average OPD is 15 /day. There is no subcenter under the PHC.
2. NGO Prayas Janhit Swasthya runned the PHC prior upgradation but still 1 MO and 1 Health Assistant is still providing services.
3. Few basic tests are being conducted in the PHC, as informed by the health assistant.

List of laboratory Test conducted in the PHC

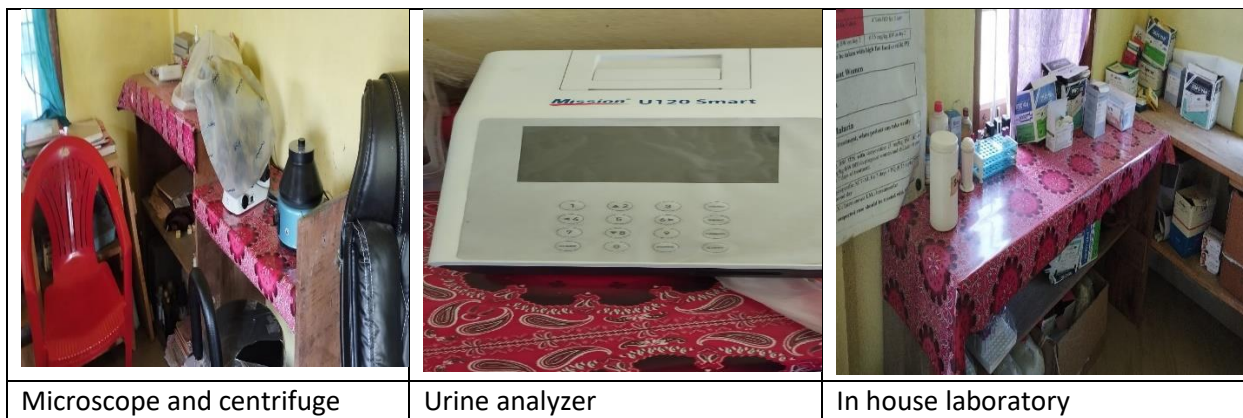
Sl. No.	Name of the Test (#)
1	Malaria Test (free)
2	WIDAL Test
3	Blood Grouping Test (Free for school student)

4	Haemoglobin
5	UPT/HCG (Free for ANC)
6	HBsAg
7	Blood Sugar (FBS/RBS/PPBS)

List of equipment present in the inhouse laboratory

Sl. No.	Name of equipment
1	Centrifuge
2	Urine Analyser
3	Centrifuge
4	Microscope

Few photographs of the laboratory in the health facility:



Microscope and centrifuge

Urine analyzer

In house laboratory

7. CHC Wakro: (only in-house laboratory services)

1. Janhit Swasthya Seva Kendra is running Wakro CHC through PPP mode.
2. Average OPD is 15-20 per day and 20 – 30 patients per month availed laboratory services.
3. State / district supply the reagents & kits. The NGO do not purchase any reagents locally. Lab tests are free in the CHC.
4. Laboratory record is not maintained properly.

List of test conducted in the In house laboratory

Sl. No.	Test List	Method/ equipment
1	Haemoglobin	Sahli's
2	ESR	Manual
3	Malaria Parasite	Kit
4	Blood Glucose (fasting, Post Prandial and random)	Glucometer

Sl. No.	Test List	Method/ equipment
5	Blood Group	Manual
6	Serum Bilirubin Total	Manual
7	VDRL	Manual
8	RMT	Manual
9	Urine for Pregnancy	Kit
10	HBs Ag	Kit
11	Serum Uric Acid	Manual
12	Bleeding Time	Manual
13	Clotting Time	Manual
14	Clotting Time	Manual
15	Urine for Sugar	Manual
16	Urine for Albumin	Manual

List of equipment in the laboratory

Sl. No.	Equipment Name
1	Hot air Oven
2	Colorimeter
3	Centrifuge
4	Haemometer sahli

