State Inclusive Diagnostic Review of Operational Data in Kano State across 5 Domain Areas

Kano State, Nigeria

Final Consolidated Report

Natview Foundation for Technology Innovation (NFTI)
15 Iya Abubakar Crescent,
Jabi, Abuja
https://www.natviewfoundation.org
info@natviewfoundation.org

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1.0 Introduction

1.1 Contextualizing the Use of Operational Data across 5 Domains and Rationale

Operational data within the context of primary and secondary health systems has the potential to generate insights that can support performance management and strategic planning for policymaking, especially as it relates to understanding the scale and structure of health outcomes in delivering last-mile impact at the facility level.

Through several studies, we have seen practical use cases in Kaduna and Gombe State focused on using operational data to answer strategic questions from the SSHDP and BMGF performance strategy questions around the functionality of PHCs. These provide insights for policymakers to track health outcomes for last-mile visibility from an operational data lens.

One such use case is in the Kaduna State Primary Healthcare Board, where the e-ISS platform is used to understand primary health facilities' service readiness and availability. Another use case is the HRH biometric attendance system in Gombe State, which is used to understand the productivity of healthcare workers as it relates to primary health care and service delivery.

These examples showcase how operational data can provide consistent and sustainable data streams that can measure health outputs and outcomes from a performance management lens while providing opportunities for improving data quality to align more closely with population-based surveys.

The Kano State Diagnostic Review & Assessment attempts to dissect operational data used across the health system into the following frames, understanding each domain area and providing an integrated approach to tracking performance management:

- *Human Resource for Health*
- *Service Availability & Readiness*
- *Supply Chain Management*
- *Data Management*
- *Health Care Financing*

Furthermore, 6 MDAs were selected for the assessment mapped across the domain areas. 44 PHCs have been earmarked (one per LGA) for field assessment to determine alignment between micro-level operational data and the state-level operational data, as shown in the table below:

Domain	**MDAs**
Human Resource for Health	• Kano State Ministry of Health • Kano State Primary Healthcare Management Board • Office of the Head of Civil Service • Health Training Institutions
Service Availability & Readiness	• Kano State Ministry of Health • Kano State Primary Healthcare Management Board
Supply Chain Management	• Kano State Ministry of Health • Kano State Primary Healthcare Management Board • Kano State Drugs Supply & Medical Consumables Management Agency
Healthcare Financing	• Kano State Ministry of Health • Kano State Primary Healthcare Management Board • Kano State Contributory Management Board • Kano State Health Trust Fund
Data Management	• Kano Bureau of Statistics
Field Assessment	• 44 PHCs

1.2 Objectives of the Diagnostic Review and Assessment.

The Diagnostic Review is a state-inclusive assessment focused on ensuring state ownership in planning, designing, and deploying the assessment toolkits to determine how operational data can be used to answer performance management questions across the input to outcome continuums.

The assessment's main objective is to evaluate the PHC data ecosystem in Kano state, including understanding existing data sources, their applicability, governance models, collection processes, management practices, and data utilization for evidence-based decision-making.

Also, the diagnostic review and assessment intend to:

- *Identify gaps, obstacles & bottlenecks that impede efficient storage, retrieval, analysis, and reporting around operational data.*
- *Assess current data architecture to understand data quality, accuracy, completeness, and timeliness, determining dependability to generate strategic performance management.*
- *Analyze interoperability and integration of PHC data systems, including DHIS2, HRHMIS, NSHIP, and other relevant information systems.*
- *Assess data governance practices, policies, and frameworks to determine compliance with data privacy, security, ethical standards, and regulatory requirements.*
- *Engage stakeholders, including healthcare providers, administrators, policymakers, and data users, to comprehend their PHC data needs, challenges, and expectations*

1.2.1 Key Outcomes of the Diagnostic Review and Assessment

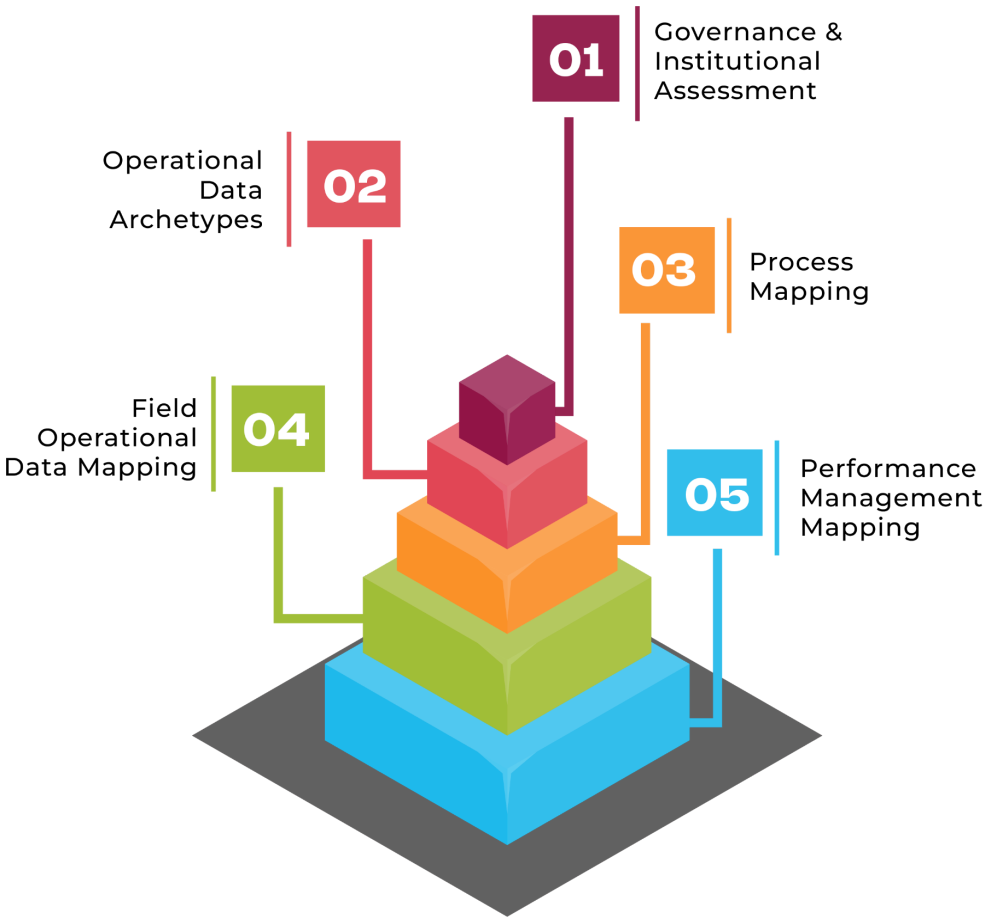
The key outcomes of the Assessment include

- *Improved understanding of the operational data framework, its process workflows, and reporting structure, including identifying and understanding data gaps and situational assessment of existing data, answering performance management strategic questions from the Kano State SSHDP and BMGF Performance Strategy and BoW*

- *Improved understanding of the governance model and organizational and institutional setup regarding operational data management, performance management, and reporting framework.*

1.3 Methodology & Approach to Diagnostic Review & Assessment of Operational Data

The methodology involves the use of mixed methods at both state and facility levels, covering five thematic areas such as ***(1) Governance & Institutional Assessment, (2) Operational Data Archetypes, (3) Process Mapping, (4) Field Operational Data Mapping, and (5) Performance Management Mapping***



At the state level, the approach involves combining (a) desk reviews with FGD/KII assessments to understand existing studies across the five domain

areas and identify the current state of play as regards the progress of operational data, (b) planning process review workshops to deep dive into operational data archetypes and understand how operational data deliver reporting at policy levels, and (c) planning performance management mapping with stakeholders to determine how operational data answers performance management continuums through the SSHDP and BMGF Performance Strategy.

At the facility level, the approach involves field visits to 44 primary health facilities (representing 1 per LGA) to assess the alignment of operational data and processes at the facility to zonal and state levels.

The methodology is anchored on the principle of entrenching state ownership in the design, preparation, and presentation of the assessment while focusing on connecting the findings to logical and stepwise improvement plans required to address the use of operational data for decision-making in Kano State.

In this regard, a deliberate ***Engagement and Coordination Model*** for peer review learning and assessment was set up to increase the chances of acceptance of the results and improve the participation of stakeholders in the design, use, and consumption of the results of the diagnostic reviews.

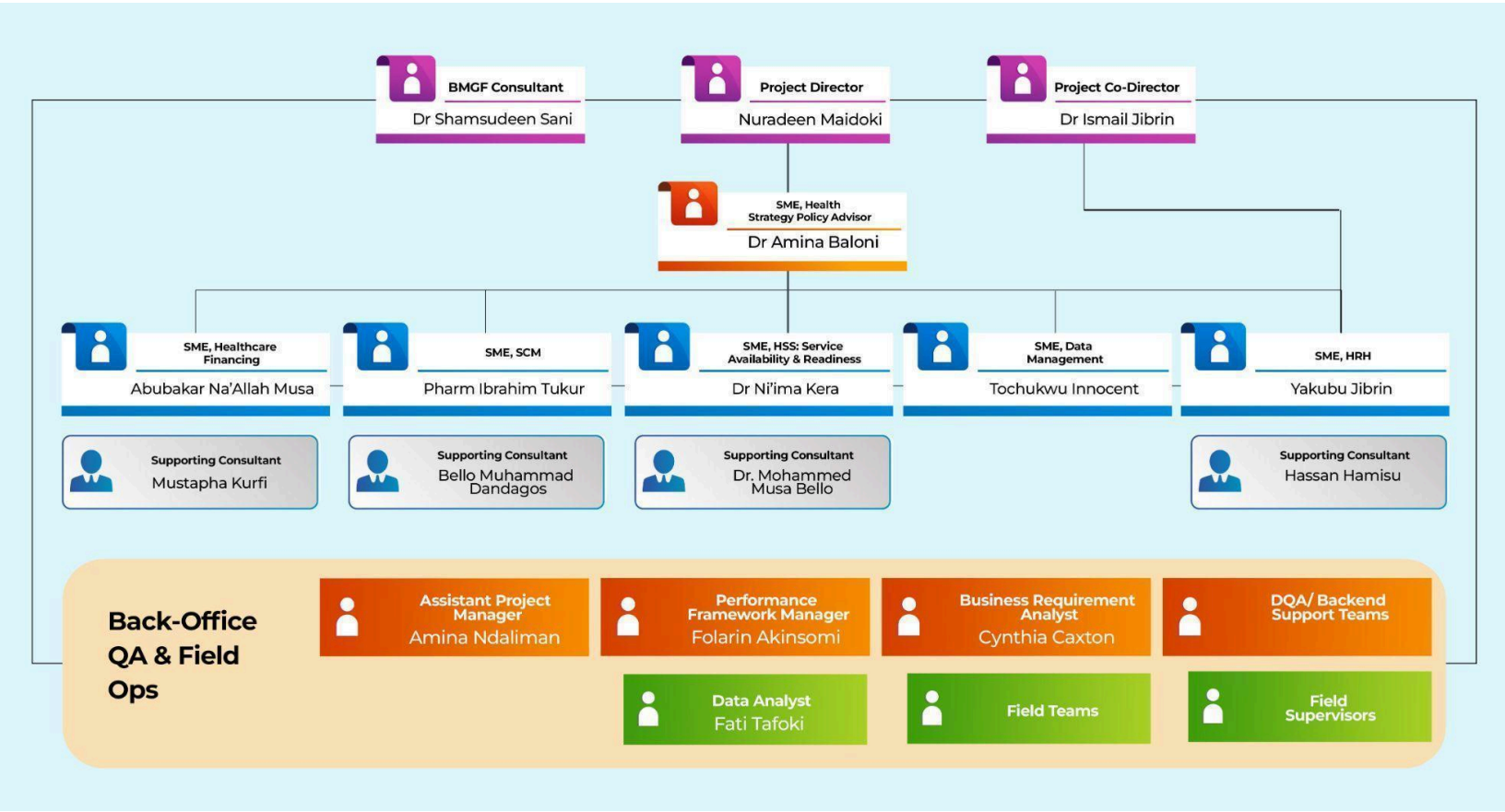
To ensure institutional memory and adoption of best practices around the use of operational data, Subject Matter Experts (SMEs) were pooled together from Kano and Kaduna to gain practical insights and perspectives from the local lens approach of experts in Kano and also gain experiences from the use of operational data experts in Kaduna.

Furthermore, the State Primary Healthcare Development Management Board, chaired by the Director of Planning, Monitoring & Evaluation, anchored a coordination framework that adequately defined and planned stakeholder engagements and review of operational processes for the exercise.

1.3.1 Team Composition

A team of seasoned experts was selected for the assignment, with a Strategic Health Policy Advisor engaged in coordinating and providing policy perspectives and directions for the assessment from 5 other core subject matter experts focusing on Human Resources for Health, Supply Chain Management, Healthcare Financing, Service Availability & Readiness & Data Management domains.

The structure of the engagement team is further provided in the organogram below:



1.3.2 Functions of the Assessment Team

- **BMGF State Resident Consultant:** Work with the Assessment Team to provide more context around the BMGF body of knowledge and validate partner-level assessment on the diagnostic reviews across identified thematic areas.

- **Project Director:** Provide general coordination around implementing the diagnostic review, ensuring adherence to the milestone timelines, planning the assessment, and engaging with the stakeholders.

- **Health Strategy Policy Advisor:** Facilitate technical advisory support for NFTI and other SMEs across the five identified domain areas. Give overall strategy advice to ensure adequate and timely implementation of the assessment.

- **SME, Healthcare Financing:** Facilitate and provide technical advisory on healthcare financing processes, activities, and outputs to the team, especially around macro-level financing and last-mile financing to the facility level.

- **SME, Human Resource for Health:** Facilitate and provide technical advisory on human resources for health outcomes to the team, especially around HRHMIS, retirement forecasting, leave management, and talent management.

- **SME, Supply Chain Management:** Facilitate and provide the team with technical advisory on supply chain management, especially around stock quantification, warehousing and inventory management, consumption, expiry, and loss tracking.

- **SME. Service Availability & Readiness:** Facilitate and provide technical advisory within the service availability and readiness domain to the team, especially regarding facility readiness, service coverage and distribution, service quality, and the availability of drugs and commodities.

- **SME, Data Management:** Facilitate and provide technical advisory on health data management processes and operationalization to the team, especially around the Bureau of Statistics capacity assessment to serve as a data service provider.

- **Supporting Consultant, Healthcare Financing:** Assist the SME HCF and provide the required data, documentation, and insights for technical advisory on Healthcare Financing to the team.

- **Supporting Consultant, Human Resources for Health:** Assist the SME and HRH and provide the required data, documentation, and insights for technical advisory on Human Resources for Health to the team.

- **Supporting Consultant, Supply Chain Management:** Assist the SME SCM in engaging with relevant MDAs within the supply chain domain to collect documents, data, and insights to drive understanding of the supply chain management domain.

- **Supporting Consultant, Service Availability & Readiness:** Assist the SME, Service Availability & Readiness, in providing supporting documents, data, and any insights from the MDAs on RMNCH Service Delivery Readiness, focusing on operational data.

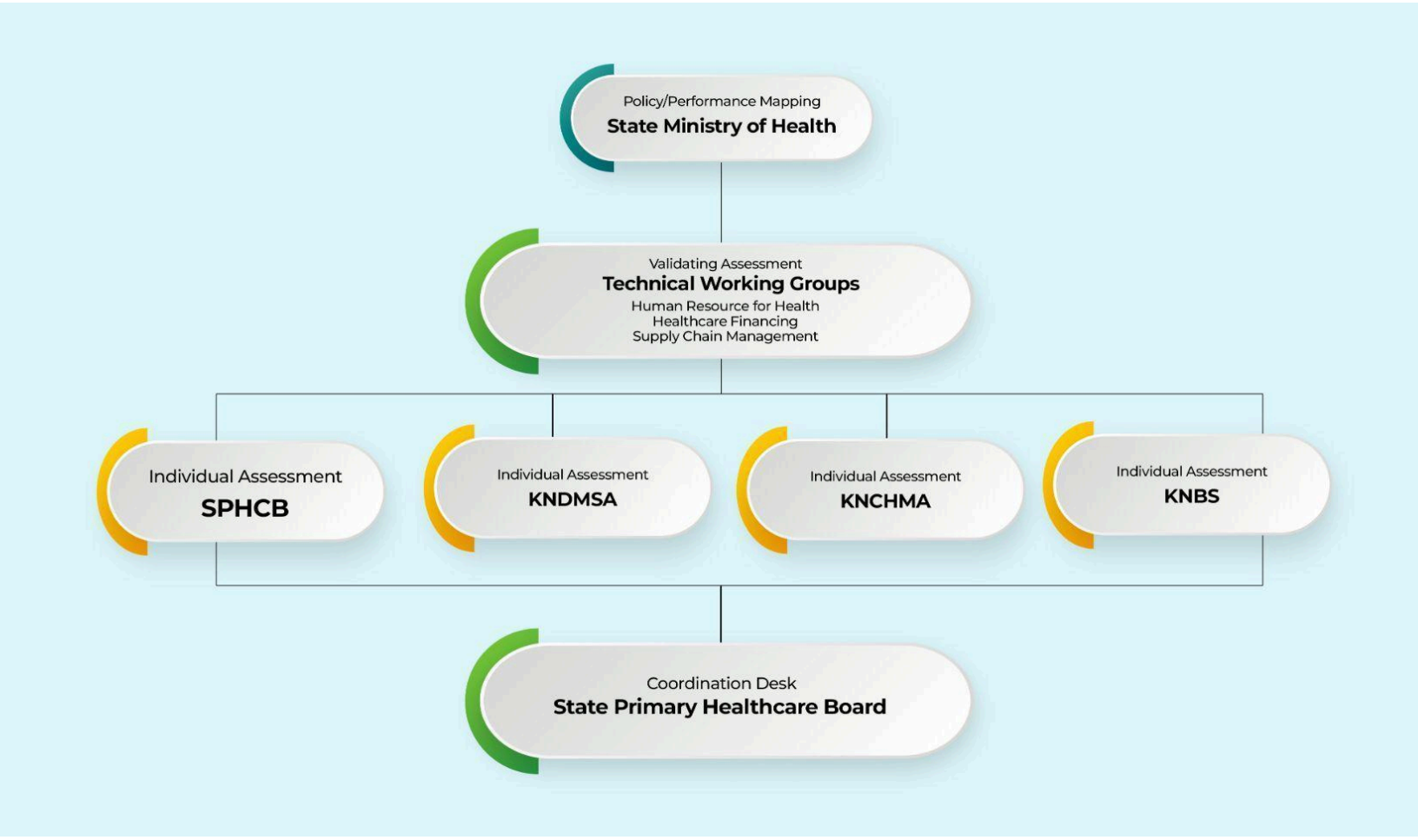
- **Supporting Consultant, Data Management:** Assist the SME, Data Management, in providing supporting documents, data, and any insights from the MDAs on operational data management outcomes about the assessment.

- **Back-Office, QA, and Field Ops:** Provide the engine room for the assessment, especially around research support, field activities, and project management of the diagnostic assessment.

1.3.3 Coordination Framework with State Institutions to Drive Ownership

A coordination framework was integrated to give the State Primary Health Agency the central coordinating role of planning and to provide a frame for joint assessment of the operational data landscape in Kano across the five domain areas.

The Director of Planning, Monitoring, and Evaluation at the SPHCB & SMOH served as the coordination desk office for individual assessment, validating the assessment, and performance management mapping operational data to policy perspectives. It is important to note that the coordination framework has been designed as a 100% government-driven architecture to guide the coordination of MDAs as part of ensuring ownership and inclusion, as shown in the diagram below:

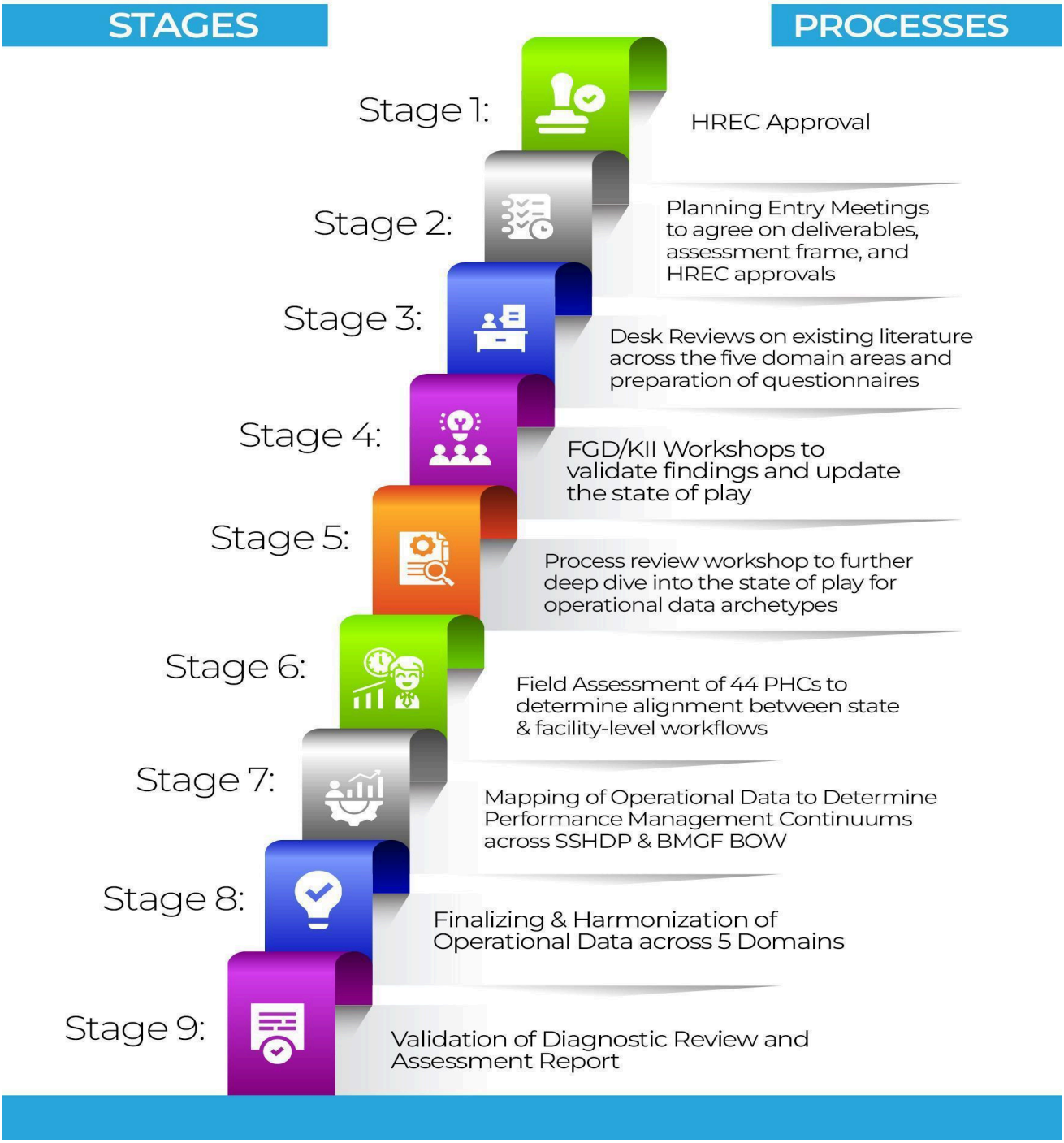


The core functions of the Desk Office include the following:

- Planning of Stakeholder Engagements for Individual Assessments
- Provision of study materials on previous assessments and reports for desk reviews
- Plan the coordination of the assessment, ensuring state inputs are considered, and the assessment is wholly owned by the state, including improvement suggestions.
- Ensure required stakeholders participate in the KIIs, Process Review Workshops, and Performance Management Mapping.

1.3.4 Process Roadmap for the Operational Data Diagnostic Reviews & Assessment.

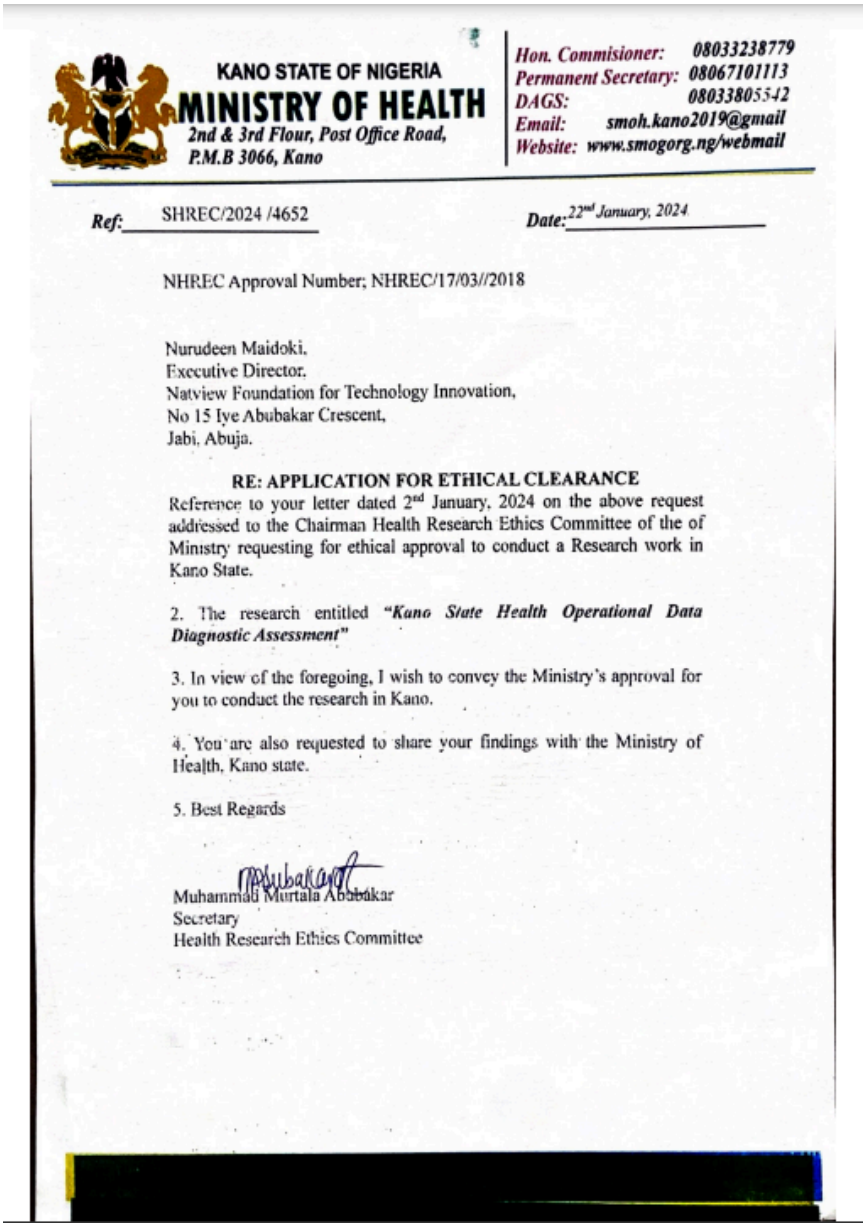
The process roadmap provides a stepwise chronological order for the diagnostic assessment. A key driver of success for the assessment was ensuring state inclusion as part of the planning and analysis processes, as shown below:



1.3.5 Process Roadmap Deep Dives

1.3.5.1 Stage 1: HREC Approval

The assessment kickstarted with an application for HREC approval from the Health Research Ethical Committee (HREC) to ensure that the assessment meets the ethical and scientific standards required to conduct an assessment in the state and is in the state's best interest. HREC Approval was received from the State Ministry of Health as shown below:



KANO STATE OF NIGERIA
MINISTRY OF HEALTH
2nd & 3rd Flour, Post Office Road,
P.M.B 3066, Kano

Hon. Commisioner: 08033238779
Permanent Secretary: 08067101113
DAGS: 08033805542
Email: smoh.kano2019@gmail
Website: www.smogorg.ng/webmail

Ref: SHREC/2024 /4652 Date: 22nd January, 2024

NHREC Approval Number; NHREC/17/03//2018

Nurudeen Maidoki,
Executive Director,
Natview Foundation for Technology Innovation,
No 15 Iye Abubakar Crescent,
Jabi, Abuja.