8. Tezu General Hospital (both in-house & PPP laboratory services)

In house laboratory:

1. One hundred bedded Tezu general hospital collects user fee from general OPD patient, free for pregnant woman.
2. Rs. 100/- is taken from the patients for X-ray services and minimal user for other in-house laboratory services.
3. The hospital has one pathologist, two laboratory technician and one male attendant in the in-house laboratory.
4. On an average 800-850 tests per month are being conducted in the in-house laboratory, though the in-house laboratory has few high-end equipment like Biochemistry Auto analyzer. Biochemistry auto analyzer has not been used by the in-house laboratory technician as most of the Biochemistry tests free of cost under NHM through PPP mode.
5. Few tests like RPR Rapid Test/VDRL, HIV Rapid Test, Urine Microscopy and complete stool are being conducted in in-house laboratory of the hospital, so the same are not conducted under the PPP laboratory.

List of Tests conducted in in house laboratory of Tezu General Hospital

Sl. No.	Test Parameter Name	Charges in Rs.	Method/Equipment used	Remarks
1	Hb %	10	Sahli's method	Available in PPP
2	ESR	10	Westergren method	Available in PPP
3	TC, DLC	10	Manual	Available in PPP
4	BT/CT	20	Manual	Available in PPP
5	Blood Group (ABO, RH)	30	Manual	Available in PPP
6	Blood Sugar (Fasting, Post Prandial, RBS)	50	Manual/Glucometer	Available in PPP
7	Serum Uric Acid	100	Semi analyzer	Not available in PPP
8	Widal Test	50	Kit	Not available in PPP
9	Urine Routine examination (sugar, albumin, ME, SPGR)	20	Colorimeter	Available in PPP
10	Urine Pregnancy Test	0	Kit based	Available in PPP
11	Stool Routine Examination (Ova, Cyst, others)	10	Manual	Not conducted but in TRF
12	Stool Occult Blood	50		
13	Semen Analysis (Qty, A/Mortal, N/mortal, S/Mortal)	50	Manual	Not available in PPP
14	Vaginal smear			
15	FNAC			
16	Peripheral smear			
17	Skin smear	50		
18	Semen analysis	50		
19	Blood RMT/MP	0		
20	HIV	0	Kit (ICTC)	Not conducted but in TRF
21	HBsAg	0	Kit	available in PPP
22	Serum Uric Acid	100	Biochemistry Analyser	Not available in PPP
23	Blood Urea	100	Biochemistry Analyser	Not done at present in in-house laboratory.
24	Blood cholesterol	100	Biochemistry Analyser	
25	Serum Bilirubin	100	Biochemistry Analyser	Tests are done free of cost in PPP partner laboratory
26	Serum Creatinine	100	Biochemistry Analyser	
27	CBC	300	Hematology analyser	
28	SGPT	100	Biochemistry Analyser	
29	SGOT	100		

List of Equipment Present in the in-house Laboratory

Sl.	Equipment	In-house	PPP
1	Auto analyzer	1	Nil
2	Semi Auto biochemistry analyzer	1	1
3	Hematology analyzer	1	1
4	Electrolyte analyzer	Nil	1
5	Urine Analyzer	Nil	

6	Refrigerator	Y	
7	Invertor	Y	
8	Colorimeter	Y	
9	Electronic microscope	1	Nil
10	Needle destroyer	Y	
11	Water Bath	Y	
12	Hot air oven	Y	
13	Blood mixer	1	1
14	ATM Kiosk and other IT equipment	Y	

PPP diagnostic laboratory

1. The service provider laboratory was in a separate building. The service provider has deployed three laboratory technicians in the laboratory.
2. Laboratory Technicians under PPP mode were provided one-month induction training on sample collection, serology test, Biochemistry test and hematology test at TRIHMS.

Status of Tezu General Hospital PPP laboratory (performance in April to July 2022)

It is observed that from the table below LFT, KFT and CBC are the most prescribed tests.