RE: APPLICATION FOR ETHICAL CLEARANCE

Reference to your letter dated 2nd January, 2024 on the above request addressed to the Chairman Health Research Ethics Committee of the of Ministry requesting for ethical approval to conduct a Research work in Kano State.

2. The research entitled ***"Kano State Health Operational Data Diagnostic Assessment"***

3. In view of the foregoing, I wish to convey the Ministry's approval for you to conduct the research in Kano.

4. You are also requested to share your findings with the Ministry of Health, Kano state.

5. Best Regards

Muhammad Murtala Abubakar
Secretary
Health Research Ethics Committee

HREC Approval Letter

1.3.5.2 Stage 2: Planning Stakeholders' Entry Meetings to Agree on Deliverables & Assessment Frames

The Entry Meetings provided the opportunity to engage with the state health ecosystem leadership to introduce the objectives of the reviews and expected deliverables and assessment frames for existing desk reviews across the five domain areas the assessment team still needs to cover. The entry meetings also provided an opportunity to discuss the coordination framework and how to implement an inclusive assessment.

ES, KHETFUND

ES, KPHCMB

SMES & SUPPORTING CONSULTANTS

DAG, KSCHMA

DPRS, SMOH

DPRS, KSCHMA

Group Pictures with the SPHCMB team

Group Picture KNBS Team

Group Picture with DMCSMA team

Group Picture with SMOH team

Group Picture with KHETFUND team

Group Picture with KACHMA team

Pictures of the Kano State Entry Meetings

1.3.5.3 Stage 3: Desk Reviews on Existing Literature across the 5 Domain Areas and Preparation of Questionnaire

As part of the assessment process, the Desk Review stage focused on reviewing existing studies and assessments in Kano across the five domain areas to understand the structure, institutional arrangements, and operational data archetypes. A total of **51** study materials and assessments were studied based on the following components:

- Governance and Institutional frameworks across each of the domain areas
- Understanding operational data Archetypes
- Understanding how operational data supports performance management
- Identifying gaps and opportunities to improve the use and uptake of operational data.

Furthermore, a political economy analysis was done to determine the appetite for reforms and improvement around the use of operational data. This includes the review of questionnaires to support clarifying the state of play across the five domain areas.

The following study materials were used as part of the assessment.

Domains	Existing Study Materials for Desk Reviews
Human Resource for Health	- *NPHCDA Preliminary Analysis of PHC HRH Profiling in Kano State* - *NPHCDA Minimum Service Package Report (Adaptation & Costing Reports) for PHCs.* - *Kano State HRH Workforce Registry -2021* - *Kano State HRH Strategic Plan* - *Kano State HRH Policy* - *Kano State HRH Assessment* - *Human Resources for Health (HRH) Indicator Compendium* - *Kano State Health Systems Strengthening Program Technical Review* - *Health System Assessment Approach*
Service Availability & Readiness	- *KNPHCMB Operational Guideline* - *Kano State Primary Healthcare Management Board Law* - *Minimum Standard for Primary Healthcare In Nigeria* - *Kano State Strategic Health Development Plan* - *KNPHCMB Regulations* - *State Sustainable Health Commodities Supply System Committee Operational Manual* - *The Revised Ward Health System Strategy: A Harmonized Framework* - *NHMIS Annual Report* - *HSCL-Kano State PHC Landscape Assessment* - *eHealth Kano State Primary Healthcare Monitoring and Evaluation Systems Report* - *DAI- Kano State PHC Management Capacity Assessment*
Healthcare Financing	- *Proposed Public Procurement Manual* - *DAI- Kano State PHC Management Capacity Assessment* - *Kaduna State Primary Health Care Management Strengthening Training Programme* - *Cost Analysis of Primary Health Care in Kano and Kaduna States* - *KNCHMA Operational Guideline* - *KSPHCMB Assessment Report* - *KNSG 2021 Budget* - *KNSG 2022 Budget* - *KNSG 2023 Budget* - *Decentralized Facility Financing Training Manual* - *Kano Public Financial Management Law*

	- *Basic Health Care Provision Fund (BHCPF)* - *BHCPF Guidelines* - *BHCPF Quality Improvement process and tool* - *Fiscal Space for Health Financing in Nigeria* - *Kano State 2024 Health Sector AOP* - *Kano State MTEF 2021- 23* - *Financial Operational Autonomy* - *Kano State Revenue-Codification Law* - *Kano State 2020-approved budget-Supplementary* - *Full Year Performance- 2020*
Supply Chain Management	- *BMGF INV015740_ 2023: Arc-ESM Progress Report on SCM in Kano State* - *Kano Drug Management, Consumables & Supply Agency (DMCSA) Law* - *DRF Operational Guidelines for Primary Healthcare Facilities in Kano State* - *Kano SPHCMB Operational Guideline* - *Kano State DMCSA Assessment Reports* - *Operational Manual for Sustainable Health Commodities Supply System (SHCSS)* - *Kano State DMCSA Supply Chain Work Plan Implementation Reports*
Data Management	- *Kano State Bureau of Statistics Master Plan* - *Kano State Bureau of Statistics Law & Establishment Act* - *Kano State Bureau of Statistics Background History* - *Digest of Health Statistics 2020*

Upon completion of the desk review, a Preliminary Briefing Report (including questionnaires) for each domain was developed as a guiding frame for the FGD/KII session with the Kano State Team (across top, mid, and lower level cadres) to update the current state of play.

1.3.5.4 Stage 4: Focus Group Discussions/Key Informant Interviews to Validate the Findings of the Desk Reviews and Update the State of Play

The FGD/KII Session was a three-day validation session carried out by the sector experts to validate findings from existing Desk Reviews. The session was designed to gain additional insights into the desk reviews and update the assessment report into a final landscape assessment report.

The questionnaires, as provided in Appendix I, were deployed to various levels of stakeholders within the health ecosystems (SMoH, KPHCMB, DMCSA, KHETFUND, KACHMA & KSBS). The stakeholders include Low-Level (Program officers, PHC Coordinators at Zonal and LGA Levels), mid-level (Deputy Directors, Senior Program Officers), and Top-Level (Directors, Executive Secretaries, Commissioners, Deputy Governors, Governors, etc.).

The FGD/KII provides an opportunity to understand current gaps further, prioritize focus areas with stakeholders related to performance management, and change management considerations that need to be in place to achieve sustainability.

The table below lists all stakeholders engaged during the FGD/KII sessions. Furthermore, Appendix II provides the attendance sheet of stakeholders engaged in the sessions.

S/NO	Participants Name	Organization	Designation
Service Readiness/ Delivery(Equipment & Infrastructure)			
1	Sa'adatu Said Muhammad	SPHCMB	SEPO/UNGG
2	Amina Yusuf Turaki	SPHCMB	REPZD BICHI
3	Nana Idris Musa	SPHCMB	NPF/D/TOFA
4	Dr. Abubakar Zarewa	SPHCMB	TADG/MOH
5	Habib Mohammad Habib	SPHCMB	H/E
6	Zahra Suleiman Adam	PHIMA	DAGS
7	Ali Ibrahim Sani	SPHCMB	LGTBLS
8	Aishatu Abdulkadir	SPHCMB	DMS
9	Saadatu Ibrahim	SPHCMB	SIO
10	Aisha Usman Hassan	SPHCMB	ZD
11	Asabe Muhammad	SPHCMB	ZD

12	Aishatu Sani Wali	SPHCMB	ZD
13	Dr Ahmed Tijjani Habibu	SPHCMB	DFH
14	Sani A Ungogo	SPHCMB	DE & PH
Human Resource for Health			
1	Bashir Tukur Abdullahi	SPHCMB	SO
2	Sani Garba Mohammed	SPHCMB	HRH Coordinator
3	Nazeer Tanko Kyaure	SPHCMB	DAHR
4	Adamu Musa	SPHCMB	DDP M&E
5	Ismail M Jibrin	HCM	MD/CEO
6	Suleman Tanimu	HMB	DAGS
7	Salamatu M Sani	HCM	M&E
8	Ali Muhammad Usman	HCM	Report Writer
9	Hassan Hamisu Ya'u	HCM/SPHCMB	IT MANAGER
10	Ibrahim Mohammed Gidado	HCM	Proj. Coord. HRH Domain
11	Yakubu Jibrin	HCM	SME (HRH)
Healthcare Financing			
1	Dahiru Ibrahim Shuaibu	KHETFUND	DPRS
2	Abdulmalik Kabiru	KHETFUND	D/ACCT
3	Bashir Sunusi	SPHCMB	DPM&E
4	Muhammad Murtala Abubakar	SMOH	DPRS
5	Sadiq Imam Abdullahi	KSCHMA	DPRS
6	Mustapha Kurfi	NFTI	SC
7	Omofolarin Akinsomi	NFTI	M&E
8	Tijjani Abubakar	SPHCMB	AUDITOR
9	Musa Abubakar	CONSULTANT	SME HF
10	Kakisu Ibrahim Ahmad	SPHCMB	PRO OFFICER
11	Aliyu M Zakari	KSCHMA	DAHR
12	Suleman Abdu	SPHCMB	M&E
13	Jamila Mahmud Abuubakar	HMB	CPO
Supply Chain Management			
1	Salisu Abubakar	SPHCMB	EDFP
2	Isah Labaran Uba	SMOH	LMCU-COORDINATOR

3	Auwalu Alkasim Ahmad	SMOH	PSMO-SMOH
4	Muhammad Muttaka Umar	SPHCMB	SLO
5	Pharm. Abdullahi A Danzabuwa	SPHCMB	DPS
6	Pharm. Aminu Bashir	PHIMA	DPS
7	Pharm Kamilu Muhd Salisu	SMOH	DPS
8	Sabitu Dabo Umar	SMOH	RH/FP SLO
9	Fatima Tafoki	NFTI	SPO
10	Pharm Isah Bala Musa	HMB	Z.D SMJGH
11	Pharm Sani Danjuma Haruna	HMB	DPS
12	Nura Yahaya	HMB	SHCSS FP
13	Muktar Babangida	SPHCMB	ZEDO
14	Sabo M Garba	SPHCMB	LGA EDO
15	Aminu Bello	DMCSA	HOD DNJS
16	Bello Muhd Dandago	NFTI	SC SCM
17	Pharm Tukur Ibrahim	NFTI	SME SC
Data Management			
1	Dr Aliyu Isa Aliyu	KSBS	S.G
2	Bashir G Ibrahim	KSBS	DAGS
3	Aminu A Suraj	KSBS	DD ICT
4	Awwal Yau Muhd	KSBS	D.FIELD SUS
5	Salihu H Dogarai	KSBS	D.DEMOGRAPHY
6	Ahmad M Mubarak	KSBS	DRSH&EC
7	Fatahu Rabiu Muhd	KSBS	DDRS & EG
8	Salisu Bala Indabawa	KSBS	STAFF OFFICER
9	Farouk Sani	KSBS	DEP.DIRECTOR
10	Mahmoud Idris Aliyu	KSBS	H.O.A
11	Ayuba Yahaya	KSBS	P.A.S
12	Muhammad Aminu Bornoma	NFTI	J.D ASS.
13	Abdulkarim Adamu	NFTI	J.D ASS.
14	Taisira Abdulra'uf Muhd	KSBS	ADMIN & G SERV
15	Tochukwu Innocent	SME NFTI	SME DM
16	Nuradeen Maidoki	NFTI	ED
17	Buhari Ali Muhammad	KSBS	D. ICT
18	Isiyaku Lawan Dawaki	KSBS	Statistician 1
19	Sani Usman Kura	KSBS	CSO

20	Bala Mato	KSBS	PSO
21	Nasiru Musa Shehu	KSBS	STATISTICIAN OFF -1
22	Abubakar Faruk Kabara	KSBS	STATISTICIAN 1
23	Nura Yahaya Abdullahi	KSBS	PCAT
24	Umar Datti	KSBS	HSO
25	Mansur Tijjani	KSBS	SO
26	Idris Muazu Abubakar	KSBS	SDPA
27	Labaran Ado	KSBS	CSO
28	Abdullahi Isyaku	KSBS	STATISTICIAN 1
29	Aminu Umar Saad	OHCS	CDPA
30	Musa Shuaibu	KSBS	CCO ADMIN
31	Aminu Bashir	KSBS	C/O
32	Abdulaziz Hamisu	KSBS	ENUMERATOR

The composite weighting for the FGD/KII questionnaire is provided below.

Service Delivery Domain

Assessment Area	**Weighting**
Service Availability and Distribution	13%
Service Coverage & Quality	9%
Infrastructure and Equipment Availability	32.5%
Availability of Drugs and Commodities	11.5%
Demand Creation through Microplanning and Population Estimation	17%
POI Mapping	7%
Client Satisfaction	10%
Total Score (100%)	**100%**

Healthcare Financing Domain

Assessment Area	Weighting
Health Planning and Budgeting	17.5%
PHC Funding and Last Mile Financing	19.5%
Basic Health Care Provision Fund (BHCPF)	18.5%
PHC Performance Financing	9%
Health Care Financing Governance	13%
Enhanced Health Financial Data Integration	2.5%
Capacity Building	4%
Stakeholder Engagement	2%
Monitoring and Evaluation	7%
Technology Adaptation	7%
Total Score(100%)	**100%**

Human Resource for Health Domain

Assessment Area	Weighting
Analytics, Forecasting and Planning	28.75%
HRH Production*	-
HRH Management and Administration	26.50%
Productivity & Performance Management	07.50%
Talent Management	14.50%
Incentives/Rewards and Sanctions*	-
Retirement and Attrition	01.50%
Compensation and HRH Financing	21.25%
Total Score(100%)	**100%**

Supply Chain Management Domain

Assessment Area	Weighting
Supply Chain Operations	12%
Vaccine Management and CCE	33.5%
Dry Store and Essential Drugs	18.5%
Requisition and Delivery	14%
Last Mile Consumption and Stockouts	22%
Total Score(100%)	**100%**

Upon completion of the FGD/KII sessions, a maturity gradient was developed that scores the state across the five domain areas, identifying gaps and process improvement plans that can drive incremental improvements in the use of operational data.

Cross Section of Participants during FGDs across Domain Areas

1.3.5.5 Stage 5: Process Review Workshop to further deep dive into the state of play for operational archetypes

The Process Review Workshop was designed as a three-day boarding session focused on deep diving into the operational data archetypes identified during the Desk Reviews and FGD/KII sessions to understand the process workflows and reporting checklists achieved through existing operational data.

The process review workshops successfully identified how data moves vertically from the facility level to the policy level for decision-making and horizontally from planning strategy to the implementation stage at the state level.

A schematic and diagrammatic workflow was designed and validated with the stakeholders present during the sessions. The table below lists the stakeholders present for the process review workshops.

S/NO	Participants Name	Organization	Designation
Healthcare Financing			
1	NASIR TAFIDA	SMOH	CDPO
2	DR HABIBU SALISU ISAH	SPHCMB	SSA PHCMB
3	BASHIR IDRIS MUAZU	SPHCMB	DIRECTOR FINANCE
4	MUHAMMAD MURTALA ABUBAKAR	SMOH	DPRS
5	ADAMU MUSA	SPHCMB	DDPM&E
6	MUSTAPHA KURFI	NFTI	SC
7	FOLARIN AKINSOMI	NFTI	M&E
8	TIJJANI ABUBAKAR	SPHCMB	AUDITOR
9	MUSA ABUBAKAR	CONSULTANT	SME HF
10	KAKISU IBRAHIM AHMAD	SPHCMB	PRO OFFICER
11	MUHAMMAD AMINU BORNOMA	NFTI	J.D. ASSOCIATE
12	MUDATHIR SALAHUDEEN	NFTI	ANALYST
Service Delivery			
1	DR HAJARA KERA	NFTI	SME

2	SAGIR MUHAMMAD NASIR	SPHCMB	DHIS2
3	DR ABUBAKAR GALI ZAREWA	SPHCMB	TA DG/MOH
4	AISHATU SANI WALI	SPHCMB	Z.D
5	KABIRU HASSAN	SPHCMB	P.D. SURV
6	ISAH AMINU KWASS	SPHCMB	PHCC
7	MUHAMMED L. TAHIR	SPHCMB	SSC
8	ADAMU MUSA	SPHCMB	DDPM&E
9	BASIRU ISYAKU	SPHCMB	M&E
10	BASHIR SUNUSI	SPHCMB	DPM&E
11	DR MUSA M BELLO	NFTI	SC
12	CYNTHIA CAXTOM	NFTI	B.R.A
Human Resource for Health			
1	MAS'UD A ABBAS	SPHCMB	I.T. OFFICER
2	SANI GARBA MOHAMMED	SPHCMB	HRH Coordinator
3	NAZEER TANKO KYAURE	SPHCMB	DAHR
4	ALIYU ADO DANMALIKI	SPHCMB	HRH OFFICER
5	ISMAIL M JIBRIN	HCM	MD/CEO
6	ZAINAB ALIYU MUKHTAR	PHIMA	DPRS
7	SALAMATU M SANI	HCM	M&E
8	KHADIJAH H SA'ID	PHIMA	DAGS
9	HASSAN HAMISU YA'U	HCM/SPHCMB	IT MANAGER
10	MUHAMMED LAWAN TAHIR	KSPHCMB	SSC
11	YAKUBU JIBRIN	HCM	SME (HRH)
12	ABDULKARIM ADAMU	NFTI	J.D.A
Supply Chain Management			
1	SALISU ABUBAKAR	SPHCMB	EDFP
2	ISAH LABARAN UBA	SMOH	LMCU-COORDINATOR
3	AUWALU ALKASIM AHMAD	SMOH	PSMO-SMOH

4	MUHAMMAD MUTTAKA UMAR	SPHCMB	SLO
5	PHARM. ABDULLAHI A DANZABUWA	SPHCMB	DPS
6	PHARM. AMINU BASHIR	PHIMA	DPS
7	PHARM KAMILU MUHD SALISU	SMOH	DPS
8	SABITU DABO UMAR	SMOH	RH/FP SLO
9	FATIMA TAFOKI	NFTI	SPO
10	PHARM ISAH BALA MUSA	HMB	Z.D SMJGH
11	PHARM SANI DANJUMA HARUNA	HMB	DPS
12	NURA YAHAYA	HMB	SHCSS FP
13	MUKTAR BABANGIDA	SPHCMB	ZEDO
14	SABO M GARBA	SPHCMB	LGA EDO
15	AMINU BELLO	DMCSA	HOD DNJS
16	BELLO MUHD DANDAGO	NFTI	SC SCM
17	PHARM TUKUR IBRAHIM	NFTI	SME SC

1.3.5.6 Stage 6: Field Assessment of 44 PHCs to determine alignment between state and facility-level workflows.

The Field Assessment Stage collected facility-level information across 44 PHCs (one per LGA) to assess how operational data at the facility level are used at the facility, LGA, zonal, and state levels.

The field assessment assessed facility-level operational datasets to understand the types of data collected and generated, process workflows, and reports generated at the facility level and how they can be aggregated to form state-level perspectives.

A facility selection criteria focusing on randomly selecting 44 facilities from a pool of 188 facilities with the following selection criteria were selected.

Criteria	**A**	**B**
Components	**The state-provided list of 188 facilities (at least 4 per LGA)—44 were selected randomly based on the criteria.**	
Ownership	***State Government***	***State Government***
Facility Type	***PHC***	***PHC***
Location	***⅔ Urban and ⅓ Rural***	
Operating Hours	***24hrs(60%)***	***8- 12 hrs (40%)***
Services	***Comprehensive RMNCH services***	***RMNCH services***
Other Programs	***BHCPF, SHIS, Free services, cMPDSR, DRF (86%)***	***Free services (14%)***
HR Strength	***Staff + Volunteers***	***Staff + Volunteers***
Community Structures	***Presence of community structures- WDCs, VDCs, FHCs, etc. (86%)***	***FHCs Only (14%)***

A total of 44 PHCs were visited, as shown below:

	LGA	Health facility name
1	Ajingi	Sakalawa Health Post
2	Albasu	Panda Primary Health Center
3	Bagwai	Abbas Primary Health Center
4	Bebeji	Rahama Basic Health Center
5	Bichi	Danzabuwa Model Primary Health Center
6	Bunkure	Gurjiya Primary Health Center
7	Dala	Goron Dutse MCH
8	Dambatta	Kore Model Primary Health Center
9	Dawakin Kudu	Tsakuwa Primary Health Center
10	Dawakin Tofa	Danguguwa Primary Health Center
11	Doguwa	Ririwai Basic Health Clinic
12	Fagge	Kwachiri Model Primary Health Center
13	Gabasawa	Zakirai Primary Health Center
14	Ghari	Kunchi Primary Health Center
15	Garko	Garko Model Primary Health Center
16	Garun Malam	Garun Malan Primary Health Clinic
17	Gaya	Kademi Primary Health Center
18	Gezawa	Tsamiya Babba Primary Health Centre
19	Gwale	Aisami PHC
20	Gwarzo	Getso Maternity and Child Primary Health Center
21	Kabo	Garo Primary Health Center
22	Kano Municipal	Unguwar Gini Primary Health Center
23	Karaye	Karaye Comprehensive Health Center
24	Kibiya	Kibiya Primary Health Center
25	Kiru	Unguwar Makera
26	Kumbotso	Turai Yar'adua Primary Health Centre
27	Kura	Dan Hassan Primary Health Center
28	Madobi	Burji Model Primary Health Center
29	Makoda	Makoda Model Primary Health Care
30	Minjibir	Kunya Primary Health Center
31	Nassarawa	Dawakin Dakata Primary Health Center
32	Rano	Rano Dawaki Health Clinic
33	Rimin Gado	Rimin Gado Comprehensive Health Center
34	Rogo	Bari Model Primary Health Care
35	Shanono	Kadamu Model Primary Health Center
36	Sumaila	Rimi Basic Health Clinic
37	Takai	Huguma Primary Health Centre
38	Tarauni	Hayin Dae Primary Health Centre

39	Tofa	Lambu Basic Health Clinic
40	Tsanyawa	Tsanyawa Comprehensive Health Center
41	Tudun Wada	Burum Burum Primary Health Center
42	Ungogo	Ungogo Primary Health Center
43	Warawa	Tamburawa Gabbas Primary Health Center
44	Wudil	Lajawa Primary Health Center

The Field Assessment questionnaire is provided in Appendix III. The composite weighting for the Field Assessment questionnaire is provided below:

Domain Area	**Weighting (%)**
Service Readiness	**25%**
Service Availability	7.5
Quality of Care	4
Infrastructure and Equipment	7.5
Community Level Data	6
Healthcare Financing	**25%**
BHCPF	12
Kano Contributory Health Insurance Scheme	7
Other Funding Source -Direct Facility Funding (DFF)	6
Supply Chain Management	**25%**
Public Health and Essential Drugs (DRF)	15
Vaccines and CCEs	10
Human Resource for Health	**25%**
Nominal Roll and Payroll	6.25
Retirement and Attrition	3.75
Staff Productivity and Leave Management	5.125
Workforce Planning and Workforce Development	5
Incentives/Rewards and Sanctions	4.875
TOTAL	100%

1.3.5.7 Stage 7: Mapping of Operational Data to Determine Performance Management Continuums across the SSHDP & BMGF BOW

The Performance Management Mapping Exercise was a two-day Boarding Session designed to map performance management across the input-to-outcome continuums, which can be used to answer strategic questions from the SSHDP and BMGF Performance Management Strategy across the five domains.

The Performance Management Mapping session had a mix of stakeholders, as provided in the table below:

S/NO	Participants Name	Organization	Designation
Healthcare Financing			
1	NASIR TAFIDA	SMOH	CDPO
2	DR HABIBU SALISU ISAH	SPHCMB	SSA PHCMB
3	BASHIR IDRIS MUAZU	SPHCMB	DIRECTOR FINANCE
4	MUHAMMAD MURTALA ABUBAKAR	SMOH	DPRS
5	ADAMU MUSA	SPHCMB	DDPM&E
6	MUSTAPHA KURFI	NFTI	SC
7	FOLARIN AKINSOMI	NFTI	M&E
8	TIJJANI ABUBAKAR	SPHCMB	AUDITOR
9	MUSA ABUBAKAR	CONSULTANT	SME HF
10	KAKISU IBRAHIM AHMAD	SPHCMB	PRO OFFICER
11	MUHAMMAD AMINU BORNOMA	NFTI	J.D. ASSOCIATE
12	MUDATHIR SALAHUDEEN	NFTI	ANALYST
Service Delivery			
1	DR HAJARA KERA	NFTI	SME
2	SAGIR MUHAMMAD NASIR	SPHCMB	DHIS2
3	DR ABUBAKAR GALI ZAREWA	SPHCMB	TA DG/MOH
4	AISHATU SANI WALI	SPHCMB	Z.D
5	KABIRU HASSAN	SPHCMB	P.D. SURV

6	ISAH AMINU KWASS	SPHCMB	PHCC
7	MUHAMMED L. TAHIR	SPHCMB	SSC
8	ADAMU MUSA	SPHCMB	DDPM&E
9	BASIRU ISYAKU	SPHCMB	M&E
10	BASHIR SUNUSI	SPHCMB	DPM&E
11	DR MUSA M BELLO	NFTI	SC
12	CYNTHIA CAXTOM	NFTI	B.R.A
Human Resource for Health			
1	MAS'UD A ABBAS	SPHCMB	I.T. OFFICER
2	SANI GARBA MOHAMMED	SPHCMB	HRH Coordinator
3	NAZEER TANKO KYAURE	SPHCMB	DAHR
4	ALIYU ADO DANMALIKI	SPHCMB	HRH OFFICER
5	ISMAIL M JIBRIN	HCM	MD/CEO
6	ZAINAB ALIYU MUKHTAR	PHIMA	DPRS
7	SALAMATU M SANI	HCM	M&E
8	KHADIJAH H SA'ID	PHIMA	DAGS
9	HASSAN HAMISU YA'U	HCM/SPHCMB	IT MANAGER
10	MUHAMMED LAWAN TAHIR	KSPHCMB	SSC
11	YAKUBU JIBRIN	HCM	SME (HRH)
12	ABDULKARIM ADAMU	NFTI	J.D.A
Supply Chain Management			
1	SALISU ABUBAKAR	SPHCMB	EDFP
2	ISAH LABARAN UBA	SMOH	LMCU-COORDINATOR
3	AUWALU ALKASIM AHMAD	SMOH	PSMO-SMOH
4	MUHAMMAD MUTTAKA UMAR	SPHCMB	SLO
5	PHARM. ABDULLAHI A DANZABUWA	SPHCMB	DPS

6	PHARM. AMINU BASHIR	PHIMA	DPS
7	PHARM KAMILU MUHD SALISU	SMOH	DPS
8	SABITU DABO UMAR	SMOH	RH/FP SLO
9	FATIMA TAFOKI	NFTI	SPO
10	PHARM ISAH BALA MUSA	HMB	Z.D SMJGH
11	PHARM SANI DANJUMA HARUNA	HMB	DPS
12	NURA YAHAYA	HMB	SHCSS FP
13	MUKTAR BABANGIDA	SPHCMB	ZEDO
14	SABO M GARBA	SPHCMB	LGA EDO
15	AMINU BELLO	DMCSA	HOD DNJS
16	BELLO MUHD DANDAGO	NFTI	SC SCM
17	PHARM TUKUR IBRAHIM	NFTI	SME SC

Cross Section of Participants during Performance Management sessions across Domain Areas

1.3.5.8 Stage 8: Finalizing & Harmonizing Operational Data across the 5 Domain Areas

In Stage 8, the assessment team led by the strategic health policy advisor and sector experts deliberated on the report. It harmonized positions regarding the (a) Identification of gaps in the use of operational data, (b) identified process improvement plans that must be achieved for the use and uptake of operational data to generate insights, and (c) agreed on performance management mappings that could be generated from existing operational data archetypes.

1.3.5.9 Stage 9: Validation of Diagnostic Review & Assessment Report

Finally, the Report's findings were shared with the State Teams in two validation sessions (one in Kano and one in Abuja) to further scrutinize the Report and solicit contributions to enrich the Report prior to its finalization and launch.

Cross section of participants at the validation sessions in Kano and Abuja

1.4 Maturity Gradient Scoring for the Use & Uptake of Operational Data

A maturity gradient was developed, classifying the maturity levels around the use of operational data and performance management insights into five stages, as shown below:

Table 2.4: Maturity Gradient

Stages	**Average Weighting Score (%)**
Incubation	0% - 39%
Maturing	40% - 49%
Standardized	50% - 69%
Matured	70% - 89%
Innovative	90% - 100%

1.5 Limitations of the Kano State Diagnostic Review and Operational Data Assessment

The diagnostic assessment report focused on understanding the various data collection and analysis platforms used across five domains of interest. Operational data are not exhaustive and do not provide a deep dive analysis into detailed processes, use cases, funding, and successes achieved using operational data.

Furthermore, it provides descriptive functions of the platform used and identifies its functionality and operationality status in answering performance questions relating to the SSHDP and other state policy plans.

A summary of the limitations is provided below:

a. **No detailed assessment or analysis of the operational data was conducted to determine the functionality of operationalization**. The diagnostic assessment relied on the physical engagement of critical stakeholders responsible for the data platforms across an iterative process to map out

performance perspectives and determine the potential to drive operational planning.

b. **No cost-benefit analysis was done** on operational data regarding their financial costs, who funds them, and their ownership. The diagnostic focused on understanding who collects the data and senior management teams and policymakers in need of the data for performance and policy perspectives.

c. **Not all components under the 5 domains were covered given time limitations for the diagnostic review**. For example, under service readiness, we did not cover environmental health and laboratory services. The diagnostic review focused on prioritizing key components that were defined by stakeholders as important to driving performance improvement. Also the full spectrum of MSP was not fully covered to provide a clear line of sight on MSP metrics and indicators.

d. The assessment did not delve into **understanding of the limitations of existing systems or behavioral issues limiting the use and uptake of existing data platforms** for performance improvement.

e. The **Healthcare financing domain did not cover data tools from insurance gateways and capitation to facilities.** The health care financing domain focused on macro level financing (through the budget) and last mile financing to the health facility due to time constraints and the need to prioritize macro financing perspective to understand budgetary allocation and cash backing to the health sector.

2.0 Domain 1: Supply Chain Management (SCM)

2.1 Introduction

Effective supply chain management, as it relates to operational data, focuses on data flow around managing essential medicines, MNCH, FP, Malaria, Immunization, and other public health commodities (Vaccines, RH, TB&BL, Malaria, and HIV/AIDS) from source to clients at the facility level.

The SCM domain tries to understand data flows, including tracking data from warehousing, distribution, and inventory management through the Logistics Management Information System (LMIS), ensuring the six rights of logistics are met:

- **The right client** receives the **right commodity** at the **right health facility** at the **right time,** in the **right quantity,** and in the **right condition.**

The diagnostic review provides a frame for understanding operational data in supply chain management across the following components:

- Assessing Supply Chain Operations (12%)
- Assessing Vaccine Management and CCE (33.5%)
- Assessing Dry Store and Essential Drugs (18.5%)
- Assessing Requisition and Delivery (14%)
- Assessing Last Mile Consumption and Stockouts (22%)

The supply chain management ecosystem in Kano provides opportunities for insight generation across the value chain of the supply chain, especially relating to (1) Drugs and commodity procurement sourcing through open competitive tender (80% of EM commodities) from PMG-MAN, (2) Warehousing and inventory management across central and zonal stores and warehouses, (3) Requisition, procurement and supply management, especially for DRF (4) Last mile distribution of drugs, vaccines and commodities to facility level and (5) quantification of demand and supply variables for just in time deliveries.

Through supported BMGF funding, Arc-ESM has worked with the Kano State DMCSA to operationalize the National Health and Supply Chain Strategy Plan (NHSCP), focusing on achieving the following principal outcomes:

- Reducing commodity wastages by 30% across all levels and all programs from the baseline.
- Improve the availability of commodities across all levels and programs to 90% from the baseline.
- Reduce lead time between DMCSA and suppliers and DMCSA and facilities (Upper and Lower stream) to 1 week and three days, respectively.
- Strengthen accountability mechanisms for health supply chain programs across all levels.

As part of the framing for understanding the SCM as it relates to operational data, the following existing studies, laws, and data products were reviewed to provide a situational context for the SCM domain.

Domains	**Existing Study Materials for Desk Reviews**
Supply Chain Management	- BMGF INV015740_2023: Arc-ESM Progress Report on SCM in Kano State - *Kano Drug Management, Consumables & Supply Agency (DMCSA) Law* - *DRF Operational Guidelines for Primary Healthcare Facilities in Kano State* - *Kano SPHCMB Operational Guideline* - *Kano State DMCSA Assessment Reports* - *Operational Manual for Sustainable Health Commodities Supply System (SHCSS)* - *Kano State DMCSA Supply Chain Work Plan Implementation Reports*

After reviewing the various reports on supply chain management and FGD/KII sessions with SPHCMB, DMCSA, HMB, KCHMA, and PHIMA, a scoring gradient was generated after the assessment, identifying performance areas regarding data visibility for supply chain management.

From the FGD assessment, the subject matter experts grade the SCM domain with a general score of 57%, indicating a standardizing maturity gradient. This was further contextualized with a process review workshop to identify the gaps and process improvement frame for the supply chain domain.

The scoring components are provided below:

Summary Result from FGD/KII (Supply Chain Management)				
Assessment Area	**Weighting (%)**	**Actual Score**	**Percentage Score (%)**	**Growth Areas for Data**
SC Operations	12	4	**33%**	Full integration of supply chain operations at the warehouse, procurement, inventory management, and distribution. Need to utilize supply chain operations data for funding AOP and microplanning development
Vaccine Management and CCE	33.5	22	**66%**	
Dry Store and Essential Drugs	18.5	12	**65%**	
Requisition and Delivery	14	4	**29%**	Use of requisition and delivery data for state quantification and forecasting to improve last-mile delivery Work towards standardizing requisition forms to provide a single line of sight on drugs and

				commodities requests for forecasting of demand and supply.
Last Mile Consumption and Stockout	22	15	**68%**	
Total Score (100%)	**100**	**57**	**57%**	

From the table above, there is a clear line of sight for generating insights for performance management across vaccine management and CCE (64%), Dry Store and Essential Drugs (62%), and Last-Mile Consumption and stock-out (68%). For supply chain operations (35% - which includes integration of supply chain operations for Public health commodities and Essential Medicines) and requisition and delivery (32%), there is a minimal line of sight for generating insights for performance management.

The assessment aligns with the supply chain maturity gradient of the BMGF/ARC_ESM National Product Supply Chain Management Program Assessment across three main Pillars: (a) Governance, (b) Strategy, and (c) Operations, as shown in Appendix V.

The PHCs DRF operational guideline describes the establishment, management, and procedures for successfully operating the Sustainable Health Commodities Supply System (SHCSS) at Primary Health Care facilities in Kano State.

Procedures include capitalization, sales, receipts, procurement, Internal Market Operation, record-keeping, and reporting format for the various SCM schemes.

2.1.2 Governance & Institutional Assessment for MDAs within the Supply Chain Management

2.1.2.1 Assessment (Desk Review) of the Legal Framework & Institutional Structures for SCM Frames

National perspectives drive the Kano State supply ecosystem through 5 strategic plans and policies around building sustainable and integrated health commodity supply systems, especially in developing a robust DRF system with a centralized procurement system.

As seen in the ARC_ESM assessment, Kano State has one of the most successful DRF systems in the country and a functional supply chain team. The NHSCS plan focuses on developing a government-led supply chain that is financially self-reliant and has a sustainable business model.

The five national strategic plans and policies that drive the domestication and operationalization of SCM in Kano are:

- *National Health Supply Chain Strategic Plan (NHSCSP) 2021 – 2025*
- *Blueprint for the implementation of NHSCSP*
- *National DRF Operational Guideline and SOP*
- *National Drugs Distribution Guideline (NDDG)*
- *National Drugs Policy (NDP)*

The State Sustainable Health Commodities Supply System Committee (SSHCSS) provides a key governance framework for overseeing the supply chain system in Kano State and connecting it to the national supply chain architecture.

Regarding legislation and operational guidelines, Kano has a Drugs and Medical Consumables Supply Agency (DMCSA) law and operational guidelines, domesticating the National DRF, drug distribution, and other national guidelines defined through the SHCSS committee.

This has aligned with the National DRF SOP for health facilities, especially in DRF Management at the PHC level, guidance from the Primary Health Care Management Board (PHCMB), oversight by LGA on Facility Management, and reporting.

2.1.2.2 Institutional Arrangements: Organogram & Organizational Chart of MDAs related to SCM

Five governing structures drive the supply chain ecosystem, integrating the health MDAs to build a cohesive system and oversee the supply chain in Kano State.

The five governance structures include:

A. Sustainable Health Commodities Supply System Steering Committee (SHCSSS)

The committee is headed by the Honourable Commissioner for Health (HCH) and functions as an apex advisory body on drug management and use. It is responsible for the entire health supply system in the state and provides policy guidance and general oversight across all levels.

This committee includes all the Heads of Agencies in the health sector, including the Permanent Secretary of the SMoH. The Director of Pharmaceutical Sciences serves as its secretary.

B. State Sustainable Health Commodities Supply System Committee (SSHCSS)

The Director of Pharmaceutical Services heads the state committee, and its membership includes the directors of relevant health departments and MDAs in the state, with active community participation.

The committee provides strategic direction and oversight for state supply chain operations. Its members are drawn from all the Health MDAs, Community representatives, CSOs, and other relevant ministries.

C. The DMCSA/HMB/SPHCMB Management Team.

The team oversees DRF's implementation of health facilities. Individual schedules within the DMCSA/HMB/SPHCMB Management Team include:

- The **State Primary Health Care Management Board (SPHCMB)**, in conjunction with the respective Local Government Areas (LGAs), is responsible for establishing an enabling working environment for the operation of the Drug Revolving Fund (DRF) and other supply chain operations at Primary Health Care (PHC) facilities.

- This involves providing necessary resources, infrastructure, and support systems while also monitoring, supervising, and offering ongoing assistance to ensure the sustainability of the DRF within these facilities. Additionally, the PHCMB and LGAs oversee the monitoring and supervision of the LGA DRF structure to maintain accountability and transparency in fund management.

- The **Hospital Management Board (HMB)** coordinates all supply chain activities at secondary health facilities through the focal person of the sustainable health commodities supply chain.

- The **DMCSA** solely procures, warehouses, manages, and sells all required DRF items in the state. It also manufactures some syrups and suspensions according to the installed capacity of the Agency's Drugs Manufacturing Unit (DMU).

- The DMCSA is accountable to the State Ministry of Health (SMoH) through the Board/State Sustainable Health Commodities Supply System Committee (SSHCSSC). The SMoH provides the overall policy framework for drug distribution in the state while the DMCSA executes the policy.

D. LGA DRF Management Team.

The LGA SHCSSC monitors and supervises the Supply Chain activities at Primary Health care facilities under their LGA. Membership in the LGA committee cuts across different supply chain and community representative programs. The LGA PHC Coordinator serves as the chairman of the LGA committee.

E. Facility Health Committee

The FHC is a committee formed in the community to support the PHC facilities in the smooth running of DRF operations. The FHC has a minimum of 12 and a maximum of 15 members, which include:

- *Officer in Charge (OIC) of the Health Facility (Secretary to the committee)*
- *OIC Drugs (Treasurer to the committee)*
- *One Representative of the Youths in the Community*
- *The Chief Imam nearest to the Facility*
- *One respected female community member*
- *One respected male community leader*
- *Representative of CBOs with an active interest in Health*
- *Representative of a less privileged and vulnerable group*
- *Representative of the alternative medical practitioners (Volunteer Health Workers –VHWs, Traditional Birth Attendants –TBAs and traditional healers)*
- *The most senior Headmaster of a school located in the community*
- *Representative of occupational groups*
- *Representative of a non-indigenous group who resides within the catchment area.*
- *Representative of NURTW.*
- *Representative of the business community or philanthropist.*
- *A respected retired civil servant who resides in the community.*

The committee closely supervises DRF activities, liaising with the Primary Health Care Center (PHC) to ensure appropriate staffing. It also supports the Officer in Charge (OIC) in overseeing facility operations and convening **monthly meetings** to review DRF activities.

The goal is to ensure that the DRF remains financially viable by safeguarding cash from sales and maintaining facility security through monthly stock-taking exercises. Necessary endorsements are made for loss or expiry registers.

The committee approves fund requisitions/releases and ensures the health facility maintains a functional bank account. Committee members are kept informed about the DRF's financial status and expenditures.

The committee advocates for policymakers and mobilizes the community for projects enhancing health outcomes.

F. Health Facility DRF Management Team.

The team oversees the day-to-day running of their respective Health Facilities. The Management of the supply chain at a primary healthcare facility comprises the following members;

- *Health Facility OIC*
- *Pharmacy Technician*
- *Medical Laboratory Technician*
- *Dental Technician*
- *Health Attendants*
- *Watchmen*

The governance framework provides an apparent oversight of the supply chain system in Kano State through cascaded supervision layers, as shown below:

Level of Supervision	**Organization/Person Responsible**
Level 1	OIC oversees subordinates at the PHC facility
Level 2	FHC then supports the OIC to supervise the activities at the PHC facility
Level 3	LGA PHC Department supervises all facilities within the LGA
Level 4	Zonal PHCMB supervises all LGAs within the zone
Level 5	The zonal SHCSS Committee supervises all facilities within the DMCSA Zone
Level 6	PHCMB supervises all zones
Level 7	SMoH, through the State SHCSS Committee, supervises the entire state

2.1.2.3 Institutional Arrangements: Organogram & Organizational Chart of MDAs related to SCM Frames

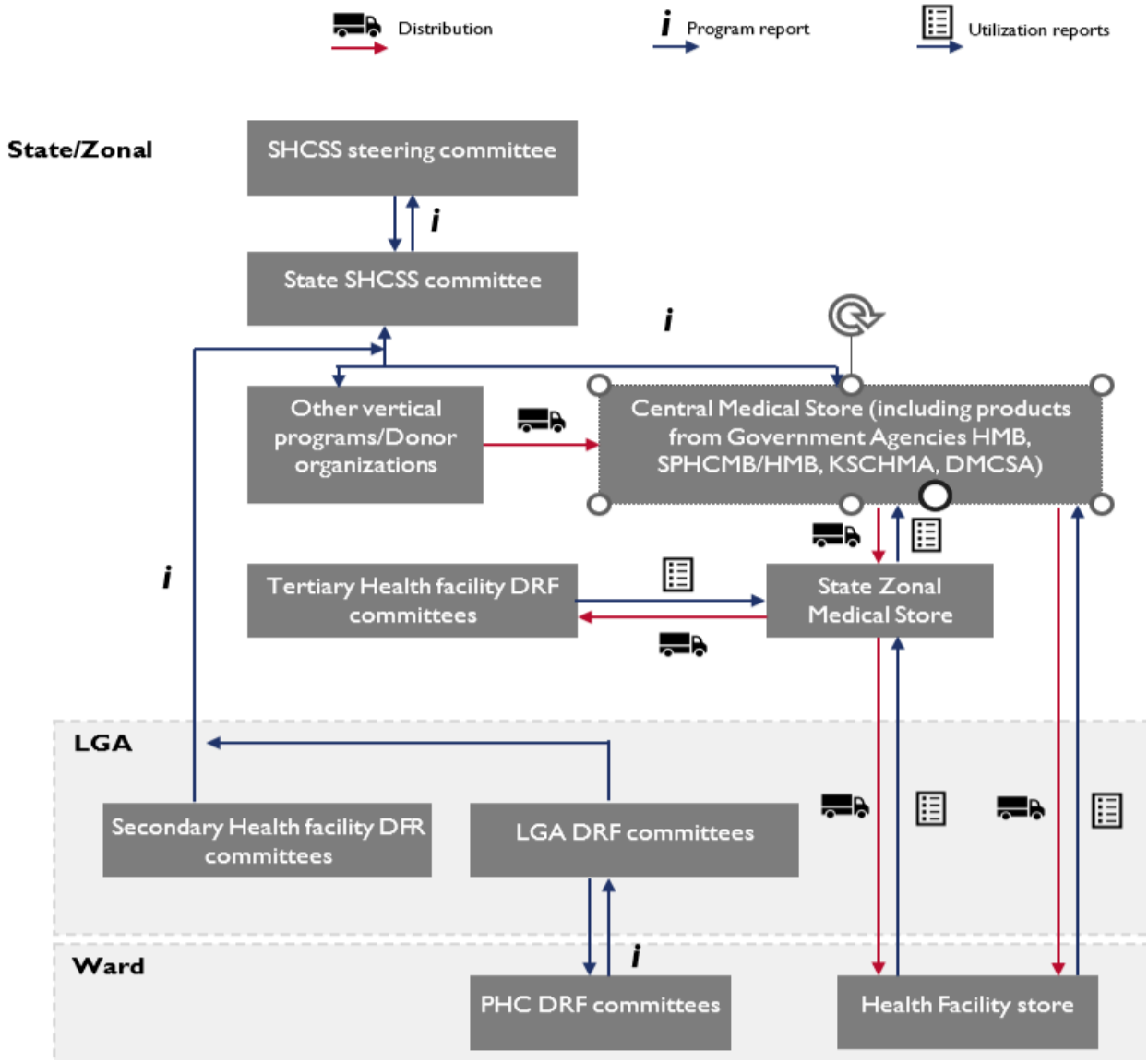
The main stakeholders in assessing supply chain management frames in the state are (1) Kano DMCSA and (2) SPHCMB, including other governance structures. The diagnostic review focused on DMCSA's institutional arrangement to understand data flows and performance management reporting from the perspective of an organization tasked with supply chain management.

The institutional arrangement of the SCM frame provides a clear operational responsibility matrix for MDAs involved in SCM operations.

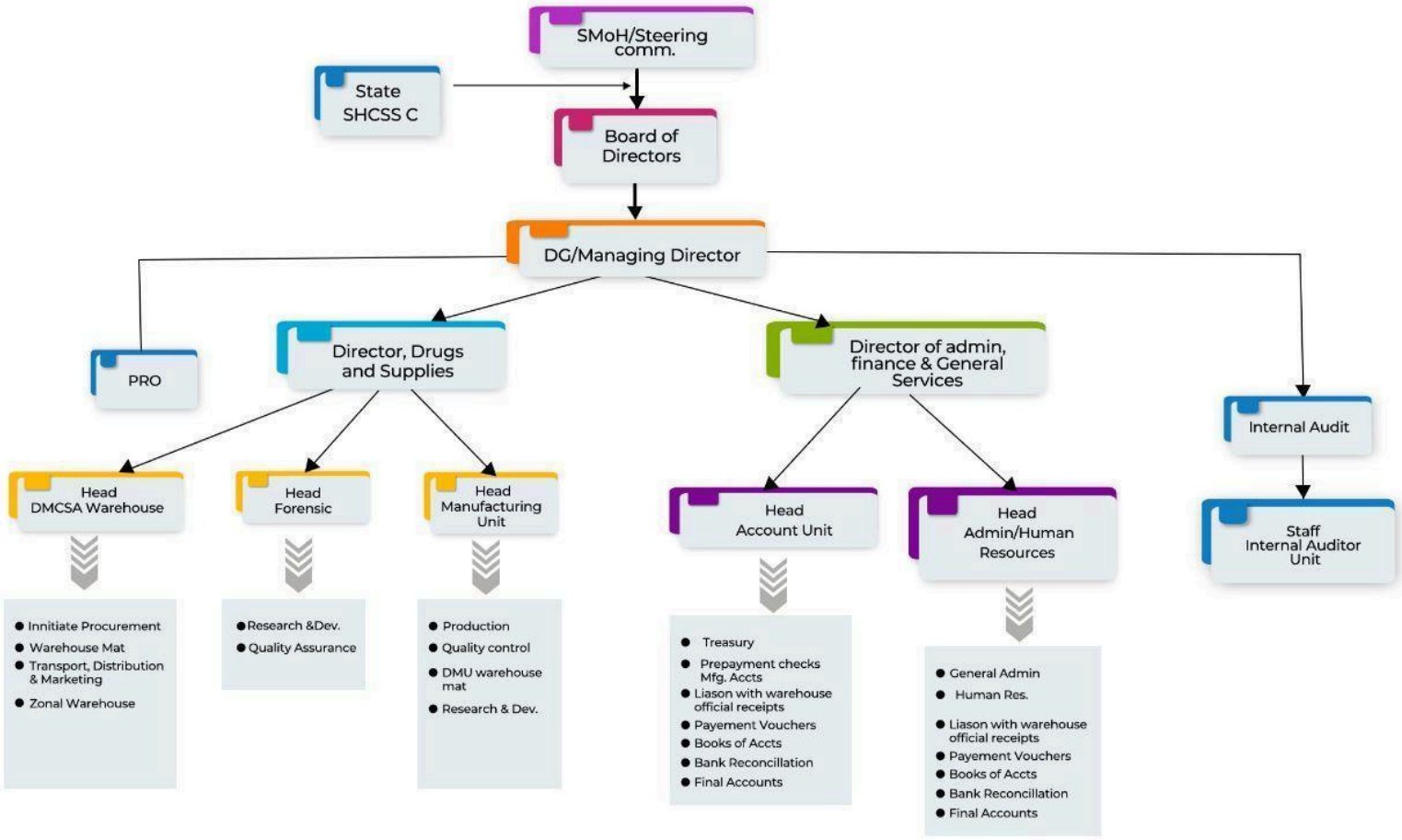
- **DMCSA** is responsible for selecting, quantifying, sourcing, warehousing, and distributing all health commodities in the State.
- **Through all the SHFs, HMB** is responsible for making health commodities accessible to clients seeking secondary health services.
- **SPHCMB**, through all the PHCs, is responsible for making health commodities accessible to clients seeking primary health services.
- **KSACA**, through both SHFs and PHCs, is responsible for making HIV/AIDs commodities accessible to the clients seeking services.

The organogram below provides a schematic representation of the Institutional arrangement of DMCSA, the Department of Essential Medicines and Logistics at the SPHCMB (responsible for SCM), and Supply Chain Governance Structures for a sustainable supply chain ecosystem as shown below:

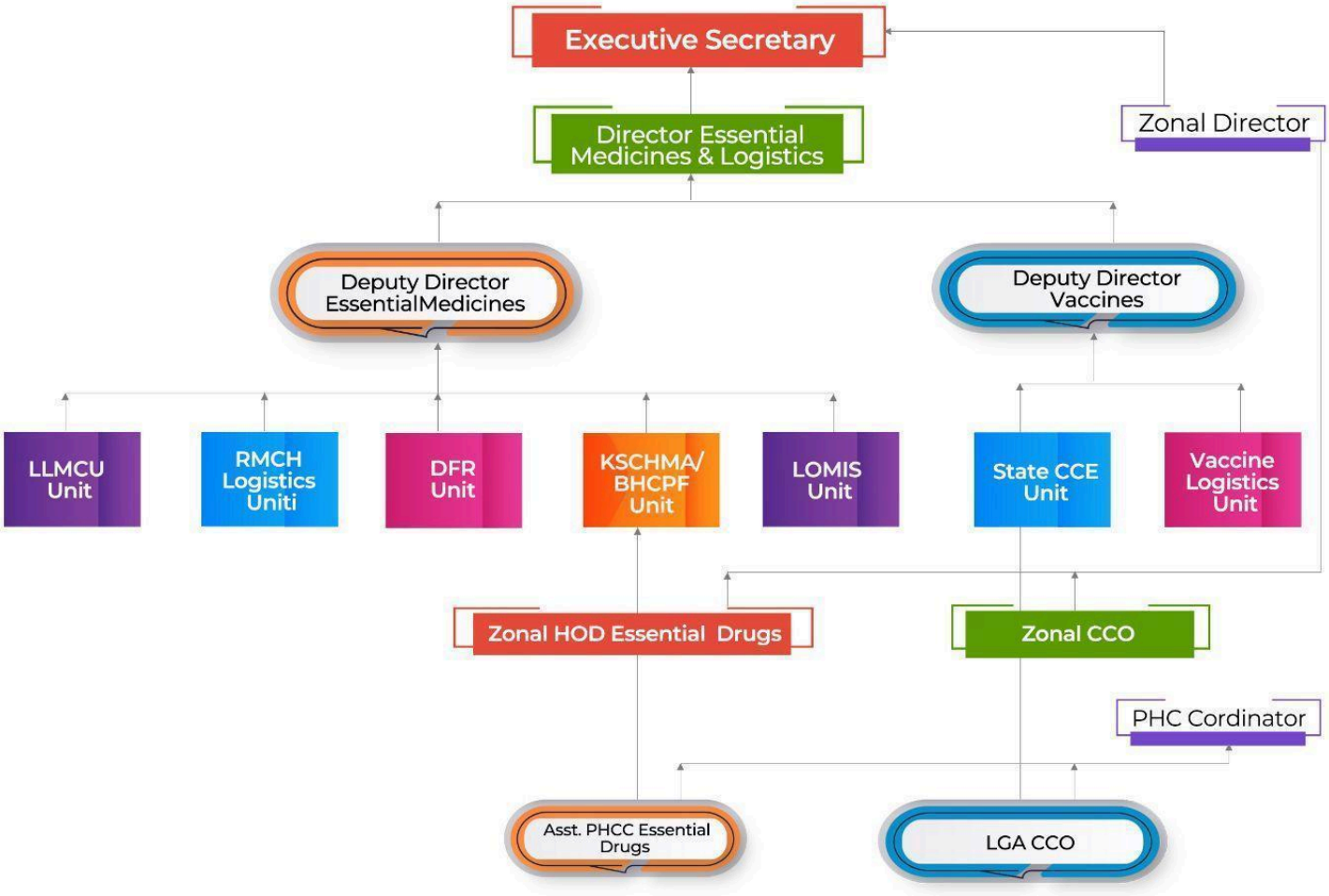
2.1.2.3.1 SCM Organogram and Logistics Distribution Structure



2.1.2.3.2 DMCSA Organizational Chart & Organogram


SMoH/Steering comm.
State SHCSS C
Board of Directors
DG/Managing Director
PRO
Director, Drugs and Supplies
Director of admin, finance & General Services
Internal Audit
Head DMCSA Warehouse
Head Forensic
Head Manufacturing Unit
Head Account Unit
Head Admin/Human Resources
Staff Internal Auditor Unit
Innitiate Procurement
Warehouse Mat
Transport, Distribution & Marketing
Zonal Warehouse
Research &Dev.
Quality Assurance
Production
Quality control
DMU warehouse mat
Research & Dev.
Treasury
Prepayment checks Mfg. Accts
Liason with warehouse official receipts
Payement Vouchers
Books of Accts
Bank Reconcillation
Final Accounts
General Admin
Human Res.
Liason with warehouse official receipts
Payement Vouchers
Books of Accts
Bank Reconcillation
Final Accounts

2.1.2.3.3 Organizational Chart & Organogram for the Department of Essential Medicines and Logistics of the SPHCMB



2.1.3 Assessing the Component of the Supply Chain Management Frames through FGD/KII

Assessing the components of supply chain management frames through the FGD/KII provided invaluable insights into the efficiency and effectiveness of operational data in driving performance management perspective and generating line of sight across SCM indicators.