It is seen that, tests like Coombs tests (Direct/indirect), Complete stool examination, CSF Analysis and Ascitic Fluid Analysis have not been conducted during April 2022 to July 2022.


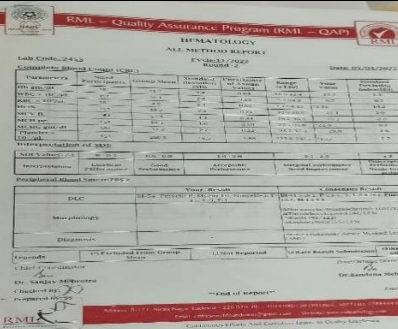




Sl.	Test parameter	Total Count	% of Test
Clinical Pathology			
1	Hemoglobin Estimation (Hb %)		
2	Total Leukocyte Count (TLC)		
3	Differential Leukocyte Count (TLC)		
4	ESR	287	2.23
5	PT	3	0.02
6	INR	5	0.04
7	Total Red Blood Cell Count		
8	Platelet Count		
9	RBC Parameters (PCV,MCH,MCV)		
10	Complete Blood Count	1345	10.46
11	Coomb's Test (Direct)		
12	Coomb's Test (Indirect)		
13	CSF Analysis		
14	Ascitic Fluid Analysis		
15	Pericardial Analysis		
16	Synovial Fluid Analysis		
17	MP Slide Method		
18	Blood Group	323	2.51
Biochemistry			
19	Fasting Blood Sugar	305	2.37
20	Post Prandial Blood Sugar	251	1.95

Sl.	Test parameter	Total Count	% of Test
Renal Function Test			
21	Serum Urea	797	6.2
22	Serum Creatinine	797	6.2
Liver Function Test			
23	Serum Bilirubin Total	787	6.12
24	Serum Bilirubin Direct	787	6.12
25	SGOT	777	6.04
26	SGPT	777	6.04
27	ALP	774	6.02
28	Total Protein	773	6.01
29	Albumin	773	6.01
Lipid Profile			
30	Serum Cholesterol	250	1.94
31	Serum Triglycerides	241	1.87
32	VLDL	241	1.87
33	HDL	241	1.87
34	Amylase	241	1.87
35	LDL	16	0.12
36	ELECTROLYTES (<i>not in the old TRF list</i>)	156	1.21
Serology			
37	RPR Rapid Test		
38	HIV Rapid Test	1	0.01
39	HCV	123	0.96
40	HBsAg	184	1.43
41	Dengue Rapid Test	28	0.22
42	Malaria Rapid Test	234	1.82
43	Sputum for AFB		
44	Urine Sugar & Albumin	21	0.16
45	Urine Pregnancy Test	41	0.32
46	Urine Microscopy		
47	Urine Complete by strip	353	2.75
48	Complete Stool Examination		
Total		11932	

kit based test conducted by the service provider

Sl. No.	Test
1	HIV
2	RPR (VDRL)
3	Malaria
4	Dengue
5	HCV
6	HbsAg
7	Urine pregnancy Test

Few photographs of the laboratory in the health facility:

		
<p>In House laboratory</p>	<p>EQAS for Haematology for Tezu laboratory</p>	<p>Fully biochemistry analyser in Hospital In house laboratory</p>
		
<p>Store within the Laboratory</p>	<p>Card centrifuge of service provider yet to be installed</p>	<p>IT system and Haematology analyser</p>

West Siang District

9. Aalo General Hospital (both in-house & PPP laboratory services)

About the GH:

Eighty Bedded Aalo general hospital is functioning as FRU. Daily average OPD is 160. Total 11 specialist are posted in the general hospital which includes 3 O&G, 1 each in Anesthetist, Pediatrician, Medicine, Radiologist, Surgery, Biochemistry, Microbiologist and Pathologist. C-Section delivery is conducted in the hospital.