A list of service indicators and markers was identified through this process to understand tools and platforms used to drive insight generation across the supply chain management domain. The components are provided below:

2.1.3.1 Assessing Supply Chain Operations

Concerning supply chain operations, Kano operates a pull system with incomplete integration for many commodities (Essential Medicines, Malaria, RMNCH, NTD, TB/Leprosy & PMTCT), as integration happens only at the warehousing level.

Furthermore, while there are no integrations between essential medicines and vaccines, integration exists between essential medicines and public health programs at warehousing and inventory management levels for MNCH and Malaria commodities centrally at the DMCSA.

Regarding forecasting and quantification, national tools are used for immunization (Excel Forecasting Tool) and PH programs (Unknown to State Supply System). In contrast, state tools are used for EM programs through mSupply. However, forecasting and quantification do not inform resource allocation for the AOP.

2.1.3.1.1 Measurement Markers for Assessing Supply Chain Operations

#	Measurement Markers	Implications	Status
1	A sustainable warehousing and inventory management framework through a centralized DMA provides a pull or push system to track drugs and commodities across programs. Data on warehousing and distribution to zonal, LGA, and facility lenses can be pipelined.	Integration happens at only warehouse level. The implementation of a centralized DMA system for procurement, warehousing, inventory management, will improve the visibility, efficiency, and data-driven insights into drug and commodity supply chains.	**Partial**
2	Opportunities for pipelining warehousing, inventory management, and requisition datasets exist through ***mSupply, Excel quantification tools***, and other semi-automated structures for any of the programs (EM, PH, Vaccines/Immunization)	While the opportunities exist, it's important to acknowledge that there might be challenges in fully realizing the potential of data pipelining. These could include technical limitations, data compatibility issues, or the need for additional resources to implement and maintain the integrated system.	**Yes**
3	At the last mile, digitization exists using ***LOMIS or OpenLMIS*** to track availability and stock utilization data to the DMCSA or State. A well-structured monthly report on consumption levels also exists.	While LOMIS has the potential to track stock levels at health facilities, it's not fully operational yet. Currently, facilities still rely on manual requisitions, which cause delays in getting supplies. This manual process also means different programs use different tools and timelines for ordering, leading to inefficiency and potential duplication of effort.	**Partial**

2.1.3.2 Assessing Vaccine Management & CCEs

Vaccine management is process-driven and automated across critical points of data transition across the state. The process is driven by national perspectives, starting with a paper-based process through vaccine ledgers, transitioning to OpenLMIS to track availability and stock utilization, and e-Ledger, a digitized version of a paper-based vaccine ledger on Google Sheets.

An example of this well-defined process for vaccine management reporting is shown below:

- HFs report vaccine usage on the vaccine ledger and vaccine utilization forms
- Aggregation happens every month through the ***e-Ledger (google sheet)*** at the LGA level
- Further aggregation through e-Ledger at the Zonal level
- Reporting happens at the state level through OpenLMIS

Regarding CCEs, the state keeps the status of their availability and functionality bi-weekly through the Cold Chain Officers at the State, Zonal, and LGA levels. At the facility level, the RI service Provider (RISP/RI Focal Person) provides the status and functionality of the CCEs daily. The updates on functionality status are compiled every month **using Google Sheets**.

Beyond functionality and availability status, the state also tracks planned preventive maintenance (PPM) and the status of floating assembly through a quarterly ***schedule of Walk-in Cold Room (WICR) and CCE maintenance logbook*** during bi-annual visits. The logs provide necessary insights to understand reporting from floating assembly due to PPMs and inform plans for procurement of CCEs.

Regarding tracking LMD, the state uses a DVD KPI and store-issue vouchers as proof of delivery to track deliveries.

2.1.3.2.1 Measurement Markers for Assessing Vaccine Management and CCEs

#	Measurement Markers	Implications	Status
1	Opportunity for pipelining data workflows on vaccine management exist through (semi) automated systems for tracking vaccine utilization rates, such as the OpenLMIS and e-Ledger, to understand stock counts and utilization	OpenLMIS is used at the National level for tracking vaccines only. Opportunities exist for data triangulation.	**Yes**
2	The status of availability and functionality of CCEs can be tracked through monthly summary sheets (Google sheet). Other components of the CCEs, such as floating assembly, WICR, and maintenance log book, provide a line of sight on PPM, which can provide insights into the procurement of CCEs.	Using Google Sheets for CCE tracking can be a practical and effective solution, especially for smaller-scale operations or in resource-limited settings. However, it's important to be aware of its limitations and to implement strategies to address potential challenges, such as regular data validation, offline backup options, and appropriate data security measures.	**Yes**
3	LMDs and DVD KPIs are tracked (semi) automatically through the effective line of sight between warehousing, inventory management, and store-issued vouchers at the facility level.	DVD KPIs have the potential to significantly improve vaccine supply chain management. However, data collected at facilities are in paper which requires digitization at LGA levels.	**Partial**

2.1.3.3 Assessing Dry Store & Essential Medicines

The DMCSA manages the DRF, Free MNCH, BHCPF, and KSCHMA programs related to their dry store and essential medicine implementation. There are 708 SKUs for essential medicines managed **through the mSupply warehouse management and inventory software** at the central and zonal stores.

At the primary health facility level, a paper-based system is used through **Inventory Control Cards (ICC) and Store Record Registers (SRR)**, while at the secondary health facility level, paper-based and semi-automated processes (Excel) are integrated through **Point of Distribution (POD) reconciliation** for all programs and **LMD spot checks** for Malaria and HIV.

Regarding tracking deliveries for LMD Impact at both state and facility levels, the state uses a **Reception and Verification Certificate (state tool)** to determine delivery status at the facility level.

In contrast, at the facility level, both paper-based and automated systems are mainly used to manually track stock counts, consumption, loss, and expiry through **LMIS tools (ICC, Store ledger, Store Record Register, SRIV, Stock Valuation Statement, CRRIF Form, Loss and Expiry Register, Return and Transfer, Daily Consumption Register, RIRF, PPR).** mSupply is also currently used at the facility level for line of sight of deliveries from the state level.

2.1.3.2.1 Measurement Markers for Dry Store & Essential Medicines

#	Measurement Markers	Implications	Status
1	There is an opportunity to pipeline data workflows on warehouse and inventory management through mSupply, which can provide a line of sight on warehousing and distribution from the central store to zonal stores to LGA and facility levels.	mSupply offers a centralized platform to track inventory levels, movement, and transactions across all levels of the supply chain. This real-time visibility enables proactive decision-making, reduces the risk of stockouts, and minimizes waste. However, there is lack of full utilization of the mSupply software due to lack of capacity and limited license for access and visibility.	**Yes**
2	Delivery status can be verified through snapshot reconciliation of stock counts between stores and	Receipt certification and LMIS reconciliation provide a clear audit trail, ensuring accountability for	**Yes**

	facility level through receipt certification and LMIS tool reconciliation to determine LMD for programs.	the delivery of goods and reducing the risk of losses due to theft or fraud. Reconciliation of stock counts in real time allows for timely identification of delivery delays or failures, enabling prompt intervention to ensure program objectives are met.	
3	Batch and single tracking of consumption patterns, expiry, loss, return, and transfers of stocks can be generated from the LMIS Tools and mSupply.	The data generated by batch and single tracking can be analyzed to identify consumption patterns, forecast demand, and optimize distribution strategies.	**Partial**

2.1.3.4 Assessing Requisition and Delivery

Currently, EM requisitions are not tracked but manually generated through procurement registers on a first-come, first-served basis. PH programs are tracked electronically through NHLMIS and manually by CRRF/BFSR.

Regarding the delivery workflow for EM, facilities pick up their suppliers (1PL), and sometimes, the DMCSA delivers (2PL). For PH programs(except RH), the state uses third-party logistics (3PL).

The State uses both 1PL and 2PL delivery methods for essential medicines, i.e., Facilities delivers, and sometimes DMCSA delivers to the facilities. For PH programs, the state uses third-party logistics (3PL) except for RH programs.

The average lead time for supplies from DMCSA is 72 hours, while tender procurement takes up to 2 weeks. Some of the challenges with lead time delays driving many facility requests at the end of every month are due to non-compliance with the DRF operational guideline and manual transmission of the requisition to DMCSA.

Regarding LMD, the state manually tracks requisitions on Malaria, HIV, RH, TB/Leprosy, NTDs, and Vaccines quarterly to ensure complete reconciliation between requisitions and actual facility deliveries. Currently, planning for forecasting and insights on requisition and deliveries still need to be implemented or tracked.

#	Measurement Markers	Implication	Status
1	Data workflow for requisition and deliveries can be pipelined across EM and PH programs to generate insights.	Integrated data workflows can optimize the supply chain for essential medicines and public program commodities , ensuring that stocks are replenished in a timely manner, reducing the risk of shortages, and minimizing wastage.	**Partial**

2.1.3.5 Assessing Last Mile Consumption and Stockouts

Currently, last-mile consumptions are recorded daily at the facility level. Consumptions for vaccines are recorded through the **Child Immunization Registers** and sent to the LGA monthly. These are uploaded to the **DHIS 2 and DVD KPIs platforms**.

EM consumption is recorded daily on the **Pharmacy and Account Register** and **Inventory Control Card** for the store at the facilities and is compiled and sent to the LGA monthly. EM is tracked at DMCSA through the **mSupply** software and **Facility requisition forms.**

PH Programs are tracked through the **Daily Consumption Register** and compiled at the LGA level bi-monthly through the **NHLMIS**. Vaccines and PH Programs are tracked using National tools while the state develops EM consumption tracking tools.

The current Stock outs rate at DMCSA and facilities for EM is about 20%, for Public Programs (RH is about 50%, Malaria is about 15%, Vaccines are less than 1%, HIV is about 5%, while TB/Leprosy is less than 5%). Therefore, mechanisms exist to track stockout rates, although manually.

Regarding reducing stockouts, items are listed from the facilities' requisition for emergency procurement at DMCSA, while items identified at facilities are sent for emergency procurement from the DMCSA.

Expiry and Wastages are tracked at DMCSA electronically through **mSupply** and manually by **Loss and Expiry Register**. At the facility level, expiries are tracked manually only through Loss and Expiry Registers.

The number of expired items is adjusted during forecasting and quantification. Facilities return all expired items to DMCSA, which gathers and documents them. DMCSA informs and awaits the state task committee's approval to set a date for proper waste disposal.

The State has a Sustainable Health Commodity Supply System Operational Guideline with an SOP for Waste Management.

#	Measurement Markers	Implications	Status
1	Data workflow for Last-mile Consumption and Stockouts can be pipelined across Vaccines, EM, and PH programs to generate insights	Integrating data on consumption and stockouts across different programs allows for better forecasting of demand, optimized stock levels, and reduced wastage due to expiry or overstocking.	**Partial**
2	Opportunities for pipelining consumption and stockouts exist through ***mSupply, Excel quantification tools***, and other semi-automated structures for any of the programs (EM, PH, Vaccines/Immunization)	Opportunities exist for developing or utilizing existing APIs (Application Programming Interfaces) to connect mSupply, Excel/Google sheets, and other systems to enable automated data exchange.	**Partial**

3	Data Workflow for wastage and expiry exists at the warehouse level (DMCSA) to the Zonal warehouse.	mSupply software can be utilized to provide a clear line of sight on wastage and expires from the warehouse to zonal stores and data generated can be pipelined and analyzed centrally for visibility at facility levels.	**Partial**

2.2 Operational Data & Archetypes

2.2.1 Understanding Operational Data used to generate Performance Management insights for SR at the State (macro) level

#	Components	Operational Data Archetypes	Frames	Type/Status	Description	Improvements?
1	**Supply Chain Operations**	mSupply	State	**Automated** Active	An electronic inventory is used at the DMCSA and its zonal warehouses to issue drugs to facilities.	Opportunity to integrate mSupply into an API to have a single line of sight around the warehouse and inventory management
		Immunization forecasting & Quantification tool	National	**Excel Sheet** Active	Excel sheet templates were developed at the national level for the immunization forecast tool.	There is an opportunity to pipeline and Integrate all other PH programs to transition from spreadsheets to databases for triangulation of multiple data sources.
2	**Vaccine Management and CCEs**	Vaccines Ledger	National	**Paper Forms** Active	Use of paper form at facility level and digitized at LGA level to the DHIS2 to report	N/A

					monthly summary forms and other service delivery indices	
		e-ledger	State	**Excel Sheets (Google Drive)** Active	Managed by the state to digitize Vaccine ledges sent from facilities	Opportunities exist for transitioning from spreadsheets to databases to triangulate multiple data sources.
		Open LMIS Software	National tool.	**Automated** Active	An open-source, cloud-based electronic logistics management information system (LMIS) purpose-built to manage vaccines and other health commodity supply chains.	N/A
		Google Sheets	State	**Automated** Active	State tool for updating information on CCEs	Opportunities exist for transitioning from spreadsheets to databases to triangulate multiple data sources.
		DVD KPI (PoD)	State	**Paper form** Active	Direct Vaccine Delivery- Key Performance Indicators	N/A

3	**Dry Store and Essential drugs**	mSupply	State	**Automated** Active	mSupply is used for Invoicing, stock records, expiries, Stock issuing, purchase order, procurement, and Analysis.	N/A
		LOMIS Pharmaceuticals	State	**Automated** Active	An electronic real data platform used across 300 PHCs to track availability and stock utilization data to the state., focusing on tracer drugs.	Coverage for all apex PHCs (484) in the state and around LOMIS at the facility level.
		Inventory Control Card	State	**Paper form** Active	This is used at the pharmacy/store facility to manage each dispensed product's inventory.	The transition from paper form to digital Inventory Management System at the facility level. Leverage on LOMIS pharmaceuticals gadgets used in the facility
		Store Ledger/ Store Record Register	State	**Paper form** Active	This is used at the facility to record all the commodities dispensed for use	The transition from paper form to digital Inventory Management System at the facility level. Leverage on LOMIS pharmaceuticals

						gadgets used in the facility
		Daily consumption Register	National	**Paper form** Active	Used at the facility level for tracking daily consumption of PH Programs	N/A
		RIRF-	National	**Paper form** Active	Used at a facility for FP commodities consumption records. Updated bi-monthly and sent to LGAs for uploads on NHLMIS.	N/A
		SRIV	State	**Paper form** Active	Store Issue and Receipt Voucher- Used for managing receipts of commodities. from service units and requisitions.	The transition from paper form to digital Inventory Management System at the facility level. Leverage on LOMIS pharmaceuticals gadgets used in the facility
		Stock valuation form	State	**Paper form** Active	Facilities use SVF for stock taking at the end of the month, including monetary values of the remaining products.	The transition from paper form to digital inventory management at the facility level.
		CRRF	National	**Paper form** Active	Combine requisition and report used at the facility	Integration of EMs and PH Programs

					level to utilize PH programs, especially MNCH and Malaria.	at the facility level for easy reporting across the SC value chain
		Loss and expiry register	State	**Paper form** Active	Forms used at the facility for tracking loss, damaged, and expired products	Transition from paper form to digital inventory management at the facility level.
		Return and transfer form	State	**Paper form** Active	Used for exchange of commodities from Facility to Facility or Facility to DMCSA.	The transition from paper form to digital inventory management at the facility level.
		PPR	State	**Paper form** Active	For PH Programs - Used for accountability Use during data triangulation to compare the number of patients and commodities distributed.	N/A
4	**Requisition and Delivery**	NHLMIS	National	**Automated** Active	Data repository for public health programs like TB, HIV/AIDS, Malaria, Reproductive health, Maternal, Neonatal and Child Health.	N/A
		CRRF	State	**Paper form** Active	Combine requisition and report used at facility level for utilization of PH programs,	Integration of EMs and PH Programs at facility level for

					especially MNCH and Malaria.	easy reporting across the SC value chain
		BFSR	State	**Paper form** Active	Bi-Monthly Facility Stock Report	Transition from paper form to digital inventory management at facility level.
		Facility Requisition Form	State	**Paper form** Active	Used at the facility for sending requisitions to the state.	Automated system for requisition from facility to State (with approvals from LGA and Zone digitally)
		NHLMIS	National	**Automated** Active	Data repository for public health programs, used tracking requisition pattern across facilities.	N/A
5	**Last mile Consumption and Stockouts**	DHIS2	National	**Automated** Active	Use of DHIS2 to track last mile consumptions for vaccines	Triangulation of Data from DHIS and other national & state tools for comprehensive last mile consumption.

		DVD KPI	State	**Automated** Active	Direct Vaccine Delivery- Key performance indicators through Proof of Delivery (PoD)	Digitization of the DVD KPI into a dashboard for tracking trends and visibility.
		Daily Consumption Register	National	**Paper form** Active	Used at the facility level for tracking daily consumption of PH Programs	N/A
		Pharmacy & Accounts Register.	State	**Paper form** Active	Used at the facility level for tracking last mile consumption.	The transition from paper form to digital inventory management at the facility level.
		Inventory Control Card	State	**Paper form** Active	This is used at the pharmacy/store facility to manage each dispensed product's inventory and track stockouts.	The transition from paper form to digital inventory management at the facility level.
		mSupply	State	**Automated** Active	mSupply is used for Invoices, stock records, expirations, stock issuing, purchase orders, procurement, and analysis.	Triangulation of data from mSupply and other National and State tools for an overall view of the state supply chain data flow.

		Facility Requisition form	State	**Paper form** Active	Used at the facility for sending requisitions to the state and used at the state level for tracking facility requisitions	The transition from paper form to digital inventory management at the facility level.
		NHLMIS	National	**Automated** Active	A data repository for public health programs is used to track requisition patterns across facilities.	Triangulation of NHLMIS data and other state level operational data sources for more visibility

2.3 Understanding the Process Review Flow of Operational Data.

This section seeks to provide details on how certain operational data archetypes flow with respect to its different components within the Supply Chain domain. It focuses on who collects the data or where the data is stored, how the data can be used to generate insight, the business rules which spells out how the data is developed, produced and used and finally, a link to the detailed business rule for more in depth insight is provided.

#	Components	Operational Data Archetypes	Who Collects Data?	Usecase/Insight used from operational data	Business Rule	Detailed Link to Business Rule
1	**Supply Chain Operations**	mSupply	**- mSupply manager at DMCSA** **- Dedicated individual at the warehouse (Inventory control managers)**	inventory management, tracking of inventory generation of invoice and reports, Stock valuation.	1. The mSupply manager (HoD drugs) **periodically** checks the commodities below minimum stock or about to reach minimum stock level 2. Generate list from the **mSupply** and handover to the Director Drugs & supply 3. Director Drugs notifies DG and calls for procurement meeting 4. Director Drugs & Supply use the list to raise a local purchase order on **Paper** after identifying the supplier 5. DG reviews, approves and sign and afterwards return to Director drugs for subsequent release to the supplier 6. Director Drugs & Supply issues local Purchase Order to supplier	Upper Bound  Lower bound 

					7. The approved supplier supply commodity to the warehouse 8. Store officer collect and check the Local Purchase order, 9. Store officer Raise a store receive voucher, collects the original copy of the LPO and invoice 10. The store receive voucher, original copy of the LPO and invoice is sent to the HoD Drugs 11. HOD Drugs updates the mSupply and raised a clearance form to say everything is intact according to LPO, store receive voucher, and invoice from the supplier	
		Immunization forecasting & Quantification tool	**-National Logistics Working Group (NPHCDA)** **-National Population Commission**	National tool used to quantify vaccine need	1. The state does a monthly vaccine report 2. DHIS2 Utilization/uptake 3. Periodic Smart survey reports on coverage. 4. All Reports are sent to the Federal/National 5. National Survey on Coverage from National Bureau of Statistics (NBS) 6. All the reports are used for the forecast using the forecasting and **quantification tool**	

		DRF Monitoring Checklist	State SHCSS C	-Tracks General DRF performance at facility Ie Availability & Utilization of LMIS tools - Drug Management System (Procurement, Inventory, Losses & experies) - Financial Management System (Sales, Bank lodgement, uses of fund)	**1. <u>Monthly</u>**, In- State team members/state committee track availability and utilization of LMIS tools at facility **<u>(paper)</u>** **2.** Data Entry is done to convert paper checklist to excel **3.** Reports are compiled and analyzed data sent to the state **4.** Feedback is sent to the facility through the LGA EDO	
		Facility Monthly DRF Activities Reporting Template	-LGA - Zone - SPHCMB	General DRF performance in respect of Drugs & Financial Management System	1.Monthly- Facility generate monthly summary of DRF activities in a paper template and send to the LGA EDO. 2. LGA EDO collates all reports from the facilities and enters into an excel sheet and forward to the zonal EDO. 3. Zonal EDO collates and forwards to the SHCSS FP through the Departmental email. 4. Facility receives feedback through the ZEDO/LGA EDO.	
		Local Purchasing Order	Director Drugs & Supply DMCSA	-List of items, quantity and their total value to be procured	- HoD Drugs notices the emergency stockout of the item from the mSupply and then writes to the DD&S with the qty required and the list of recommended suppliers. - The DD&S writes to the DG/MD of the need to procure the item and DG gives approval.	

					- DD&S invites some companies to provide their quotations. - The most responsive company is selected and awarded the LPO.	
		Temperature Monitoring Chart	LGA CCO	- Daily Monitoring of Vaccine Potency (It's done AM & PM daily)	**1.** All facilities take the temperature of the CEE twice a day (morning & Evening) to maintain the potency of vacancies. Twice Daily **(paper Based)** **2.** At the end of every month, the facility 1C reports the fill Temperature Monitoring Sheet to LGA CCO for monitoring. **Paper Based.** **3.** LGA CCO harmonizes the collected reports from all HF in to the TMD (Excel reporting Template) and Send to Zone (**Excel Sheet)** **4.** Zonal CCO uploads the reports collected from LGAs under their zone on TMC **(Google Sheet)** **5.** State Views the TMD Google Sheet for actions.	
2	**Vaccine Management and CCEs**	Vaccines Ledger and e-ledger	- **State CCO** - **Zonal CCO** - **LGA CCO** - **Facility OIC**	*Manual*Tracks the availability of vaccine at a particular period, also tracks the movement of vaccine in terms of quantity	1. The Facility Keeps records of vaccines and its status 2. Update by WTO, Send weekly stock balance through SMS to LGA 3. LGA CCO harmonize the	

				received and issued	stock from Facility (sent on SMS and put on Open LMS) LGA LIO/M&E enter into the DHIS 2 4. LGA Submits the entry to the state through Open LMIS 5. On a monthly basis the facility provides a summary report on **paper** using the monthly vaccine monthly summary form 6. The summary form is sent to LGA monthly 7. The LGA LIO/M&E enters it into DHIS2 which is a Digitized process	
		Open LMIS Software	LG CCO	A National electronic platform for tracking vaccine movement. State, Zone and LGA	1. Facility RI Service Provider send stock balance to the WTO. 2. WTO harmonize the stock balance and send to LGA through WhatsApp/SMS 3. The LGA COO summarize the ward stock balance and LGA stock balance and upload into Open LMIS 4. The ZCCO review the uploaded report from LGAs and updates the state stock satellite balance 5. The state CCO review uploads report from LGAs, State satellite stoves and also upload the state stock balance.	

		Google Sheets (Cold chain equipment)	Zonal CCO	Locally used to manage health commodity *Not often used* it is either used at the zonal or state level	1. The facility update status of CCEs functionality **monthly** using **paper** 2. The updated status is shared with the State 3. The Zonal CCOS updates the CCE Status is entered to a **google / excel sheet** 4. The state has access/visibility to the CCE status Update	
		DVD KPI (PoD)	Zonal CCO	It is a delivery tracking tool *Currently in use*	1. ZCCO delivers vaccines to apex facilities/LGA Cold chain stores , checks the quantification of the remaining vaccines and their status in the CCE. 2. ZCCOS assesses the functionality of the CCEs and top up the HF to maximum levels. Capture immunized and empty vials records and retrieve empty vials 3. In the case of excess vaccines in the facility the Zonal CCO retrieves the excess and leave the facility with the maximum Stock required 4. The Zonal CCO comes back to the Zone and **electronically** fills the DVD KPI 5. State CCOs harmonizes all reports from Zonal CCOs on a **monthly** basis 6. The state has visibility on	

					the quantity of vaccines remaining in the facility and quantity of vaccines as top-up	
3	**Dry Store and Essential drugs**	LOMIS Pharmaceuticals	-Pharmacy Incharge??	- Tracks daily inventory of tracer drugs at the facility (Receiving, Issue, Stock on Hand)??	1. Pharmacy Incharge enters total items received and issued to patients on a daily basis?? 2.LGA EDO monitors all transactions of the facilities under the LGA on their dashboard 3. Zonal EDO has access to facilities under their respective zones. 4.DPS & SHCSS FP monitors all DRF facilities operating LOMIS through their dashboard at the state level.	Currently not functional
		Store Ledger/ Store Record Register	Pharmacist or Pharmacy Technicians Pharmacy in-charge of the store at the Facility	For tracking availability and movement of drugs at the facility level	1. Tracks receive and issue drug commodity at facility store 2. A realtime record is made to the Store register which is done on **paper** 3. On a daily basis, it is entered into the Inventory control card	
		Daily consumption Register	- Dispensing Officer In-Charge	Tracks utilization of commodities at the Facility Level.	1. Patients go to the facility and they get registered into the daily attendance. 2. They are entered into the Program/service register (Public health commodity for	DCR Family Planning 

					Family planning 3. The patient information is entered into the daily consumption register in real time 4. bi-monthly stock reporting and requisition using the RIRF 5. The facility does a monthly summary and submits to LGA MCH Coordinator 6. The LGA MCH Coordinator (Through LGA LMCU) uploads the data into a National digitized platform called the NHLMIS	DCR Malaria  DCR Vaccine  DCR HIV 
		RIRF-	- FP Service provider - LGA MCH - State RH Logistics Officer	For Family Planning Community-Tracks utilization of commodities at the Facility Level.	1. The summary of the utilized commodity is entered into the RIRF **bimonthly** 2. Form is submitted to the LGA MCH coordinator **bimonthly** to validate 3. The LGA MCH coordinator uploads into the NHLMIS through the LGA LMCU 4. The LGA MCH coordinator takes the hard copy of the RIRF and present it during the state review meeting which is done when the commodities are available	
		SRIV	- Pharmacy Incharge	Facility tool used for Stock requisition and issue.	1. Facility shortlists all the items requested from the DMCSA. Facility will move all	

					items (Donates Items), state the source of items, date and quality. 2. The Facility issue drugs and consumables to different service units in the facility using the register 3. It also issues the items to the dispensing unit and other relevant functions e.g Issue to loss and expire register and returns of commodities that are almost expiring to AMISCA e.t.c. 4. Other service unit uses the same register to request for commodities from the pharmacy store 5. Each service unit record each commodities into their own service unit register	
		Stock valuation form	- Pharmacist or Pharmacy Technicians, - Pharmacy in-charge of the store at the Facility	Used at the facility to quantify commodities at a particular period (Usually at the end of the month)	1. On a **monthly basis** or when the need arises, the facility counts each item in the store and the dispensary area 2. The facility summaries the total value of the items and update in the stock evaluation register 3. The total value of the items counted for the month is sent to the LGA through the essential drug officer (EDO) 4. The LGA EDO share the report with the Zone, through the Zonal EDO	

					5. The Zonal EDO shares the report with the state SPHCMB through the SHCSS focal person 6. The report is shared with the state SHCSS committee through the SPHCMB	
		CRRF	- Pharmacy in-charge of the store at the Facility	For Essential Medicines - Facility tracks utilization of commodities at the Facility Level.	1. When the Facility stock reaches the minimum stock level, the form is filled 2. The Form states the total stock received, utilized and the required quantity to replenish to the maximum before the new cycle 3. Periodically sends to the state through the LGA program officer for the replenishment of stock for the cycle 4. LGA program Officers Compiles requisition and sends it to the state.and update NHLMIS 5. LGA compiles reports and uploads to **NHLMIS** Platform 6. Facility reports on consumption and stock levels of public health drugs and commodities to the LGA **bi-monthly**	
		Loss and expiry register	- Pharmacy in-charge of the store at the Facility	Used for tracking loss/expired commodities- Used at all levels	1. Expired and damaged products are segregated from the life products and kept aside in a separate box, marked 'Damage/Expired'.	

					2. This register is filled with the name, quantity and value of products that are expired or damaged, stating the reason for the loss. 3. The Pharmacy in-charge, Officer In Charge and Facility Health Committee all must sign the register. 4. The ICC and the Store Record Register are then updated to remove the Expired/Damaged items. 5. List and Value of expired/ damaged products is then reported to the LGA EDO during the monthly reporting 6. The facility accounts for loss and expiry register which is recorded on **paper**. 7. The Incharge of drugs signs 8. Facility in charge verifies and Signs 9. Community Rep Validates, signs and testifies 10. **Monthly** Submission to LGA	
		Return and transfer form	- Pharmacy in-charge of the store at the Facility	Facilities use the form for exchange of commodities, either from facility to facility OR DMSCA - Visibility exists only from facility OR DMSCA	1. From the stock on hand on a periodic basis, the facility checks its record for commodities that have six(6) month expiry or more (DMCSA does not receive items with less than 6 months expiry.) or in excess. 2. The officer in charge of the	Facility to DMSCA  Facility to Facility

					store fills the form in duplicate after getting approval for the transfer/return 3. The return is issued to the drugs department for verification before approving for the replacement based on the items cost. 4. The respective store for the commodity will receive the form, the commodity and cross match the quantity in the form and the physical quantity. 5. The store officer checks what the facility needs for that particular item. 6. The store office values the items and gives the facility officer an exchange item of equal value. 7. The facility officer verifies the items and takes them to the facility and then documents appropriately.	
		PPR	Facility in-charge	For PH Programs - Used for accountability Use during data triangulation to compare the number of patients and commodities distributed.	1. The register is used to summarize the total patients vs the drugs issued to the clients per cycle from the Daily Worksheet at the facility 2. The report is submitted along with the CRRF directly to the state LMCU office **bi-monthly.** 3. The total is also used in the malaria program to itemize	

					the treatment regimen dispensed to patients. 4. The state LMCU upload the data to the NHLMIS platform	
		Fund Valuation Statement	-Pharmacy Incharge - Facility OIC	Tracks the financial status of the DRF on monthly basis and whenever there is transfer of staff (OIC or Pharmacy Incharge) before handover.	1. At the end of the month and when the need arises. OIC and 2IC prepare the fund valuation statement 2. Officer In Charge and second In Charge fill the form with appropriate data as per the three section 3. The In Charge and second In Charge Sign and send the completed form to essential drug officer	
4	**Requisition and Delivery**	NHLMIS	**- Facility Program Managers** **- LGA LMCU**	Software used for tracking PH programs commodities at the National. Managed by LGA LMCU and State LMCU	1. When Facility reaches minimum stock level of PH drugs and commodity 2. Facility **Periodically** sends requisition to LGA using the **CRRF** 3. LGA LMCU Officers combines requisition for the circle and sends to DMSCA and update LMIS 4. State LMCU receives requisition processes and processes it using **NHLMIS** 5. State aligns and leverages on other requisitions to make combined delivery to health Facility 6. Facility receives delivery with a delivery slip 7. Health Facility enters	for public health programs  for tracking requisition pattern across facilities. 

					delivery into inventory control card 8. Health facilities dispense and use commodities using store record registers.	
		CRRF	- FP Service Provider -LGA MCH coordinator - State FP Logistics Officer	-Tracks quantity of FP commodity received, utilized, stock on hand and quantity required for the next cycle.???	-Facility FP service providers fill the form bi-monthly and send it to the LGA MCH coordinator. - LGA MCH coordinator fills the form every 3-months and submits to the state FP LO. -State FP Logistics officer fills the form on quarterly basis and sends it to the national. ???	
		BFSR	**- Pharmacy in-charge of the store at the Facility**	For Malaria - (Facility tracks utilization of commodities at the Facility Level.)	1. Facility reports on consumption and stock levels of public health drugs and commodities to the LGA **bi-monthly** 2. LGA compiles reports and uploads to **NHLMIS** Platform	Nested Data Architype 
		Facility Requisition Form	- Pharmacy in-charge and - Other service providers at the facility	For all programs but mostly used for EMs at the Facility	1. Facility Submits requisition on a **monthly** basis using the facility requisition form on **paper.** 2. Inventory officers Collect the requisition form and enter into the mSupply software.	Nested Data Architype 

					3. Uploaded to mSupply	
5	**Last mile Consumption and Stockouts**	DHIS2	-LGA M&E -DPRS SMoH	-Service data is collated on monthly basis through the DHIS2	-On monthly basis health facility service data is uploaded by the LGA M&Es -Logistics data is uploaded from the NHLMIS bi-monthly at the state LMCU.	N/A
		Pharmacy & Accounts Register.	Pharmacy In-charge of the facility	Paper based register for tracking consumption and payment of DRF commodities at the facility on daily basis	1. Patients go to the facility and they get registered into the daily attendance. 2. Patient goes for a consultation where drugs are prescribed 3. Patient goes to the pharmacy for costing of the prescribed drugs 4. Patient goes to the cashier for payment where he/she collects original and duplicate receipt after payment 5. Patient goes to the pharmacy, present the original and duplicate receipt along with the prescription 6. The staff in attendance issues the prescribed drugs and enters all the patient details into the pharmacy and account register 7. At the close of day the pharmacy staff in attendance summaries all the details in the register for the day	

		Inventory Control Card	Pharmacy in charge of the facility store	For all programs - Used at the facility for receiving, issuing, tracking and adjustments	1. Received and issue of Drugs and medical commodity From DMCSA, donation or other souring 2. Real time Stock record updated for each item. 3. Inventory Control Card 4. Issue drugs/commodity to dispensing and other service unit 5. Update Store Record register	

2.4 Identifying Gaps & Opportunities for Improvements from the Desk Reviews, Landscape Assessment, and KIIs Validation Sessions

Having reviewed the operational data landscape across the SCM domain, it is clear that Kano State has a strong SCM system, especially the DRF component. Key strengths exist in operational data for (1) Vaccine Management & CCE Tracking, (2) Dry Store and Essential Drugs, and (3) Last-MIle Consumption and Stock-Out Tracking.

There is an opportunity for significant improvements in the operational data landscape on (1) Supply Chain Operations and (2) Requisition and Delivery.

A gap opportunity Matrix is further provided below, identifying areas of improvement and step-wise approach to improvements.

2.4.1 Gaps-Opportunity Matrix

#	Components	Gaps	Opportunities for Improvement
	Supply Chain Operations	SCMGP1: While Kano has the right digital platforms (mSupply, Immunization forecasting, and quantification tool). EMs and some PH like Family Planning, TBL and NTD have been integrated at the warehousing and inventory management level centrally at the DMCSA. Programs like Malaria, FP, TBL and NTD commodities warehouse their commodities at the DMCSA Madobi Zonal warehouse. However, the data is not entered into mSupply because commodities go directly to the health facility. mSupply is not used to its full capacity. Only one module has been deployed on the mSupply with limited license for use by senior policy makers. There is a skills gap around the effective use of the mSupply software.	**Explore Integrating all supply chain operations (EM and PH) from Warehousing to Distribution, Inventory Management, and LMD)**. This is in line with the National Health Supply Chain Transformation plan. Vertical silos across programs distort real visibility to forecasting and quantification of commodities due to different approaches to accessing commodities from DMCSA. There is a need for capacity building for mSupply operators and senior managers including exploring additional licenses for senior managers (DG & Director Drugs) to view reporting and analytics on the software. SPHCMB and HMB should also be provided with visibility on current stock levels at DMCSA, requisition levels and expiry dates for batches in the warehouse. Given licensing constraints for mSupply and sustainability of funding additional licenses, states can explore other warehouse management information systems that are open sourced and can be used for warehouse control and inventory management.

		SCMGP2: The immunization forecasting and quantification tool (which is excel based) is a national tool with minimal state input to the quantification. However, states can leverage on the quantification tool as an additional data source to provide an additional level of insights on commodity requirements, which can, in turn, drive resource allocation decisions during AOP.	The State can integrate results from the quantification tools **for more targeted forecasting and tracking forecasted estimates against actual vaccine utilization** based on a more accurate on-the-ground population denominator. In the long run, SPHCMB should build capability for developing local context driven quantification tools using the national tool as an exemplar and explore partnership with the Bureau of Statistics to develop forecasting and estimation models to reduce stock outs.
	Vaccine Management & CCEs	SCMGP3: e-Ledgers (Google Sheets) provides an integrated view of facility-level vaccine usage aggregated to the LGA and Zonal levels, with the OpenLMIS used for reporting. Using e-Ledgers is an innovative approach to storing vaccine utilization rates, but it is also susceptible to changes and overrides without audit trails. For both the paper based vaccine ledger and e-Ledgers there are weak validation processes at facility level before being sent to the LGAs and also weak validation processes from LGAs to zonal offices.	There is a **need to include data review and validation processes for vaccine usage using the facility management team at the facility level**. At the LGA to zonal level, the LGA LMCU (LGA CCO represented) should be included to further review and validate vaccine data before posting on the e-Ledgers. Zonal CCO should be responsible for harmonizing LGA data and uploading on E-ledger and OpenLMIS
		SCMGP4: There are several tools that provide a snapshot view of CCE inventory and functionality on monthly and quarterly. Tools	There is a need to **develop a CCE Inventory and ticketing system that provides a near real time view on status of CCEs and the functionality status**

		such as ISS, MSPMT etc provide a view on facility assessment. However, this does not provide a near real time view of CCE inventory on a rolling basis for proper planned preventive maintenance	for a near real time planned preventive maintenance of the CCEs and also to determine the nearest locations for the CCEs.
		SCMGP5: In terms of vaccine delivery, the DVD KPI which is used during the point of delivery is paper based and does not provide clear visibility on vaccine delivery to the last mile.	**A line of sight or visibility can be achieved by automating the tool using ODK or other custom apps to track and** provide visibility of vaccine delivery across all facilities, LGAs and zones.
	Dry Store & Essential drugs	SCMGP5: While warehousing, inventory, and logistics management have been entirely digitized using mSupply, DVD-KPI, and LOMIS, both DMCSA and facility-level consumption data is still in paper-based form through Daily Consumption Registers, Inventory Control Cards, SRIV, Pharmacy & Account Registers, etc. There is duplication of the daily consumption register across several programs such as Malaria. FP and HIV The LOMIS platform is currently inactive and not implemented in all the DRF facilities due to the lack of internet access and digital devices for data uploads. At the facility level, there is no segregation between various stock cards especially the ICC, Tally cards, Bin cards and stock cards.	**Consumption data can be transformed into digital forms, as seen in Kaduna State, where consumption registers, such as the Daily Consumption Registers, Pharmacy & Account Registers, etc., have been digitized using OneBox and RapidSMS through the SHCSS platform**. There is potential for exploring digitization for Consumption Registers to get a more accurate analysis of consumption patterns. Also there is a need to explore integration of consumption registers for some programs (Malaria, FP, and HIV). There is a need to explore reactivation of the LOMIS platform to enable visibility of EM Inventory (SoH, Consumption, Losses & Expiry etc) between Health facilities facilities, LGA, Zone and the State SPHCMB. If LOMIS is not sustainable, a home grown local solution should be developed to provide visibility on consumption levels at the facility.

			Segregate stock tools across various levels (PHCs, SHCs/TH, DMCSA warehouse)
	Requisition and Delivery	SCMGP6: EM requisitions are not tracked but manually generated through procurement registers on a first-come, first-served basis. Also, malaria, HIV, RH, TB/leprosy, NTDs, and vaccines are manually tracked quarterly to ensure complete reconciliation between requisitions and actual deliveries to facilities. Only PH programs are tracked electronically through NHLMIS and manually by CRRF/BFSR, leading to lead time delays driving a high number of facilities requested at the end of every month due to non-compliance with the DRF operational guidelines and manual transmission of the requisition to DMCSA.	**Requisitions can be integrated into a single tool to provide a common frame for accepting requisition at the facility level.** The visibility for requisition can be centrally warehoused and stored to provide a uniform line of sights on facility requests across several programs.. This will lead to improved average lead time between DMCSA and ensure consolidated ticketing of requests from facilities.
	Last mile Consumption and Stockouts	SCMGP7: At the facility level, no harmonized platform for reporting consumption is similar to the SHCSS portal in Kaduna. In contrast, vaccination and PH programs can be tracked on OpenLMIS, DHIS2, and NHLMIS. The EM consumption is recorded manually daily through the Pharmacy and Account Register and Inventory Control Card.	**Consumption data can be transformed into digital forms, as seen in Kaduna State, where consumption is like the Daily Consumption Registers. Pharmacy and Account Registers, etc., have been digitized into OneBox and RapidSMS through the SHCSS platform.** There is potential for exploring digitization for Consumption Registers to get a more accurate analysis of consumption patterns.

2.4.1 Process Improvement Plan

The process improvement plan provides a stepwise approach for improving operational data visibility to connect with the State and BMGF performance strategies. In this regard, we plan a phased improvement plan into the quick wins, medium-term, and long-term strategy to increase the visibility of reporting indicators across the input to outcome continuums as shown below:

Quick Wins

SCMIP1: Need for Technical Capacity Building for mSupply across other modules apart from warehousing and the need to increase license to increase visibility for DG and Director of Drugs on stocks and inventory levels.

There is a need for capacity building for mSupply especially for operators of the platform and for reporting capabilities for senior managers. To drive use and uptake, there is a need for additional licenses to provide line of sight on reporting for the DG, Director of Drugs, SPHCMB and HMB to provide visibility on current stock levels, expiry dates and inventory.

SCMIP2: Review LOMIS implementation to include alternative platform that is more sustainable, providing home grown driven solutions that are sustainable and can be funded by the state.

The LOMIS pharmaceuticals platform is not functional and also unsustainable because of the high cost of digitization across health facilities to track consumptions and stock counts. There is a need to explore home grown solutions that are sustainable and can be funded by the state. Lomis is costing the board a lot of resources. There is a need to hasten the transition plan for deploying the in-house alternative software.

SCMIP3: Plan implementation of CCE inventory and ticketing system for real time view on status of CCEs and functionality status

There is a need to develop a CCE inventory and ticketing system to provide a near real time view on the status of CCEs and functionality status for a near real time focus on PPM and understanding the locations for CCEs.

SCMIP4: Realignments are required to improve operational data visibility and more coordination of commodity logistics. The Department of Pharmaceutical Services should be the main anchor point for such integration.

From the analysis and engagement of stakeholders across the SCM value chain, it was agreed that some realignments are required to optimize and improve coordination by transitioning all supply chain operations under the Department of Pharmaceutical Services. Current practice has a decentralized approach that impacts integration. For example:

A. The **coordination of floating assembly** should be **handled by Pharmaceutical Services instead of Admin & Human Resources**.
B. The **coordination of malaria commodities' logistics** should **be domiciled in the Dept of Pharmaceutical Services instead of the Department of Disease Control**.
C. The **Department of Pharmaceutical Services should coordinate RH commodity logistics instead of the Department of Family Health.**

SCMIP5: Develop SCM Dashboard for Dry Store and Essential Medicines by building a multi-data source platform to support decision-making

Create a single repository and data pipelines across existing tracer drugs and commodities by pipelining data from mSupply, DVD-KPI, and LOMIS Platform to track warehousing and distribution, inventory management, stock counts and verification, expiry, and loss of items across the supply chain for essential medicines will provide an integrated view of the supply chain environment.

SCMIP6: Expand SCM Dashboard to include Vaccine Management &CCEs to support decision-making

Expand the single repository by including additional datasets from immunization forecasting and quantification tools, e-Ledger, and Open LMIS to track stock availability and vaccine utilization.

The second component of implementing the SCM dashboard includes integrating CCE availability and status reports into sustainable data pipelines to provide a clear view of functional CCEs across facilities and their PPM status.

Medium Term

SCMIP4: Develop Uniform Requisition tool to improve forecasting and quantification

Standardize and develop a single requisition tool for DMCA, focused on implementing a strategy of using uniform requisitions forms or platforms at the facility level to the DMCSA across all the pull strategies (1PL, 2PL, 3PL). Examples like the NLHMIS provide near real-time requisitions from the facility to the DMCSA.

Once a single tool or platform is achieved, the data can be integrated into a single SCM dashboard to view requisitions and deliveries.

SCMIP5: Deploy alternative platform for LOMIS to digitize stock consumption reporting at the facility to have near real-time insights on consumption patterns

Expand the deployment of the home grown LOMIS alternative to digitize consumption reporting for near real-time reporting of consumptions from the facility end from DMCSA. Facilities can also explore several exemplar models, such as the NHLMIS, OneBox, and SHCSS, to report consumption in near real-time to get a more accurate consumption pattern at facility level.

Long Term

SCMIP5: Integrate PH, EM, and Vaccine Programs for greater visibility and efficiency of drugs, vaccines, and commodities.

In the long run, it is important to integrate all programs into a pull strategy, as deployed by DMCSA as a central anchor point for warehousing and last-mile distribution. This will provide greater visibility and a line of sight on stock counts, consumption, and accurate forecasting of stocks and commodities.

2.5 Field Assessment of Process for SCM Operational Data

2.5.1 Overview & Rationale for Field Assessment of 44 PHCs

A comprehensive field assessment was conducted in 44 primary health facilities to understand the use of operational data within the facility levels and how they connect to broader state-level operational data frames, especially for public health programs, essential medicines, and vaccine/CCE management and reporting.

Of the 44 Primary health facilities visited, 64% (28) are urban, and 36%(16) are rural. 48%(21) of the facilities offer 24-hour services, while 52%(23) provide services for 8-12 hours. 77%(34) of facilities are implementing BHCPF, and 66% (29) have a provision for social insurance schemes. 43% (25) of the facilities have other direct funding sources.

The field assessment provides a frame for understanding the data collection structure at the facility level and the institutional framework that exists to power data collection and transmission to LGA, Zonal, and State levels. Some insights for SCM operational data are provided below:

2.5.2 Management of PH and EM Programs

- **95%(42)** of the health facilities reported having a dedicated pharmacy for managing commodities, especially public health and essential drugs, through the DRF.
- Of these, **84%(37) reported integration between PH and EM programs** regarding warehousing and inventory management centrally through the DMCSA.

2.5.3 Understanding Stock Counts for PH and EM Programs

2.5.3.1 Public Health Programs

- **98%(43)** of the health facilities reported tracking their inventory for a range of health initiatives, including HIV, TB, family planning (FP), immunization, Free Maternal and Child Health (MNCH), nutrition, and malaria.

- Of these, **100%(43)** reported using paper forms through ***Inventory Control Cards (ICC), Store Ledger, and Bin Cards*** to submit stock levels to the LGHA.

- **93%(41)** of facilities submit reports every month and only **5%(2)** daily. However, one facility reported sending stock balance reports for public health programs only on a needs basis.

- **67%(29)** of the facilities reported determining minimum stock levels for the PH program internally, with **33%(15)** reporting that stock levels are determined by the state and LGA teams.

2.5.3.2 Essential Medicines

- **98%(43)** of the health facilities track their inventory for or a range of health initiatives, including HIV, TB, family planning (FP), immunization, Free Maternal and Child Health (MNCH), nutrition, and malaria using paper forms ***(Inventory Control Cards (ICC), Store Ledger, and Bin Cards)***

- Of these, 36%(15) of facilities reported updating their stock balance daily, while 51% (22) update their stock balance monthly.

- **86%(37)** of the facilities reported determining their minimum stock levels internally, with **14%(6)** reporting that the state and LGA teams determined them.

2.5.4 Requisitions for PH, EM Programs & Vaccination Management/CCE

2.5.4.1 Public Health Programs (PH)

Requisitions for PH programs vary, but the predominant approach involves submitting requisition forms to the LGA focal person responsible for overseeing the PH Intervention based on consumption data and stock balance assessments.

The requisition process typically involves using **paper forms** (Requisition Forms, SRIVs), with **80%** of facilities submitting requisitions monthly and 7% quarterly to DMCSA. However, 9% of the facilities reported making requisitions only on a needs basis.

- **27%(12)** of the health facilities reported **receiving orders in 5 to 8 Days, while 23% (10) experienced delivery less than two days after requisition. Another 23% receive orders between 2 Days and 4 Days.** 16% of health facilities face **delays of more than 12**

days. The requisition process indicates a mix of efficiency and delays in facility requisition processes.

2.5.4.2 Essential Medicines

For requisition on EMs, **98%(43)** of facilities make requisitions monthly using paper forms (SRVs and Requisition) for essential medicines.

- **27%(12)** of the health facilities reported **receiving orders in 5 to 8 Days, while 23% (10) experienced delivery less than two days after requisition. Another 23% receive orders between 2 Days - 4 Days.** 11% of health facilities face **delays of more than 12 days.** This indicates a mix of efficient and delayed procurement processes across facilities.

- 32%(14) of health facilities use paper-based tools to update consumption data at the point of service through the Patient's prescription forms and service unit utilization register. Another 32%(14) of facilities reported daily updates through the use of patient prescription forms and service unit utilization register, and 32%(14) reported reporting on consumption data monthly through the DRF monthly reporting template these, 81%(35) of facilities reported sending consumption reports monthly through Summary Sheets.

2.5.4.3 Vaccines and CCEs

82%(36) of facilities maintain a status register on their CCEs and availability of vaccination services. Of these, 77% (34) of facilities maintain an updated list of CCEs, with their status registers maintained via paper forms.

- Regarding the frequency of CCE inventory tracking, 57%(25) of health facilities provide daily status updates on CCEs, 34% provide monthly status updates, and 9% provide weekly status updates.

- 90% (44) of health facilities track vaccine consumption using paper forms. 25%(10) facilities reported tracking vaccine consumption daily using the vaccine tally sheets. 32%(13) track vaccines monthly through the Monthly Health facility vaccine utilization reporting form.

2.5.5 Aligning Facility-based Reporting to State-Level Reporting

This section of the report tries to model the data flow process and map out how facility-level reporting tools are transmitted into state reporting forms for evidence-based decision-making. It is part of the framing for understanding operational data flows between facility-level and state-level tools for aggregation and reporting on supply chain management.

Component	***Facility Level Tools***	***State/National Level Tools***
Warehouse Management	★ *N/A*	★ *mSupply*
Quantification of Vaccines	★ *N/A*	★ Immunization forecasting & Quantification tool
Requisition for EM	★ *SRVs* ★ *Facility Requisition Forms*	★ *N/A*
Requisition for PH Programs	★ *NHLMIS*	★ *NHLMIS*
Delivery for EM Programs	★ *LOMIS*	★ *mSupply*
Delivery for PH Programs	★ *LOMIS*	★ *mSupply*
Delivery for Vaccines	★ *OpenLMIS*	★ *OpenLMIS*
Vaccine Utilization	★ *Vaccine Ledger*	★ *e-Ledger*
Consumption	★ *ICC* ★ *Store Ledger* ★ *Bin cards* ★ *Daily Consumption Registers* ★ Pharmacy & Accounts Register.	★ *N/A*
CCEs Availability & Functionality	★ *WICR* ★ *Maintenance Logbook*	★ Google Sheets

2.6.1 Performance Management Mapping for Supply Chain Management Operational Data

A performance management mapping was conducted to evaluate how existing operational data aligns with performance measures outlined in strategic documents from SSHDP and partners.

To implement this mapping, a two-day workshop was organized to explore how current operational data can answer performance questions and support the strategic outcomes and vision of SSHDP and the state partners.