CT scan services is also available in the hospital where ECG technician is working as CT technician after training.

Diagnostic services: In-house

1. As indicated above, three specialists i.e. Biochemist, Microbiologist and Pathologist are available in the hospital for laboratory services.
2. Eight Laboratory Technician and one Lab. Assistant are available in the hospital. Three are regular, 3 under NHM, 1 in blood bank, 1 in ICTC under NACO.
3. It was also seen that 2976 laboratory tests were conducted during April to June 2022-23.

4. The hospital has unused functional Biochemistry Auto analyzer.
5. The Medical Superintendent of the hospital revealed that they are collecting user fee for laboratory tests from the patients to procure consumables; they can do a greater number of tests if NHM supported to procure consumables and it can be free for all patients.
6. District RCH Officer was happy to implement Urine Pregnancy Test through PPP mode as supply of Nishay kit (UPT kit by FP Division) was irregular, but he was not aware about the financial implication about per UPT through PPP mode.

Diagnostic services: PPP

1. Three Laboratory Technician and 1 data Entry Operator are working in the PPP laboratory at Aalo GH. Space is provided in a congested single room in the hospital. There is no liquid waste management in the laboratory.

List of tests conducted in Aalo GH through in-house mode with user fee and PPP Lab services

Sl.	Name of the test	Rate in Rs.	PPP
1	Blood RE	100	
	Prothrombin *PT/INR		Y
	INR		Y
	Total Red Blood Cell Count		Y
2	CBC	300	Y
	RBC Parameters	Part of Blood CBC	Y
3	TLC / DLC	20	Y
4	Platelet Count	50	Y
5	Hb%	20	
6	ABO Grouping + RH	20	Y
7	BT / CT	20	N
8	Urine (Sugar / Albumin)	20	Y
9	Lipid Profile	500	Y
10	LFT	600	Y
11	SGOT	100	Y
12	SGPT	100	Y
13	S. Bilirubin	100	Y
14	KFT	200	Y
15	S Urea	100	Y
16	S Uric Acid	100	N
17	S Creatinine	100	Y
18	Blood Glucose estimation	30	Y
19	Urine RE	50	Y
20	Widal test	100	N

21	RDT (Typhoid)	100	N
22	RDT (Malaria)	150	Y
23	Hep-B	100	N
24	RA factor	100	N
25	ASO titre	100	N
26	ESR	50	Y
27	PBS	100	Y
28	FNAC	300	N
29	HIV	Y (ICTC)	Y
30	UPT	Y (shortage of supply)	Y
31	URINE (Strip)	Y	Y
32	RPR	Y (ICTC)	Y
33	Dengue	N	Y
34	Coombs test	N	Y

Table No. List equipment available within the facility and functional

Sl. No	Equipment	(in-house)	PPP
1	Automated-100 T/H Biochemistry Analysers	1	1
2	5 Part Haematology Analysers	1	1
3	3 Part Haematology Analysers	1	Nil
4	Immunoassay Photometric ELISA Reader	1	Nil
5	Chemiluminescent Immunoassay Analyzer	1	Nil
6	Semiautomated Urine Analysers	3	1
7	Binocular Microscope	4	Nil
8	Colorimeter	1	Nil
9	Lab Incubator	1	Nil
10	Tabletop Centrifuge	2	1
11	Water Bath	2	Nil
12	Shakers	1	Nil
13	Tissue Processor	1	Nil
14	Electrolyte Machine		1
15	PT APTT Machine		1
16	Coombs test Machine 1		1

10.Kamba CHC: (only in-house laboratory services)

Six bedded Kamba CHC has 2 MO, 1 Dental MO, 2 AYUSH MO and 2 laboratory Technician. One Lab. Tech is regular and the other one is under NVDCP division. They are doing the basic tests like: Hb%, Blood Sugar, Urine Albumin, Blood Grouping, HIV, Hep-B, Widal, RDT and MP (slide) though in-house mode.