Components	Performance Measures	Indicative Performance Indicators	Data Source	Frequency
Supply Chain Operations	• What is the total budget for supplies? • What is the total supplies budget vs the total commodity budget?	• % of total health budget for supplies	• Capitalization Form (Essential Medicine) --- DRF	Annual
	• What is the total budget for essential medicines? • What is the total essential medicines budget vs the total commodity budget?	• % of total health budget for essential medicines • % of total health budget for commodities	• **For DRF**: mSupply (Value of Supplies received from Suppliers and Total Invoice of Sales to HFs) • mSupply for annual quantification of stocks • **For FreeMNCH** : CRRF Form Submitted to DMCSA by HFs & Invoice issued by the DMCSA to the HF	Annual
	• What is the total budget for PH Programmes? • What is the total PH Programmes budget vs the total commodity budget?	• % of total health budget for PH programmes	• Proof of Delivery (POD) -at a the facility • **AOP funding for all Commodities	Annual
	• How does the health sector reduce commodity wastages across all levels and all programs?	• Level of commodity wastage (%)	• Tally Card • ICC • Store Ledger/Store Records Register • mSupply • NHLMIS • Transfer and Return Form • Facility Monthly Mentoring and Coaching Checklist	EM-Monthly PH-Bi-monthly

	• How many facilities in the State have adequate storage amenities (pharmacy, cold chain equipment etc)?	• Number of facilities with adequate storage amenities	• Open LMIS • IRP • Facility DRF Readiness Assessment Checklist(EMs) • Facility Monthly Mentoring and Coaching Checklist	Annual
	• How many breaches of SOPs and Operational Guidelines were reported?	• Number of SOP breaches reported • Number of operational guideline breaches reported	• Facility Monthly Mentoring and Coaching Checklist	Monthly
Requisition and Delivery	• What is the turnaround time on supply deliveries (PH Programs)?	• Supply deliveries (PH programs) turnaround time (days)	• Facility Integrated Supportive Supervision Visit	Quarterly
	• What is the turnaround time on supply deliveries (Vaccines)?	• Supply deliveries (Vaccines) turnaround time (days)	• Monthly Direct Vaccine Delivery	Monthly
	• What is the turnaround time on supply deliveries (EMs)?	• Supply deliveries (EMs) turnaround time (days)	• Daily issuance Invoices to HFs	Daily
Last Mile Consumption and Stockouts	• What is the average time lag for stock-outs of critical medicines or equipment?- PH Programs	• Average time lag for stock out of critical medicines/equipment - PH Programs (days)	• ICC • Tally Cards • NHLMIS	Bi-Monthly
	• What is the average time lag for stock-outs of critical medicines or equipment?- EMs	• Average time lag for stock out of critical medicines/equipment - EMs (days)	• ICC/ Ledger • Tally Cards • mSupply for EMs	Daily
	• What is the average time lag for stock-outs	• Average time lag for	• Store Ledger	Daily

	of critical medicines or equipment?- Vaccines	stock out of critical medicines/equipment - Vaccines (days)	• OpenLMIS	
	• What is the delivery lead time between DMCSA and suppliers and DMCSA and facilities (Upper and Lower stream)?	• Delivery lead time - DMCSA & suppliers • Delivery lead time - DMCSA & facilities	• Upper Stream - LPO(DMCSA) • Supplier Invoice • Lower Stream - Facility Requisition • DMCSA Invoice	- Tender - 3 weeks - Emergency - 1 Week - 1 day - 1 day
Vaccine Management & CCEs	• What is the percentage of facilities that have vaccines available? • What is the percentage of facilities that have functional cold chain equipment?	• % of facilities with available vaccines • % of facilities with functional cold chain equipment	• OpenLMIS - Vaccines & CCEs • Vaccine Ledger - Vaccines • IRP - CCEs	Weekly
Dry Store and Essential Medicines	• What is the total amount of DRF collected by facilities Availability, sustainability, usage, performance of DRF routine activities	• Total amount of DRF collection per Facility	• Monthly DRF Facility Reporting Template***	Monthly

3.0 Domain 2: Healthcare Financing

3.1 Governance & Institutional Assessment of MDAs with HCF Frames

Understanding last-mile financing is essential for public financial management (PFM) and prioritizing areas of most impact related to facility readiness and overall health system functionality.

In Kano State, healthcare financing is financed through government budgetary allocation, donor funding, NHIS, and private funding as provided in the Constitution. The Constitution empowers all three tiers of government (federal, state, and local) to mobilize and deploy resources to provide healthcare within their jurisdiction.

From a macro lens financing perspective, Kano State has a threshold between 15% - 17% share of the annual budget for the health sector as a total percentage of the budget, which is in line with the 2001 African Union Abuja declaration. However, releases are below the 15% threshold.

The healthcare financing domain provides a foundational frame for a solid and responsive primary health care (PHC) system focused on achieving universal health coverage (UHC)

The diagnostic review provides a frame for understanding operational data in healthcare financing across the following components:

- Assessing Health Planning & Budgeting
- Assessing PHC Funding and Last Mile financing
- Assessing Basic Health Care Provision Fund (BHCPF)
- Assessing PHC Performance Financing
- Assessing Healthcare Financing Governance
- Assessing Enhanced Health Financial Data Integration
- Assessing Capacity Building
- Assessing Stakeholder Engagement
- Assessing Monitoring & Evaluation
- Assessing Technology Adoption

A key element of healthcare financing is understanding the average cost required for effective PHC service delivery, especially regarding achieving the MSP. Based on the MSH costing for achieving the MSP in 2019, the average cost per capita for achieving the MSP in Kano is N5,620 (USD 17.8) compared to N7,532 (USD 23.8) in Kaduna. These actual costs fall far short of the expected investments to achieve the MSP.

As part of the framing for understanding the HCF as it relates to operational data, the following existing studies, laws, and data products were reviewed to provide a situational context for the HCF domain. The studies included a comprehensive examination of national and state-level documents, incorporating key reports shown in the table below:

Domains	**Existing Study Materials for Desk Reviews**
Healthcare Financing	- *Proposed Public Procurement Manual* - *DAI- Kano State PHC Management Capacity Assessment* - *Kaduna State Primary Health Care Management Strengthening Training Programme* - *Cost Analysis of Primary Health Care in Kano and Kaduna States* - *KNCHMA Operational Guideline* - *KSPHCMB Assessment Report* - *KNSG 2021 Budget* - *KNSG 2022 Budget* - *KNSG 2023 Budget* - *Decentralized Facility Financing Training Manual* - *Kano Public Financial Management Law* - *Basic Health Care Provision Fund (BHCPF)* - *BHCPF Guidelines* - *BHCPF Quality Improvement process and tool* - *Fiscal Space for Health Financing in Nigeria* - *Kano State 2024 Health Sector AOP* - *Kano State MTEF 2021- 23* - *Financial Operational Autonomy* - *Kano State Revenue-Codification Law* - *Kano State 2020-approved budget-Supplementary* - *Full Year Performance- 2020*

Each reviewed document was carefully selected with the engagement of stakeholders within Kano State's health system. The findings from the desk review were validated through focus group discussions and key informant interviews to ascertain the current state of play in the health space.

After reviewing the various reports on healthcare financing and FGD/KII sessions with SMOH, SPHCMB, KHETFUND, KCHMA, and PHIMA, a scoring gradient was generated after the assessment, identifying performance areas regarding data visibility for healthcare financing.

From the FGD assessment, the subject matter experts graded a general score of 58%, indicating a standardizing maturity gradient. The scoring components are provided below.

Summary Result from FGD/KII (Healthcare Financing)				
Assessment Area	**Weighting (%)**	**Actual Score**	**Percentage Score (%)**	**Growth Areas for Operational Data**
Health Planning & Budgeting	17.5	12.63	**72%**	
PHC Funding & Last Mile Financing	19.5	13.20	**68%**	
Basic Healthcare Provision Fund	18.5	15.80	**85%**	
PHC Performance Financing	9	3.53	**39%**	• Financing facilities based on performance • Facilities to develop scorecards on financial management
Healthcare Financing Governance	22	15	**68%**	
Health Financial Data Integration	2.5	1.37	**60%**	
Capacity Building	4	1.87	**47%**	• Instituting capacity building on infrastructure and technology

Stakeholder Engagement	2	0.60	**30%**	• Initiating a feedback mechanism for policy implementation • Automation of stakeholder engagements and feedback
Monitoring & Evaluation	7	2.53	**36%**	• Improving timeliness of reporting mechanisms to near real time • Providing a stakeholders feedback mechanism to be incorporated into the decision making process
Technology Adoption	7	3.67	52%	
Total Score (100%)	**100**	**70**	**70%**	

From the table above, there is a clear line of sight for generating insights for health financing KPIs across health planning and budgeting (72%), PHC funding and last-mile financing (68%), Basic Healthcare Provision Fund (85%), Healthcare Financing Governance (68%), Healthcare Financing Data Integration (55%), and Technology Adoption (52%).

Areas requiring improvements in optimizing operational data and collecting core indicators include PHC Performance Financing(39%), Capacity Building (47%), and Stakeholder Engagement (30%).

3.1.2 Availability of Legal & Institutional Framework for PFM

Several tools and frameworks create opportunities to generate insights into Kano's health financing landscape. These structured tools across both national and state lenses help regulate health care financing within the fiscal space of Kano state, as shown below:

- Public Financial Regulation of 2020 (Control and Management) as revised;
- Kano State Financial Instructions (as revised);
- Medium-Term Expenditure Framework
- Annual Appropriation Laws/Budget
- Kano State Stores Regulations (as revised);
- Kano State Civil Service Rules (as revised);
- Treasury Circulars;
- Expenditure Warrant;
- State Executive Council Approvals;
- Revenue Administration Law no.2 2010; and
- Personal Income Tax Act (PITA) 2004 LFN (as amended).
- MDAs Revenue Harmonization Law 2016
- Local Government Harmonize Rates & Levies Law 2015
- Kano State Audited Account Report
- Procurement Law and Procurement Manual
- Public Financial Management Law
- Annual Operational Plan
- Operational Guidelines
- BHCPF Operational Guidelines
- Laws establishing MDAs tasked with HCF (MoH, MoF, MoBP, HSMB, SPHCDB, KANCHCMA, PHIMA, DMCSA KHETFUND, etc)

Public spending in the health sector is critical to service provision and achieving the overall health outcomes in Kano state. To adequately understand healthcare financing, it is essential to thoroughly examine the government spending process using the Medium Term Expenditure Framework and annual budget/appropriation law.

3.1.2.1 Medium-Term Expenditure Framework

The Medium-Term Expenditure Framework (MTEF) is a multiyear fiscal tool adopted in Kano that provides projections and guides sectoral allocation in the annual budget for the given timeframe of the MTEF. The Economic and Fiscal Update provides an economic and fiscal analysis that forms the basis for budget planning.

The second fiscal tool used for budget preparation is the Fiscal Strategy Paper (FSP), which determines the resources available to fund government projects and programs from a fiscally sustainable perspective through the Medium Term Budget Framework (MTBF) and annual budgeting process.

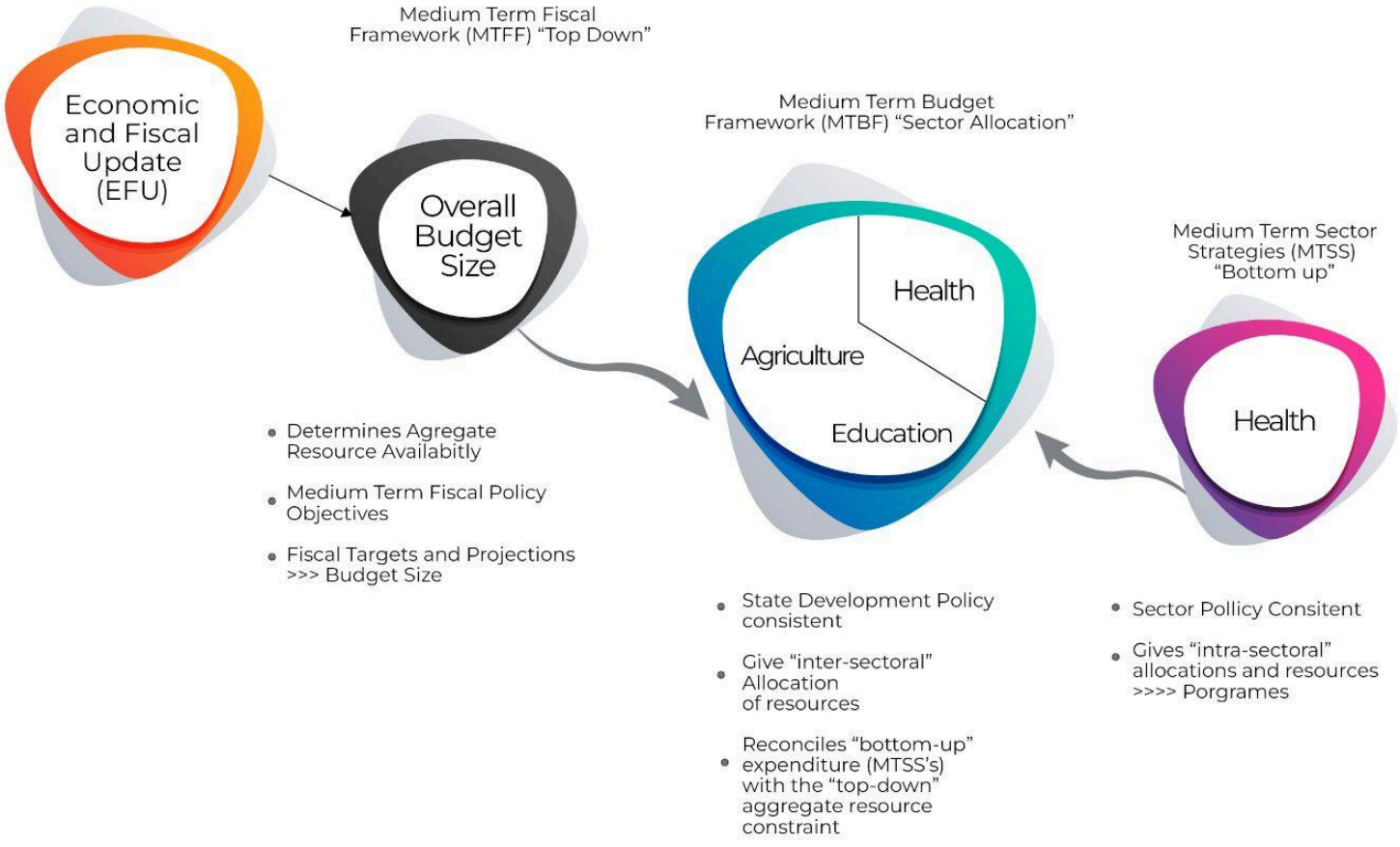
3.1.2.2 The Annual Budget.

In Kano, the fiscal year starts in January and ends in December every year. There are three stages:

- **Budget Preparation Process:** A fiscal framework is developed, and budgetary estimates are prepared based on the ceiling as an appropriation bill.

- **Budget Approval Process:** This process focuses on the budget defense of the House Committee on Health for the appropriation bill sent to the SMoH and all agencies to defend estimates. The budget is passed, and warrants are issued to the Accountant General to authorize the release of funds to meet expenditures as appropriated.

Comprehensive Medium Term Expenditure Framework (MTEF)



- **Budget Execution Process:** This process focuses on implementing the budget through procurement systems and procedures to ensure the execution of line items within the budget.

3.1.3 Institutional Arrangements: Organogram & Organizational Chart of MDAs focused on HCF

Healthcare financing from a policy level is mainly domiciled in the State Ministry of Health, which oversees several agencies, such as the Kano State Contributory Healthcare Management Agency and the Kano State Primary Healthcare Board. This section tries to understand how the governance structure around PFM can drive the operationalization of operational data relating to HCF, as shown below.

A. Kano State Ministry of Health.

The State Ministry of Health develops and implements policies and programs and undertakes other necessary actions to strengthen the health system and deliver effective, efficient, and affordable services.

From the perspective of HCF, the Honorable Commissioner for Health gives general direction and control of funds in the sector. The PS is the chief accounting officer of the Ministry.

Kano State Contributory Healthcare Management Agency (KNCHMA)

The Kano State Contributory Healthcare Management Agency serves as the state's vehicle for improving healthcare resource pooling and service purchasing by expanding the state's health insurance mechanism.

The establishment of KSCHMA emanated from the NHIS proposal to give State Governments the power to create an organization that will complement the healthcare financing mechanism and provide financial risk protection to achieve UHC in the State, as shown in the agency's organizational chart.

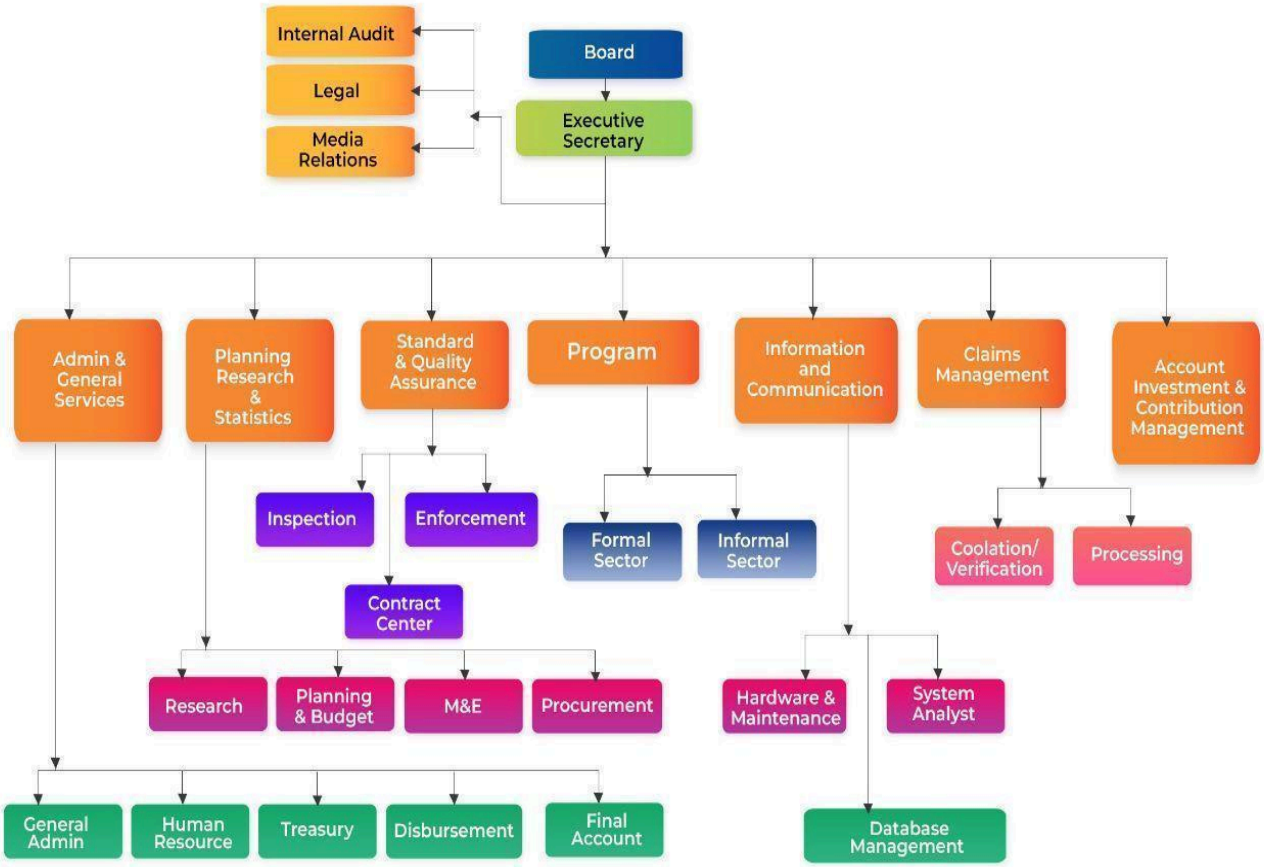


Figure 2 KNCHMA Organogram as contained in the agency's Strategic Plan

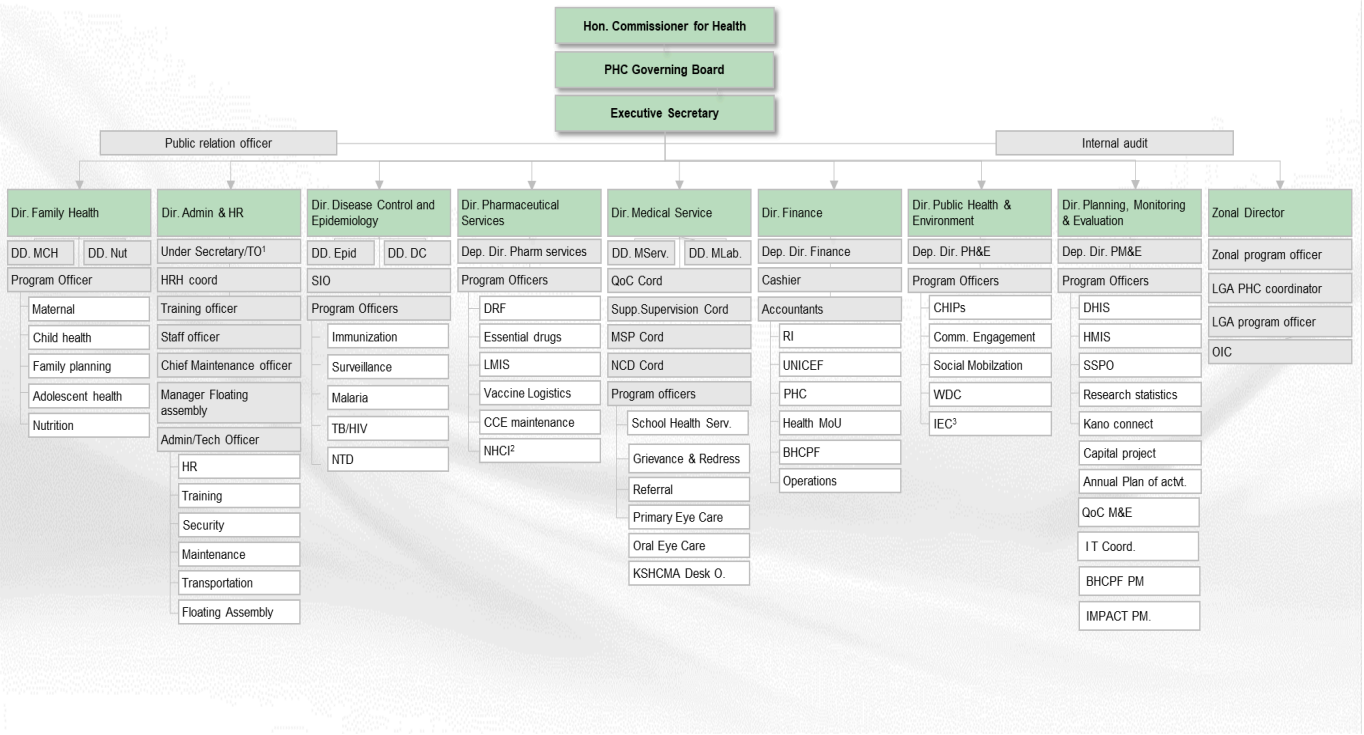
Kano State Primary Health Care Management Board

The SPHCMB is legally charged with providing, regulating, coordinating, supervising, and monitoring the activities of Primary Healthcare Centres (PHCs) in the State, as envisaged in the National Health System.

The organogram below depicts the six fundamental departments of the Board as well as the chart at zonal and LGA levels as determined or provided for by the law. Their attached divisions, sections, units, and programs are as required by the Board to deliver their functions as outlined in the law.

JOB DESCRIPTION

The SPHCMB organogram has been updated to match the state's current realities



1 - Transport officer; 2 – National Hypertension Control Initiative; 3 – Information Education Communication

Source: Desk reviews; KIIs of stakeholders; Team analysis

1

3.1.4 Understanding the components of HCF in focus (macro and micro level financing) and MDAs Tasked with operationalization

The Kano State government pools resources into the consolidated revenue fund (CRF). However, some revenue comes from assistance and grants and might not necessarily go into the CRF. These pooled resources are aggregated and appropriated across government sectors and subsectors.

In addition to the statutory allocations from the state government, the State Primary Health Care Development Board receives funding from the Federal government through the Basic Healthcare Provision Fund to establish infrastructure for service provision, drugs, HRH, equipment, financial management, etc., courtesy of the National Health Act.

The Board also receives support and grants from the federal government and donor partners for improved service delivery in Routine Immunization, Nutrition, Maternal and Child Health, and other Primary health-related activities.

Kano State Contributory Health Management Agency, through the BHCPF, purchases services for vulnerable groups. The agency also arranges insured health schemes for public and private clients. These schemes have greatly improved financial protection and expanded the fiscal space for healthcare financing.

3.1.5 Understanding Operational Data used to generate Performance Management insights for HCF at the State (macro) level

At the macro level, the state is implementing the **State Integrated Financial Management System (SIFMIS)**, supported by the World Bank, as an information system used for recording, accounting, and reporting on overall fiscal operations.

At the micro level, the facility implements paper-based systems for generating financial records using financial tools like Cash books, ledgers, payment vouchers, store receive/release vouchers, petty cash vouchers, bank reconciliation statements,

etc. The **Primary Healthcare Information System (PHCIS),** piloted in Kano, is currently being phased out at the national level.

3.1.6 Assessing the Component of Healthcare Financing through FGD/KII

As part of the assessment and in line with identifying data gaps within the Kano State health financing frame, the desk review reports were validated through focal group discussions and key informant interviews with stakeholders to understand the operational data landscape.

A list of service indicators and markers was identified through this process to understand tools and platforms used to drive insight generation across the health financing domain. The components are provided below:

3.1.6.1 Assessing Health Planning & Budgeting

Responsive budgeting, including budget appropriation, cash backing, and utilization, is key to achieving UHC. These are key markers for tracking budget performance and actual financing at macro and last-mile financing levels.

The FGD/KII sessions provided a line of sight for tracking the total proportion of health budgetary allocations (17%) as a fraction of the total state budget. However, when tracking budgetary performance, the actual funding could be better compared to the release and utilization of funding.

Regarding operational data from a macro lens, there is a line of sight for determining budgetary allocation, release, and utilization. These also include understanding the proportion of PHC financing to the total health sector allocation.

Additional funding frames that have supplemented funding include the Annual Operational Plan (AOP), funded by the State and development partners. The state also implements a medium-term sector strategy, which informs the preparation of the annual budget and the AOP.

As part of assessing the operational data landscape for healthcare financing, measurement markers provide a benchmark status of where Kano is regarding health planning and budgeting.

3.1.6.2 Measurement Markers for Assessing Health Planning & Budgeting

#	Measurement Markers	Implications	Status
1	Budgetary Allocation to health is easily accessible and can be disaggregated into various funding flows per the State Health Accounts to provide insights into macro-level funding at the state level. Additional funding streams like the AOP are appropriately captured as a single-sector strategy.	There is ample information on the budgetary allocation to the health sector and accessibility is tied to multiple platforms and institutions in the state. Stakeholders can therefore easily articulate funding streams for the sector and plan appropriately for any gaps they wish to address.	**Yes**
2	Budgetary allocations are electronically stored through SIFMIS, and the budget allocations to the health sector and their follow-on decomposition into budgetary line items are available for insight generation.	Budgetary information is stored securely and can be accessed safely through electronic means saving time and other resources. Provides a basis for tracking financial performance through specific budgetary line items	**Yes**
3	A single pool for financing is based on the Medium-Term Sector Strategy and Annual Operational Plan. Spending Gaps can be generated from the year's MTSS, AOP, and fiscal performance report.	High level planning view for the sector is available with funding gaps and areas of collaboration apparent to stakeholders.	**Yes**

3.1.6.3 Assessing PHC Funding & Last Mile Financing

Ensuring financing and PFM for last-mile impact is necessary for optimal primary healthcare operations and achieving UHC. Kano state implements PHC MOU basket funding to strengthen PHCs; however, other funding sources exist, like the BHCPF, KETHFUND, and development partners are provided directly to the facilities.

From a macro financing lens, the **Integrated Financial Management System** tracks the financing flow of resources from the budget to sectorial heads to facilities, providing visibility for reporting budgetary allocations, releases, and utilization.

From microlensing, **paper-based financial tools, such as Receipts, PVs, and Bank Statements, are used to track expenditures at the facility level. Ward-approved Budgets** are also shared with LGHA levels.

Furthermore, **quarterly financial reports** are produced, analyzed, and used for decision-making, with routine spot checks conducted at the facility level. However, payment processing at the last mile is both paper-based and electronic.

3.1.6.4 Measurement Markers for Assessing PHC Funding & Last Mile Financing

#	Measurement Markers	Implications	Status
1	The expenditure framework for tracking PHC spending at the AOP level is consistent and provides quarterly performance estimates on budgetary performance related to financing at the last mile.	Availability of data on PHC spending through performance reporting ensures that evidence-based decisions can be fed back into the budgeting process and the AoP, thereby completing the performance loop.	**Yes**
2	Visibility exists for macro-level financing frames such as (a) Total health sector allocation, (b) Total quality of spend, (c) Total allocation to PHC, and (d) Total quality of spend and component of spending	Macro-level visibility allows for adequate planning for financing frames and ensuring that opportunity cost and value for money are at the core of decision making.	**Partial**

3	The micro-financing lens is also fully digitized, providing a line of sight for actual funding at the PHC level in a disaggregated structure. Expenditures are (semi) digitized and can be traced back to budgetary provisions.	A lack of digitization of micro level financing information at the PHC level can lead to transparency issues resulting in inefficiency.	**No**

3.1.6.5 Assessing Basic Healthcare Provision Fund

The Basic Healthcare Provision Fund is a catalytic funding scheme to improve access to primary healthcare and, within this context, fiscal space. The state currently has 484 (one per ward) PHCs enrolled in the BHCPF scheme, with facilities receiving funding quarterly.

The operational guidelines for the BHCPF are in place to ensure (a) the provision of a minimum package of health services through the NHIS gateway, (b) the provision and maintenance of essential drugs, vaccines, consumables, facilities, equipment, laboratory, transport, and HRH services for eligible PHCs through the NPHCDA gateway and (c) provision of emergency medical treatment through the EMT gateway.

A national tool (**BHCPF Quarterly Assessment Tool)** is deployed for financial management and monitoring of the BHCPF investment through **quarterly business plans, expenditure reconciliation reports, and financial audits**. **Quarterly scorecards** are generated and used for decision-making by holding stakeholders' meetings and conducting facility performance tracking.

3.1.6.6 Measurement Markers for Assessing Basic Healthcare Provision Fund

#	Measurement Markers	Implications	Status
1	Opportunities exist to track and pipeline fiscal expenditure and quality improvement plans through the business plan and verification exercises from the BHCPF. The two gateways	Operational data from BHCPF implementation ensures that performance tracking can be consistent and expenditures adequately accounted for. This provides confidence in the system	**Yes**

	(NPHCDA and NHIS) can be tracked through business plans, fiscal retirement, and verification visits. The national PHCIS has been piloted in Kano and is an additional resource for generating insights from operational data.	at state and national level, which can lead to more funds being allocated to state facilities.	
2	Accountability measures such as the Quarterly scorecards allow for longitudinal analysis of variables within the quarterly assessment tool. The datasets can be pipelined.	Instituting accountability measures through consistent scorecard reporting improves the financial environment and provides datasets for trend analysis and forecasting.	**Yes**

3.1.6.7 Assessing Healthcare Financing Governance

Regarding healthcare financing governance and PFM at the facility level, a deliberate approach to connecting baseline and end-line datasets to the SSHDP is practiced. The governance framework includes (a) baseline assessment for all the PHCs, (b) BoQs for the PHC infrastructure for renovation and rehabilitation, and (c) Quarterly financial monitoring exercises and audits planned to answer strategic outcomes around healthcare financing.

A disbursement framework is also in place to track accountability through reconciliation measures from health budgeting, standing orders that guide financial management, and out-of-pocket expenses.

Retiring expenses and disbursement are paramount, and the state uses tools such as **approval attachments, receipts, store receipt vouchers, store issue vouchers, payment schedules, payment vouchers**, etc. The process's digitization level could be better, as requests, approvals, and retirement are mostly paper-based, and automation only exists in **electronic banking payments**.

Financial records are generated through paper-based financial reports, prepared monthly at the facility level, and then forwarded to LGAs and states. Some financial

tools include **cash books, ledgers, payment vouchers, store receive/release vouchers, petty cash vouchers, bank reconciliation statements**, etc.

Citizens play a crucial role in financial management. Citizen structures are embedded in the state's vertical programs, which integrate WDCs and other community structures, giving them a voice in the financial management of PHCs. Some financial documents for requests or approval require the sign-off of the community member/leader. At the same time, citizen groups have representation on government boards and conduct financial budget tracking.

3.1.6.8 Measurement Markers for Assessing Healthcare Financing Governance

#	Measurement Markers	Implications	Status
1	The facility's last-mile visibility of financial records and transactions is entirely digitized, with the potential for tracking disbursements and retirements. There is also an opportunity to track manual receipts and voucher reconciliations with electronic payment information.	Paper-based financial records through cash books and registers leaves room for errors and elongates reconciliation processes. Digitizing the process will ensure hard copy vouchers, invoices and receipts can be recalled instantly, making financial reconciliation and governance seamless.	**No**

3.1.6.9 Assessing Health Financial Data Integration

This component focuses on understanding the data sharing and integration level across the financial management frame for evidence-based decision-making. While there are challenges with interoperability across various financing frames due to differing individual mandates, the SMoH conducts quarterly meetings to track the financial management of all its agencies.

As the financial process is mostly manually (paper-based) implemented, sensitive healthcare financial data are protected by being stored in safes and arc-files in accounting and auditing departments and transferred to the store following completion. There are also no protocols for data breaches, as the process is still manual.

3.1.6.10 Measurement Markers for Assessing Health Financial Data Integration

#	Measurement Markers	Implications	Status
1	Financing data are shared across vertical programs and consolidated to provide a line of sight across the various financing streams through the system of health accounts (SHA). The state conducts regular SHA assessments to understand the level of financing.	Integrating financial data is critical to ensuring efficiency in financial spend and value for money. Ensuring a system of health accounts which cuts across vertical programming will provide line of sight on program implementation and facilitate decision making.	**No**

3.1.6.11 Assessing Monitoring & Evaluation

In terms of monitoring and evaluation, an institutional framework for tracking financing performance is based on KPIs tracked by the SMoH through a technical working group on HCF. An HCF scorecard is generated at the state level to track key performance metrics like the proportion of spending in the health sector.

The compilation and generation of the KPIs are manually computed, which may lead to a lack of detailed review and timely/real time feedback of the KPIs to track performance.

3.1.6.12 Measurement Markers for Monitoring and Evaluation

#	Measurement Markers	Implications	Status
1	Scorecards are in place through the instrumentality of the TWGs to track KPIs on healthcare financing across several frames, such as budget utilization rates, budget allocation, and spending quality, for corrective engagement with finance, planning, and budget ministries.	Scorecards help track KPIs and provide much needed data on financial performance for decision making. This can then be compared with the initial financing plan and adjusted as necessary.	**Yes**
2	The process is real-time, providing near real-time updates on the KPIs	The lack of real time or near real time updates on indicators can	**No**

	and quarterly updates on the HCF scorecards using a digitized process for tracking progress towards HCF, especially for several financing mechanisms like the Basket Funding and BHCPF.	delay corrective measures to the point where they have no effect on implementation. Digitizing the process and regularly updating the data will ensure that financial tracking and performance have an optimal effect on implementation.	

3.1.6.1.3 Assessing Technology Adoption

Regarding healthcare financing, the process is fully automated at the macro level through the SIFMIS implementation around budget preparation and implementation. Still, it is mainly manual at the facility, LGA, and Zonal levels.

3.1.6.1.3.1 Measurement Markers for Assessing Technology Adoption

#	Measurement Markers	Implications	Status
1	End-to-end digitization of the Financing frame is evolving with a line of sight at both macro and micro financing levels through technology across state and facility levels.	Providing end-to -end digitization of financing with a system of health accounts that works both vertically and horizontally across programmes and levels will provide immense potential for the health system to continue to make better decisions towards achieving the MSP.	**Partial**

3.2 Operational Data & Archetypes

3.2.1 Understanding Operational Data used to generate Performance Management insights for HCF at the State (macro) level

#	Components	Operational Data Archetypes	Frames	Type/Status	Description	Improvements?
1	**Health Planning & Budgeting**	State Budget	State	Electronic Active	The State Budget is an annual fiscal process where the state projects its revenues and how and where the anticipated revenue will be expended. The process is a continuous circle that starts from a point where that state reviews its Multi-year Strategic Health Development Plan (SSHDP) and the Medium Term Sector Strategy (MTSS) leading to review and the development of an Annual Operational Plan (AOP) for the financial year.	Integration and opportunity to track macro-level healthcare financing from the lens of understanding the proportion of spending to the health sector and the quality of such spending in terms of Budget Utilization Rates (BUR). Some indicators like THE, THE/GDP (%) GHE, etc.
		Medium Term Sector Strategy (MTSS) & Annual Operational Plan (AOP)	State	Paper Spreadsheet Active	Funding pools from MTSS and AOP can be accessed in Excel to further understand the health sector's	Funding pooling can be analyzed and integrated through the State Health Accounts (SHA) to understand funding components, including Insurance, OOP expenditure, Donor Funding, etc.

					financing, including releases and utilization. The financing efficiency can be compared to budgetary performance.	
2	**PHC Funding & Last Mile Financing**	SIFMIS	State	Electronic, Automated Active	SIFMIS is used to prepare budgets and plan budgetary allocation across the frame. The platform allows access to the sector's funding frames. Hence, there is a line of sight for the proportion of budget spending to the health sector.	Integration and opportunity to track PHC-level funding from the health financing KPIs as it relates to PHCs
		Quarterly Financial Reports	State	Paper-based Active	Quarterly financial reports provide a macro view of the state's budgetary performance based on the budget's implementation.	Opportunity to pipeline quarterly budget performance report to understand trend on budget utilization rates and actual funding for last mile financing from budgeted spend
3	**Basic Healthcare Provision Fund (BHCPF)**	BHCPF Quarterly Improvement Process Tool (QIP)	National /State	Spreadsheet Automated Active	QIP has a component for the financial management module to track the availability of financial management tools such as receipts, vouchers, store records,	The QIP checklist can be integrated into the HCF Dashboard to provide a clear view of financial management across BHCPF facilities and progress towards meeting the QIP.

					and appropriate use of business and improvement plans	
		BHCPF Business Plans	National /State	Spreadsheet Paper Active	BHCPF's Quarterly business plan provides estimates around achieving Quality Improvements across the financing frames at the primary facility level	This is an opportunity to integrate approved Business Plan expenditures and their correlation to service delivery and client satisfaction. Financing flows from the business plan provide an understanding of financing requirements at the facility level.
		BHCPF Annual Improvement Plan	National	Spreadsheet Paper Active	The annual Improvement Plan provides areas for improvement within BHCPF facilities.	The QIP checklist can be integrated into the HCF Dashboard to provide a view of financial management across BHCPF facilities and progress towards meeting the QIP.
		BHCPF Scorecard	State	Spreadsheet Active	A quarterly scorecard is generated and used by the state for decision-making. The process is generated on spreadsheets.	A Quarterly Scorecard provides a line of sights for trending performance around financial management at BHCPF facilities
4	**Healthcare Financing Governance**	Receipts (Store & Payment)	State	Paper-based Active	Store and Payment Receipts are used as control measures to track financing.	Automation of the process will increase speed and accuracy as well facilitate seamless integration into the Dashboard.

		Cash Book/electronic banking payments.	State	Paper-based Active	Additional instruments to track expenditure	Automation of the process will increase speed and accuracy as well facilitate seamless integration into the Dashboard.
		Bank Reconciliation Statements	State	Paper-based Active	Additional instruments to track inflow and expenditure	Automation of the process will increase speed and accuracy as well facilitate seamless integration into the Dashboard.
		Vouchers (Store & Payment)	State	Paper-based Active	Store and Payment Vouchers are used as control measures to track financing.	Automation of the process will increase speed and accuracy as well facilitate seamless integration into the Dashboard.
5	**Monitoring & Evaluation**	Healthcare Financing KPIs	State	Paper-based Active	The SMoH tracks key performance indicators with a technical working group developing a scorecard.	TWG HCF Scorecards can be integrated into a single HCF Dashboard to provide a multi-data sourced view of HCF.

3.3 Understanding the Process Review Flow of Operational Data.

This section seeks to provide details on how certain operational data archetypes flow with respect to its different components within the Healthcare Financing domain. It focuses on who collects the data or where the data is stored, how the data can be used to generate insight, the business rules which spells out how the data is developed, produced and used and finally, a link to the detailed business rule for more in depth insight is provided.

#	Component	Operational Data Archetype	Who Collects Data?	Usecase/Insight used from operational data	Business Rule	Detailed Link to Business Rule
1	**Health Planning & Budgeting**	State Budget	**State Team** - Ministry of Budget and Planning Director Budget, Head SIFMIS (Health Desk officers) - Ministry of Health (SMoH, SPHCMB, KCHMA etc) - DPRS, Director Finance, Planning Officers. - Ministry of Finance - Director Final Account, Director Expenditure	- Total Health Expenditure (THE) -Budget Utilization Rates -Budget Variance -Funding gaps -Donors/partners contribution -Health Sector Contribution to GDP	1. Using a spreadsheet, the state Reviews the state 5-year Strategic Health Development Plan 2. Review of the annual Operational Plan 3. Budget call circulars. Ceilings are given based on MTEF 4. Finalization of Annual Operational Plan 5. The MoPB reviews previous Performance and other Data 6. Allocate funds (Envelope) across MDAs using SIFMIS 7. The health sector allocates resources across the sector (SMoH) 8. The health sector goes	

					for Bilateral Discussions with MoPB proposal 9. MDAs draft budget presented to State Executive Council for Consideration and aggregation. 10. The Governor presents the draft Budget as a Appropriation Bill to House of Assembly 11. Consideration, Defence at the House of Assembly by Ministers and Agencies under the health sector. The Budget is passed into law by House/Approval. 12. The Governor presents the draft Budget as Appropriation Bill to House of Assembly 13. MDAs Draft budget presented to State Executive Council for consideration and aggregation 14. Issuance of Warrants for Utilization 15. Budget Implementation starts 16. Monthly Budget Review then a Quarterly Budget review 17. Bi-Annual AOP/budget Review and Annual AOP/Budget review	

		Medium Term Sector Strategy (MTSS) & Annual Operational Plan (AOP)	- M&E Officers in the health MDAs - Planning Officers in the MDAs - DPRS in the Health sector -Planning Officer in MoBP -AOP Focal officers (in all the MDAs). - Planning Officers, DPRS	- Budget ceilings - Sectoral Budget allocation - Defines priorities - Alignment with National goals - Funding requirement - Funding gaps -Donor contribution	1. Development of the State strategic health development plan (SSHDP) 2. Extraction of the Medium-term sector strategy from the SSHDP 3. Extraction of the Annual Operation Plan from the MTSS 4. With the Annual Operation Plan, the health sector identifies funding sources 5. AOP approval and implementation 6. Monthly Departmental Annual Operation Plan Review 7. A quarterly MDA review is conducted 8. Annual Performance (APR) Review of the MTSS 9. SSHDP Review	
2.	**PHC Funding & Last Mile Financing**	SIFMIS	- SIFMIS focal person - Directors of Finance in MDAs	- Real time budget performance tracking	1. The Ministry of Planning and budget reviews previous financial year performance of the State 2. The Ministry Works with MDAs to develop state targets 3. The Ministry of Planning and Budget Coordinates the State priorities 4. On an **annual basis,** MoPB facilitates *budget*	

					allocation based on state priorities using the SIFMIS 5. **MoPB** facilitate Budget Approval and Implementation 6. Tracking Budget Implementation using SIFMIS 7. The Ministry of Planning & Budget conducts a **quarterly** review 8. Quarterly State Financial report is done **Electronically**	
		Quarterly Financial Reports	- Accountants, - Directors of Finance	- Quarterly feedback on budget performance - Quarterly Budget Performance Reports	1. The MDA sends budget performance templates requesting relevant data from stakeholders on budget performance for the previous quarter 2. Templates are completed and sent back to the MDA for analysis and data quality checks 3. MDA conducts data quality assurance including spot checks 4. MDA produces the quarterly financial report based on performance and makes appropriate recommendations.	
3.	**Basic Healthcare**	BHCPF Quarterly Improvement Process Tool (QIP)	1. Facility Improvement committee. 2. State Quality Improvement Team	1. Priorities of the facility 2. Gaps in quality service delivery	1. The BHCPF team conducts a quarterly quality of Care assessment to BHCPF	

	Provision Fund (BHCPF)			3. Strategies of addressing the gaps 4. Resources required to improve quality of service	Facilities 2. The team makes use of the quality assessment tool to collect relevant data. 3. The collected data is analyzed and findings are reviewed using a scorecard at all levels. 4. Visualization of findings is done on the BHCPF Quality of Care (QOC)Scorecard 5. Harmonization of quarterly quality improvement assessment to inform the development of annual improvement plan 6. Implementation of Annual Improvement Plan	
		BHCPF Business Plans	- OIC or the Facility Head	- Facility requirements - Resources allocation to address HF requirements	1. The state BHCPF team provides BHCPF Financial guidelines 2. The facility extracts the **quarterly** business plan from the annual Improvement Plan 3. LGA collates business plans developed by health care facilities both **paper-based and electronically** 4. The LGAs collate the business plan from the HFs and send to Zones using both **paper and**	

					spreadsheet. 5. Zones Collate Business plans and sends to state 6. State reviews and approves plans 7. Plans are submitted to the national which then approves the business plan 8. Approval of Business plan by National 9. Disbursement of funds to health Facility by National 10. Monitoring of business plan implementation by LGA (Monthly or Quarterly), State(Bi-annually)) and National (Bi-annually)	
		BHCPF Annual Improvement Plan	- Health facility Committee	- Identifies and sets priorities - Funding Requirements - Material and personnel requirements - Contribution of the beneficiaries	1. Visualization of findings is done on the BHCPF Quality of Care (QOC)platform 2. Development of BHCPF annual improvement plan 3. Implementation of Annual Improvement Plan 4. Quarterly visit to BHCPF facility	
		BHCPF Scorecard	1. Facility Improvement committee. 2. State Quality Improvement Team 3. National Monitoring	1. Highlights areas of improvement 2. Shows areas where progress has been achieved.	1. The two gateways (NPHCDA, and NHIA) + PHCMB, KACHMA and State Ministry of Health develops the Scorecard based on the assessment of the	

			team	3. Guides improvement strategies	facility. 2. The scorecard is given to the facility immediately as a feedback. 3. The facility uses the scorecard to review the business plan 4. Implementation of the business plan	
4	**Healthcare Financing Governance**	Bank Reconciliation Statements	-OICs or signatories to the accounts - Cashiers	- Level of spending - Clarifies gray areas - True stand of affairs	1. Monthly Review of cash book **paper based** 2. Obtain bank statement for the month under review 3. Comparative analysis on the entries on both bank statements and the cash book. 4. Develop the bank reconciliation statement	
5	**Monitoring & Evaluation**	Healthcare Financing KPIs	- M&E Officers, - Planning officers - DPRSs	The SMoH tracks key performance indicators with a technical working group	1. SHDP is developed that will guide health sector activities for next five years. 2. M&E plan is developed that will track and help maintain strong evidence base on SHDP implementation 3. The MTEF and MTSS are developed is expected to articulate a medium term (3 years) goals and objectives.	

					4. Sector performance review is conducted 5. State budget and AOP are developed. Annual Budget and AOP are reviewed for performance 6. SMoH, SPHCMB, KACHMA, KETFUND carry out performance review to track quarterly plans and targets 7. BHCPF business plan is developed for achieving quality improvement across financing frames at the PHC level. 8. SMoH, SPHCMB, KACHMA, KHETFUND carry out performance review to track monthly plans and targets	

3.4 Identifying Gaps & Opportunities for Improvements from the Desk Reviews, Landscape Assessment, and KIIs Validation Sessions

Having reviewed the operational data landscape across the HCF domain, it is clear that Kano State has a digitized microfinancing framework for PFM that tracks well-defined indicators within the State of Health Account (SHA) frames like THE, THE/Per Capita, etc.

Some financial management tools at the health facility level are mostly paper-based regarding micro-level financing. The BHCPF Quality Assessment Tool provides business plans and a clear framework for financial management and spending quality at the facility level.

There is an opportunity for significant improvements in the operational data landscape for (1) PHC Last Mile Financing, (2) Health Financial Data Integration, (3) Stakeholder Engagement, (4) Capacity Building, and (2) Fiscal Monitoring and Evaluation. A gap opportunity Matrix is further provided below, identifying areas of improvement and step-wise approach to improvements.

3.4.1 Gaps-Opportunity Matrix

#	Components	Gaps	Opportunities for Improvement
	Basic Healthcare Provision Fund (BHCPF)	**HCFGP4:** The BHCPF provides a complete suite of tools to track financial management at the facility level. However, there is a need to connect the facility-level insights from the BHCPF to the macro-level financing frame to gain perspective on last-mile financing at the BHCPF level and determine the spending quality to deliver a minimum package of health services.	**Integration of BHCPF toolkit into a single repository for the development of an HCF Dashboard that integrates QIP checklists, business plan KPIs, and scorecards to understand the performance of BHCPF facilities vis a vis their revenue and expenditure profiles**.
	Health Financing Governance	**HCFGP5:** The HCF Governance tools are mostly paper-based and include toolkits such as approval attachments, receipts, store receipt vouchers, store issue vouchers, payment schedules, and payment vouchers for financial auditing and tracking payments across the board. While the focus of operational data is not designed to provide accountability checks, pipelining some components of the governance tools will provide more clarity on financing flows.	There is an **opportunity to create a single data repository for integrating macro-level healthcare financing KPIs (from SHA) to understand the proportion of spending to the health sector** and the quality of such spending in terms of Budget Utilization Rates (BUR). Some indicators like THE, THE/GDP (%) GHE, etc.
	Data Integration	**HCFGP6:** Interoperability and sharing financial data are challenges in understanding financing flows between SMoH, SPHCB, KCHMA, KHETFUND, DMCSA, etc. SMoH attempts to harmonize financing frames manually to understand financial management in all its agencies.	**Integration of HCF Data across the Health MDAs into a single repository for the development of an HCF Dashboard that integrates revenue and spendings to understand the performance**

	Monitoring & Evaluation	**HCFGP7:** Healthcare financing KPIs are in manual forms, restricting trend analysis and the opportunity to pipeline them into a single repository.	TWG HCF Scorecards can be integrated into a single HCF Dashboard to provide a multi-data sourced view of HCF.

3.4.2 Process Improvement Plan

The process improvement plan provides a stepwise approach for improving operational data visibility to connect with the State and BMGF performance strategies. In this regard, we plan a phase improvement plan into the quick wins, medium-term, and long-term strategy to increase the visibility of reporting indicators across the input to outcome continuums as shown below:

Medium Term

HCFIP1: Develop a healthcare financing dashboard for pipelining various financial management KPIs to gain macro financing level insights

Create a health financing dashboard for integrating health financing KPIs from the macro financing lens for tools like SIFMIS, SHA, and quarterly budget performance reports, which generate insights on revenues from donors, households OOP, social insurance, Total Health Budgetary Allocation, Total Health Expenditure (THE), etc.

HCFIP2: Expand the HCF Dashboard to include Expenditure Insights from BHCPF perspectives

Expand the HCF Dashboard to include data pipelines and perspectives from BHCPF's QIP checklists, business plan KPIs, and HCF Scorecard to understand the performance of Apex facilities relating to financial management and the contribution of Apex facilities to THEs.

Long Term

HCFIP3: Explore optimizing process workflows, data flows, and digitization plans for Healthcare Financing Governance Tools.

It is important to explore automating workflows for HCF governance tools such as receipts, vouchers, payment schedules, etc., to digitize the tracking of disbursements and retirements across several financing frames and understand expenditure flows across facilities and at macro levels.

3.5 Field Assessment of 44 PHCs across the use of Operational Data for HCF

3.5.1 Overview & Rationale for Field Assessment

This assessment of 44 Primary Healthcare Centers (PHCs) in healthcare financing focuses on the financial management of BHCPF funding, expenditure management and reporting, and last-mile funding of facilities from macro-level financing. Furthermore, the assessment examines direct funding received by facilities from BHCPF, types of contributory packages, and the disbursement and reporting of funds.

3.5.1.1 Basic Healthcare Provision Fund (BHCPF)

77% (34) of PHCs implement the BHCPF, of these numbers, 87% (30) refers to vulnerable persons for enrolment on the BHCPF beneficiary list.
Regarding updates on the beneficiary list:

- 82% of the facilities reported that the beneficiary list is updated by the BHCPF focal persons at the LGA, while 18% reported that the beneficiary list is updated at the state level.

- 94% of the facilities update the beneficiary list monthly, and 6% quarterly. 97% of the facilities reported that the LGA team shares the list of beneficiaries monthly**.**

- 91% of the facilities reported storing the beneficiary list in paper-based formats, 6% use Digitized Excel Sheets, and 3% use digitized applications (Whatsapp).

- Regarding financial reporting, 92%(35) of facilities have financial statements. Of these, 97%(34) use paper-based methods, while 3%(1) use digitized Excel sheets. When asked about the frequency of financial reporting, 63%(22) of the facilities submit reports monthly, while 29%(10) report quarterly, 6%(2) weekly and 3% daily.

- Regarding the development of business plans, 89% of facilities develop their business plans on paper, 3% use digitized applications(WPS applications and WhatsApp), and 5% use Excel Sheets. Compared with the frequency of business plan development, 71% reported developing business plans quarterly.

- Regarding the updates to the business plan report, 66% of facilities update their plans quarterly, while 32% send their business plans monthly. 55% of the facilities reported monthly assessments, while 39% reported quarterly assessments.

3.5.1.2 Contributory Health Scheme

The contributory health scheme is an essential indicator for tracking financing schemes outside of budgetary provision. **66%** of the facilities provide social insurance, making **29** out of the **44** facilities visited as shown below:

- All 29 facilities currently have an up-to-date list of enrollees. Ninety percent of the facilities reported that the lists are updated by **KACHMA desk officers at the LGA**, while 10 percent reported that the updates are handled by the state.

- Beneficiary Lists are generated using paper-based formats, spreadsheets, and digitized applications. 76% of facilities use paper-based formats, while 14% use digitized spreadsheets, and 10% use digitized applications (sent on the WhatsApp platform)

- 83% of facilities reported updating the list of enrollees every month, while 13% reported every quarter.

- The scheme provides services such as ANC, Labour and Delivery, Nutrition Vaccination, Malaria, and IMCI.

3.5.1.3 Other Direct Funding

57% of the facilities reported having other funding sources from service delivery activities at the facility. Other funding sources include individual donors and influential community members.

The funds are utilized to support essential services provided by the facility, ensuring the availability of healthcare resources and improving overall service delivery within the facilities.

3.5.2 Aligning Facility-based Reporting to State-Level Reporting: Assessment

As part of the framing for understanding operational data flows between facility-level and state-level tools for aggregation and reporting on healthcare financing, this section of the report tries to model the data flow process and map out how facility-level reporting tools are transmitted into state reporting forms for evidence-based decision-making.