11. Tato PHC (H&WC): (only in-house laboratory services)

Tato PHC has 1 MO and 1 laboratory Technician covering 2700 population. Tato PHC is a designated microscopy centre (DMC). The laboratory technician is conducting only malaria & TB test at present. The supplied glucometer was returned to the district as absurd result shown. Hemoglobinometer was not functioning as shortage of strip.

12. Menchkha CHC: (both in-house & PPP laboratory services)

Six bedded Kamba CHC covering 4000 to 5000 population and has 3 MO (Allopathic), 1 Dental MO, 1 AYUSH MO and 2 laboratory Technician and 1 Laboratory Assistant. One Lab. Tech is regular and the other one is under RBSK Programme.

Diagnostic services: in-house

Hb%, ABO-RH, VDRL, RBS, PBS, RPR, RTD and HIV is being conducted. The laboratory does not have any equipment for biochemistry test except colorimeter.

Diagnostic services: PPP



One laboratory technician has been posted in the PPP laboratory in Menchkha CHC. In a single room both in-house and PPP laboratory is functioning.

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Annexures:



1. PHC Test Requisition Form

	<p>NATIONAL HEALTH MISSION Government of Arunachal Pradesh Free Diagnostics Services (Labs)</p>	
<p>Primary Health Centre</p>		<p>Date.....</p>
<p>Name of the PatientIP/OP No.....</p>		
<p>Age Sex <input type="checkbox"/> M <input type="checkbox"/> F Ph:.....</p>		
<p>Diagnosis.....</p>		
<div style="border: 1px solid black; display: inline-block; padding: 2px;">Stick the Barcode here</div>		
<p>CLINICAL PATHOLOGY</p> <p>1 <input type="checkbox"/> Haemoglobin Estimation (Hb%) 2 <input type="checkbox"/> Total Leukocyte Count (TLC) 3 <input type="checkbox"/> Differential Leukocyte Count (DLC) 4 <input type="checkbox"/> ESR 8 <input type="checkbox"/> Platelet Count 17 <input type="checkbox"/> MP Slide Method 18 <input type="checkbox"/> Blood Group (ABO & RH Typing) 19 <input type="checkbox"/> Clotting Time</p>	<p>BIO-CHEMISTRY</p> <p>20 <input type="checkbox"/> Fasting Blood Sugar 21 <input type="checkbox"/> Post Prandial Blood Sugar 25 <input type="checkbox"/> Serum Bilirubin Total 26 <input type="checkbox"/> Serum Bilirubin Direct</p>	<p>SEROLOGY</p> <p>41 <input type="checkbox"/> RPR Rapid Test 42 <input type="checkbox"/> HIV Rapid Test 43 <input type="checkbox"/> Dengue Rapid Test 44 <input type="checkbox"/> Malaria Rapid Test 45 <input type="checkbox"/> Sputum for AFB 46 <input type="checkbox"/> Urine Sugar & Albumin 47 <input type="checkbox"/> Urine Pregnancy Test 50 <input type="checkbox"/> Complete Stool Examination 51 <input type="checkbox"/> Water Quality Tasting - H2S Strip Test for Faecal Contamination</p>
		<p>Doctor Signature with Seal</p>
<p>Name of the Patient</p>		<div style="border: 1px solid black; display: inline-block; padding: 2px;">Stick Bar code here</div>
<p>Please bring this for collection of report Free Diagnostic Services Service provider: ASR Hospitals (India) Pvt. Ltd.</p>		

2.CHC Test Requisition Form

	NATIONAL HEALTH MISSION Government of Arunachal Pradesh Free Diagnostics Services (Labs)																																																																																									
Community Health Centre		Date.....																																																																																								
Name of the PatientIP/OP No.....																																																																																										
Age Sex <input type="checkbox"/> M <input type="checkbox"/> F Ph:.....																																																																																										
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3.DHTest Requisition Form

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