Component	***Facility Level Tools***	***State/National Level Tools***
Health Planning & Budgeting (Macro Level Financing)	★ *N/A*	★ *SIFMIS* ★ *SHA* ★ *AOP* ★ *Quarterly Budget Performance Report*
PHC Funding & Last Mile Financing	★ *Receipts* ★ *Bank Reconciliation Statements* ★ Vouchers ★ Cash Book/electronic banking payments	★ SIFMIS ★ *Quarterly Budget Performance Report*
Basic Healthcare Provision Fund (BHCPF)	★ *BHCPF Quality Assessment Tool* ★ *BHCPF Business Plan* ★ *BHCPF Annual Improvement Plan*	★ *BHCPF Scorecard*
Contributory Health Insurance	★ *Beneficiary List (Enrollee)*	★

4.6.1 Performance Management Mapping for Healthcare Financing Operational Data

This section provides an assessment of healthcare financing performance questions that can be answered through its operational data in view of the SSHDP and partners' strategic outcomes for the health sector. The primary objective is to evaluate the current performance management processes, identify strengths and weaknesses, and propose improvements to enhance the efficiency and effectiveness of healthcare financing operations.

The assessment focuses on how performance data is collected, managed, analyzed, and utilized to inform decision-making and optimize resource allocation. By mapping these processes, the report aims to provide a comprehensive understanding of the existing performance management system and recommend strategies for improvement.

As part of the implementation of the performance management mapping, a 2-Day workshop was planned focused on understanding how existing operational data answer performance measures across the SSHDP and several bodies of work. It was an open, interactive forum designed to address performance management questions that senior-level managers and policy decision-makers need to generate insights for improved decision-making.

The session also allowed the state to identify key performance measurement points to answer strategic questions from state performance measurement documents, such as the State Strategic Health Development Plan (SSHDP) in the healthcare financing domain. This exercise provided a comprehensive understanding of the performance metrics and indicators relevant to the state, facilitating strategic decision-making and resource allocation. The table below outlines the performance questions and components within the healthcare financing domain:

Components	Performance Measures	Indicative Performance Indicators	Data Source	Frequency
Health Planning & Budgeting	• What is the State's Total Health Budget for the year, • What is the percentage Health Budget to Total State budget, • What is the percentage of the PHC budget to the Total Health budget? • What percentage of the health budget is released and what percentage is utilized. • What is the financial performance of Health Agencies' Budgets?, • What are the funding gaps in the health sector • What are the major sources of funding for the health sector?, • What is the expenditure per capita and expenditure as a percentage of GDP?, • How much did KHETFUND release to MDAs within the budget year?, • What is the total contribution to HF by KSCHMA?, • What is the total income of KSCHMA?	• Proportion of Health budget to total State Budget. • Proportion of PHC budget to total health budget • % of health budget cash backed • % of health budget utilized • Total health expenditure per capita • % of population on indicative health insurance	• State approved budget, Capital Receipt • Monthly returns, SIFMIS, Report of annual account, Planning and budget committee bi-monthly report • AOP review , Monthly returns, SIFMIS, Report of annual account, Planning and budget committee bi-monthly report, Auditor General Report • AOP, State approved budget, MTEF • STate Health Account. NDHS. • Consolidated cash book • Financial Report on income, • Schedule of capitation disbursement	Annually Quarterly & Monthly Quarterly & Monthly Quarterly,
PHC Funding and Last Mile	• How is fund utilization and expenditure tracked in the health	• % of health budget utilized • Total health expenditure per capita	• Financial Tracking tool, Impact - log book,	.Annually

financing, DFF - DFF, BHCPF, Impact, DRF, KSCHMA, ANRIN, Philanthropy, Partner support	sector? (DFF, BHCPF, Impact, DRF, KSCHMA ANRIN, Philanthropy, Partner support) • Is there a direct correlation between fund utilization and an improvement in access to PHC services by citizens?	• % of population accessing PHC services	business plan • State Health Performance Report, State Level Surveys, SMART Survey, NDHS, MICS	Annually Periodically
PHC Performance Financing	• Does the state implement a Performance for Result (P4R) system? • Do they track value for money?	• Number of performance related incentives implemented • Number of fiscal measures implemented	• Financial Tracking tool, Impact - log book, Business plan, DHIS2 indicator. • State Health Performance Report, State Level Surveys, SMART Survey, NDHS, MICS, Business plan, DHIS2 indicator.	Annually Periodically
Healthcare Financing Governance	• How often does the Health Financing TWG meet annually?, • Do Health Agency TWGs report to the State TWG?	• Number of TWG meetings held • Number of Health Agency performance reports produced and submitted	• TWG attendance sheet, • TWG minutes of meeting • Performance Reports	Quarterly Quarterly
Enhanced Health Financial Data Integration	• Are the facility plans informing the LGA plan which in turn inform the SPHCMB Plan? • Are quarterly financial plans informing the LGA financial plan and inturn informing the state plan?	• Number of integrated plans developed & implemented	• Facility Business plan, LGA AOP, State AOP.	Annually & quarterly
Capacity Building	• Is there adequate financial management capacity within	• % of health workers with financial management training	• Kano State PHC Management Capacity	Annually

	Healthcare workers?, • What systems are in place for continuous capacity building?	• % of health workers trained	Assessment Report • ISS report	Quarterly
Stakeholder Engagement	• Does the health sector hold town hall meetings when preparing the state health budget • Does the citizen group provide feedback on budget implementation	• Number of health budget town hall meetings held • Number of feedback received from citizens on health budget	• Town hall meeting report • Citizen scorecard on budget implementation.	Annually Annually & Quarterly
Monitoring & Evaluation	• Does the state track health financing KPIs?	• Number of health financing KPIs tracked?	• State M&E Plan	Annually.
Technology Adoption	• What is the latest version of financial technology adopted in the sector?	• % implementation of financial technology	• Financial technology operated by commercial banks	Status to be reviewed yearly

4.0 Domain 3: Service Availability & Readiness

4.1 Introduction

The Service Availability and Readiness domain focuses on understanding the building blocks for health system strengthening across health facilities. For a facility to be service-ready, it must have the standard health infrastructure and functional equipment, an appropriate number of skilled staff, and an adequate stock of the necessary drugs and consumables.

The diagnostic review provides a frame for understanding service availability and readiness across the following components:

- *Assessing Service Availability & Distribution*
- *Assessing Service Coverage & Quality*
- *Assessing Infrastructure & Equipment Availability*
- *Assessing the Availability of Drugs and Commodities*
- *Assessing Demand from population levels, distribution, and need for services through Microplanning*
- *Assessing Client Satisfaction*

In examining the service readiness frames, a clear focus on understanding the process workflow for the operational data landscape was prioritized, identifying strengths, challenges, and opportunities within the existing institutional framework and understanding how actionable insights are generated to enhance the delivery of health services.

For example, in 2021, the state established the MSP Monitoring Team (MSPMT) under the KNSPHCMB to oversee the state's MSP implementation. The MSPMT conducted a facility readiness assessment across 271 of the 484 apex PHC facilities to establish a baseline for the commencement of the MSP implementation in the state.

Fifty-three (53%) had electricity, 55% had a delivery room, 53% had potable water, 69% had toilets, and 20% had a functional ambulance. The in-patient section in 51% of the facilities was in good condition. Four Facilities (8.3%) had a suggestion box.

Only 37.3% had adequate skilled health workers, and the health worker density was just 0.82/1000, as against the World Health Organization benchmark of 2.43/1000.

The SSHDP itemizes nine interventions supporting service availability and health infrastructure readiness. It also emphasizes improving the existing 484 apex facilities.

As part of the assessment's framing, the following existing studies, laws, and data products were reviewed to provide a situational context for the service readiness domain.

Domains	**Existing Study Materials for Desk Reviews**
Service Availability & Readiness	- *KNPHCMB Operational Guideline* - *Kano State Primary Healthcare Management Board Law* - *Minimum Standard for Primary Healthcare In Nigeria* - *Kano State Strategic Health Development Plan* - *KNPHCMB Regulations* - *State Sustainable Health Commodities Supply System Committee Operational Manual* - *The Revised Ward Health System Strategy: A Harmonized Framework* - *NHMIS Annual Report* - *HSCL-Kano State PHC Landscape Assessment* - *eHealth Kano State Primary Healthcare Monitoring and Evaluation Systems Report* - *DAI- Kano State PHC Management Capacity Assessment*

Upon completing the assessment and identifying gaps, the reviews also provide a look-forward plan, which entails developing stepwise process improvement plans to improve the capacity and capabilities of the service readiness frames in deriving actionable insights for the performance management strategy in Kano State.

From the FGD assessment, the subject matter experts graded a general score of 42%, indicating a maturing maturity gradient. The scoring components are provided below.

Summary Result from FGD/KII (Service Readiness)				
Assessment Area	**Weighting (%)**	**Actual Score**	**Percentage Score (%)**	**Growth Areas for Operational Data**
Service Availability & Distribution	13	5.4	**42%**	• Single state-owned repository required to maintain a comprehensive list of facilities and services offered. (NHFR provides snapshot of facilities) • Services are not disaggregated by type of facilities (Public, Private, etc) • Population, Burden of Disease Distribution or HRH Availability does not influence RMNCHN service availability.
Service Quality	9	6.9	**77%**	
Infrastructure & Equipment Availability	32.5	14.96	**46%**	• Several tools used for managing inventory for infrastructure and equipment. There is no comprehensive tool for managing inventory on infrastructure and equipment.
Availability of Drugs and Commodities	11.5	8.75	**76%**	
Demand Creation from Population and Micro Planning Lens	27	11.5	**43%**	• Need to build a master list of settlements for both RI and RMNCHN modules • Speed up the use of geo-enable microplans to further digitize the miroplanning process.
POI Mapping	7	4.5	**78%**	
Client Satisfaction	10	4.1	**41%**	• Expand other areas for determining client satisfaction beyond client exit interviews. Satisfaction surveys and state led household surveys can

				provide an indication on client satisfaction in addition to other non client facing tools like the knowledge and skills assessment tools..
Total Score (100%)	**100**	**56.11**	**56%**	

From the table above, there is a clear line of sight for generating insights for service readiness components across Service Quality(77%), Availability of Drugs and Commodities (76%), Demand Creation from Population and Micro Planning Lens (68%), and POI Mapping (78%).

Areas requiring improvements in optimizing operational data and collecting core indicators include Service Availability and distribution (42%), Infrastructure and equipment Availability (45%), and Client Satisfaction (41%).

Please note:

Subsequent engagements after the FGD revealed that the state actually does have a comprehensive list of the apex PHCs disaggregated by the kind of services available in each facility. This list was organized into a dashboard available on the KNSPHCMB website. https://ksphcmb.org/news/phcsal.php?page_no=2
Apart from services available, geo-coordinates via google maps are provided on the click of the 'take me there' button.
This information will positively affect the scoring provided in the FGD/KII summary above, providing a higher score for the State.

4.1.2 Governance & Institutional Assessment for MDAs within the Service Availability & Readiness Frame

4.1.2.1 Assessment (Desk Review) of the Legal Framework & Institutional Structures for SARA Frames

The service readiness assessment is benchmarked by the Minimum Service Package (MSP), which focuses on addressing issues of infrastructure, equipment, and service availability through the domestication of the MSP regulations known as the "PHC Operational Guidelines (2012)."

The state also integrates national guidelines from the NPHCDA, such as (1) Standards and Regulatory Framework for PHC practice in Nigeria and (2) Revised Ward Health System Scheme, classifying facilities into health outreach post and PHC (Level 1, Level 2, and Level 3) centers based on the complement of services available.

The SMOH and SPCHMB are key vehicles majorly involved in service availability and readiness assessment at both facility, LGA, Zonal, and State levels, as shown in the table below:

Component	**Institutional Structures**	**MDAs/LGAs/Others**
Infrastructure & Equipment	- MSP Monitoring Teams (MSPMT) - Sustainable Health Commodities Supply Scheme (SHCSS) - Integrated Supportive Supervision (ISS) - Quality of Care Unit (QoC) - BHCPF Quality Assessment Measures (QAM)	SMOH KANSPHCMB KSCHMA HMB DMCSA LGAs COMMUNITY STRUCTURES HEALTH FACILITIES
Service Coverage & Quality	- NHMIS/DHIS2 - BHCPF Quality Assessment Measures (QAM) - RMCHA+N TWGs	KANSPHCMB LGAs FACILITIES
Service Availability &	- Integrated Supportive	KANSPHCMB

Distribution	Supervision (ISS)	LGAs FACILITIES
Availability of Drugs and Commodities	- DRF - Essential Medicines	KANSPHCMB DMCSA LGAs HEALTH FACILITIES
Demand Creation from Population and Micro Planning Lens	- REW Microplans	KANSPHCMB LGAs COMMUNITY STRUCTURES HEALTH FACILITIES
Client Satisfaction	- Integrated Supportive Supervision (ISS) - Client Satisfaction Surveys	KANSPHCMB LGAs COMMUNITY STRUCTURES HEALTH FACILITIES

4.1.2.2 Institutional Arrangements: Organogram & Organizational Chart of MDAs related to SARA Frames

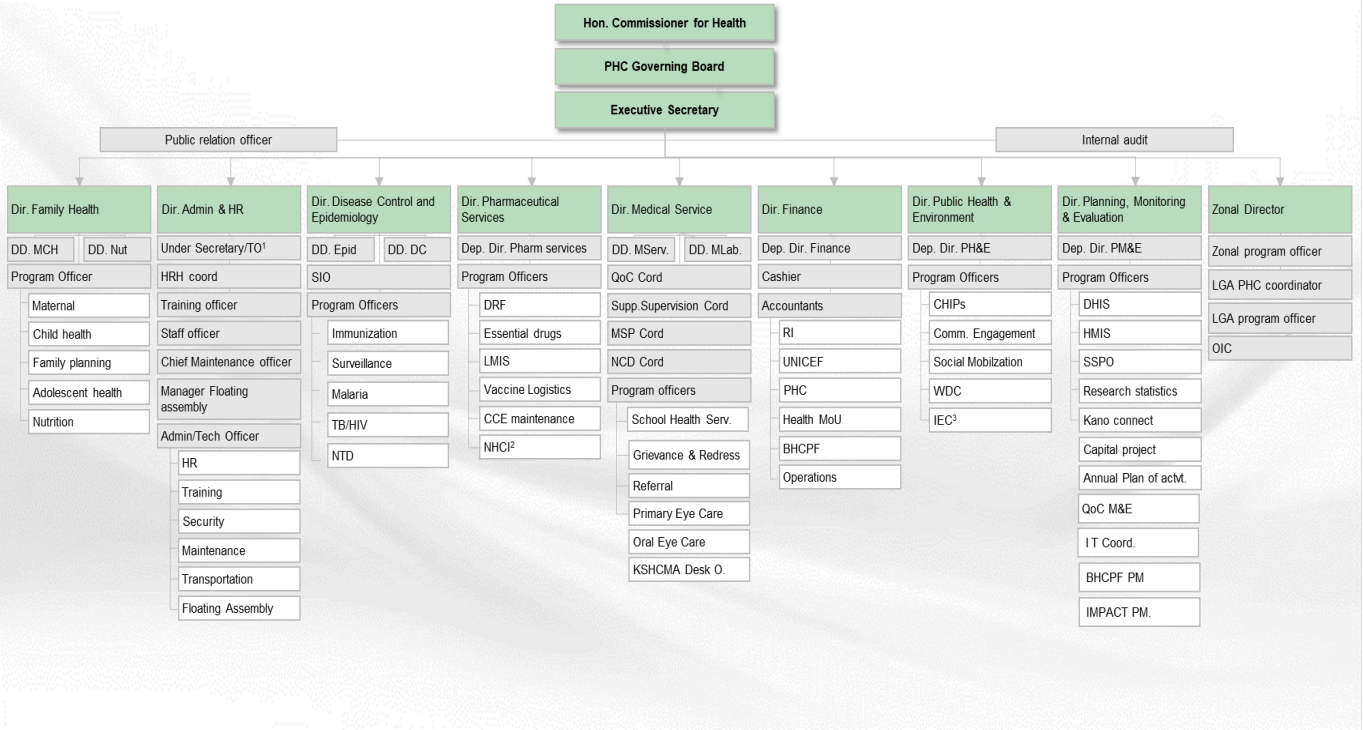
The main stakeholders in assessing service readiness frames in the state are (1) SMOH and (2) SPHCMB. The diagnostic review focused on SPHCMB's institutional arrangement to understand data flows and performance management reporting from the perspective of an organization tasked with primary healthcare management.

Insights from primary healthcare are leveraged for health policy at the ministry level. Regarding service readiness, the organizational structure is provided from a functional service availability and readiness lens, both macro (state lens) and micro (facility lens).

4.1.2.2.1 Horizontal (SPHCMB) Lens relating to Service Readiness Frames

JOB DESCRIPTION

The SPHCMB organogram has been updated to match the state's current realities

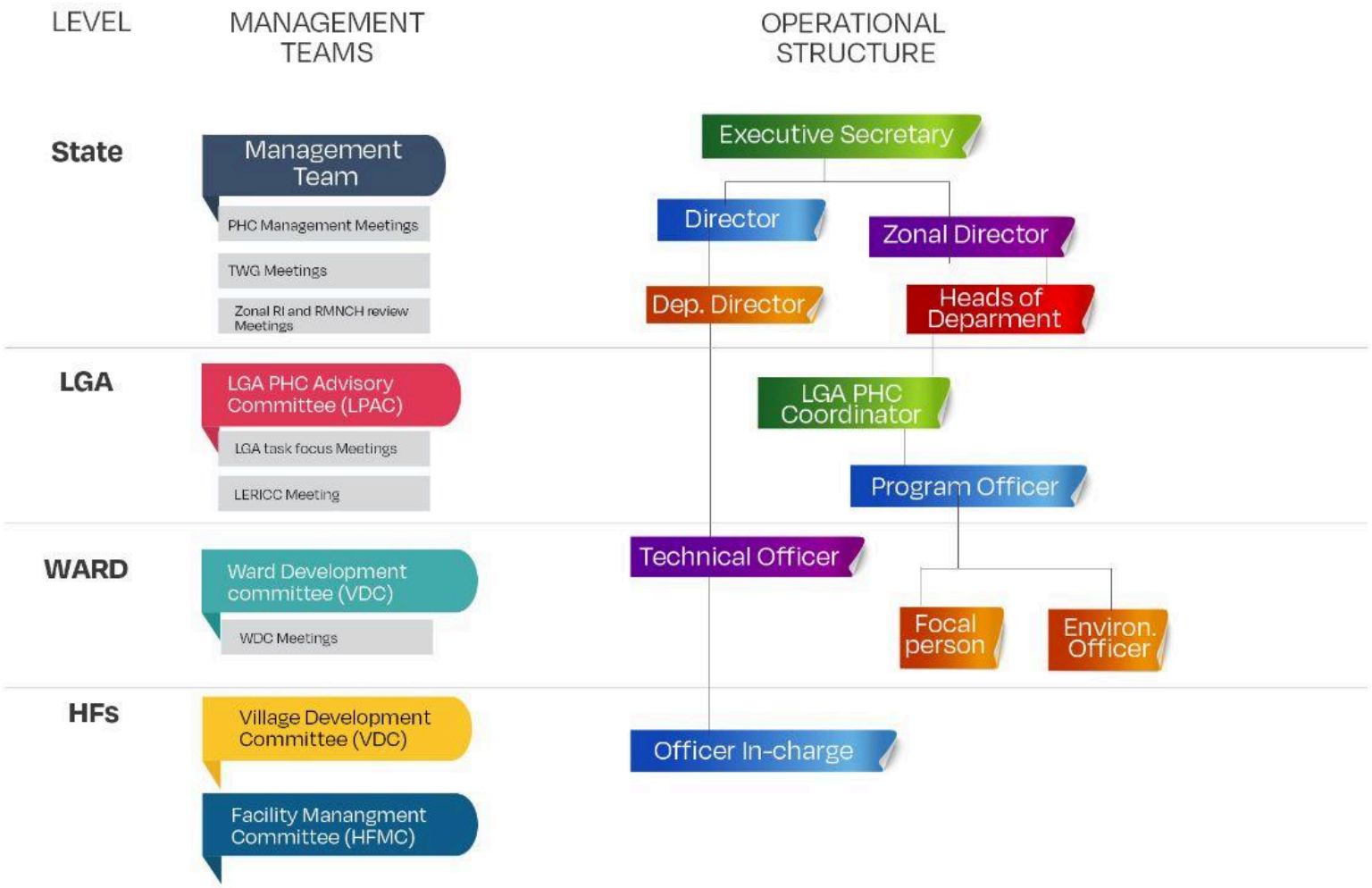


1 - Transport officer; 2 – National Hypertension Control Initiative; 3 – Information Education Communication

Source: Desk reviews; KIIs of stakeholders; Team analysis

1

4.1.2.2.2 Horizontal (SPHCMB) Lens relating to Service Readiness Frames Vertical (Facility) Lens relating to Service Readiness Frames



4.1.2.2.3 Composition of Institutional Structure under Service Readiness Frames.

There are a number of committees involved in ensuring Service readiness and availability. These include:

1. **Equipment Sub-Committee under the Sustainable Health Commodities Supply Scheme (SHCSS)**

The Sub-committee shall consist of the following members

i. DMS SMOH –	Chairman
ii. DNS HMB -	Member
iii. DMS HMB -	Member
iv. DD&S DMCSA -	Member
v. DMS SPHCMB-	Member
vi. SHCSS FP SPHCMB –	Member
vii. SHCSS FP HMB -	Member
viii. IST Chairman –	Member
ix. Rep. Community –	Member
DPS SPHCMB –	Member/Secretary

Members of the Equipment subcommittee under the SHSCC

Other Subcommittees, such as the Monitoring & Evaluation, are responsible for monitoring and supervisory visits to health facilities, conducting spot checks, strengthening the MIS, and conducting other coordination meetings.

i. Ensure the Zonal M&Es(officers) conduct Monitoring and supervision visits to the zones and health facilities and report on SHCSS progress to the main committee.
ii. Conduct spot-checks
iii. Ensure health commodities management information systems (MIS) are reviewed, adopted/adapted, and promoted appropriately for the state.
iv. To ensure an annual audit of SHCSS activities at all levels.

v. To ensure the conduct of DRF quarterly review meetings at DMCSA, HMB, and SPHCMB.
vi. To coordinate the conduct of bi-annual statewide DRF analysis.
vii. Ensure tracking and documentation of all DRF mark-ups disbursement
viii. To co-opt any relevant person(s) for the discharge of its responsibilities, such co-opted person(s) ceases to be part of the committee upon completion of their contribution to the sub-committee

Roles and responsibilities of the Monitoring and Evaluation Committee of the State SSHCS

2. **Quality Improvement sub-committee, facility level**

The Sub-committee shall consist of the following members:

- Facility In-Charge
- Heads of the various units

The ToR for Quality Improvement sub-committee
1) To obtain and distribute SOPs for various service units in the facility
2)To monitor the various services units in the facility to ensure adherence to SOPs
3) To ensure availability and monitor functionality of equipment.
4) To advice the facility management on how to improve quality of care1

3. The Facility ICT Committee.

The Sub-committee consists of the following members

- Facility In-Charge
- Heads of the various units

The ToR for IPC sub-committee
1)To ensure availability of hand washing facilities
2) To conduct sensitization to facility staff on IPC.
3) To monitor IPC practices among health facility

4.1.2.3 Assessing the Component of the Service Readiness Frames through FGD/KII

The desk review report was further validated through focal group discussions and key informant interviews with stakeholders to understand the operational data landscape of service availability and readiness across the six weighting components.

A list of service indicators and markers was identified through this process to understand tools and platforms used to drive insight generation across the service readiness domain. The components are provided below:

4.1.2.3.1 Assessing Infrastructure & Equipment Availability and Functionality

The ISS Toolkit is the main gateway for collecting data on infrastructure and equipment availability and functionality. Consistent data generation and updates on infrastructure and equipment availability and functionality are primarily sourced **through the use of the ISS ODK tool and RI engagements** (mostly micro-planning attributes: geo coordinates, list of settlements, and accessibility of facilities).

Regarding operational data, KSPHCMB prioritizes 484 apex facilities, especially for generating a comprehensive list of infrastructure, equipment, and functionality status. Hitherto, the primary healthcare management board's inventory registers were managed locally by facilities and compiled at the board level. However, consistent updates to those registers at the board level were not provided. As such, There was no capability to track the functionality of facilities and equipment.

A centralized platform for keeping an accurate inventory of infrastructure and equipment was developed in the form of the Hospital Equipment and Fixed Asset Management System (HEFAMS). Subsumed in it are the pre-existing tools such as the Infrastructure Replacement Plan (IRP) and Inventory registers, providing a real time picture of the status in terms of availability and functionality of all infrastructure and equipment in the 484 apex facilities. While it is fully operational, it is yet to be launched and deployed for use in the facilities.

Other gateways used on a snapshot basis include the MSP Monitoring Team's Facility Assessment Tool and the BHCPF Quality Assessment Toolkits.

4.1.2.3.1.2 Measurement Markers for Assessing Infrastructure, Equipment Availability & Functionality

#	Measurement Markers	Implications	Status
1	A comprehensive list of infrastructure, equipment, and their functionality was difficult to obtain.	There is a clear pathway for tracking functionality of infrastructure and equipment through HEFAMS. However, the platform is yet to be launched and deployed for use. Other key data platforms like IRP and paper based inventory registers and MSP facility assessment tools are used at the facility level. Currently, it is difficult to get a comprehensive listing of infrastructure and equipment functionality status.	**Partial**
2	A well-defined Process exists for tracking facilities that are functional, decommissioned, and non-functional due to other factors (e.g., security)	A platform like the facility finder app exists to provide a snapshot listing of facilities by status. However, there is no business rule for regularly updating facilities to indicate their status over a period of time. Hence, the platform can be described as functional but not operational which does not give a near real time status of facilities.	**Partial**
3	The ISS process is used to track infrastructure, equipment availability,	An integrated ISS platform has been launched to track	**Yes**

	and functionality	infrastructure and equipment availability and functionality. This is hosted on the state server and provides control to the state to manage its data. Other platforms like RISS and other programmatic ISS still exist to drive supportive supervision.	
4	A detailed Health Facility Census has been conducted with extensive metadata on health facilities in the state (including Private and PPMVs) in the last five years.	There is a list of facilities, their geo-locations and the services they provide. This is what has been used to develop the 'facility finder app' for use. Also, the NPHCDA recently conducted a facility mapping exercise in the state as well. However, there is no health facility census conducted to provide an expanded frame for health facilities (including private facilities) for baseline setting, planning and management in the last 5 years.	**No**

4.1.2.3.2 Assessing Service Coverage & Quality

National mediums like the NHMIS are primarily used to assess service coverage and quality. Data on service coverage and quality are projected through community and facility-based reporting on DHIS2 to determine service coverage. All the RMCAH+N indicators are tracked on DHIS2, which provides the framework for assessing service coverage.

Utilization of service delivery data is generated from the PHC level through a paper-based system and transmitted to the LGA for entry into the DHIS2 for analysis and interventions. PHCs are tracked through their reporting rates on DHIS2.
Dashboards are used to track service delivery indicators.

For example, the RMNCAH+N scorecard is disaggregated by LGA level and service delivery indicators to review and implement corrective measures. Data from the LGA Insights are further divided by ward and facility levels to plan the required targeted interventions.

A Quality of care (QoC) strategy was developed at the facility level to track service quality through the QoC Assessment Checklist. Currently, SERIC has a different checklist from SEMCHIC, but the goal is to integrate both into a single tool for determining service quality at the facility level. The QoC assessment is done quarterly at the LGA level to identify Quality Improvement Plans (QIP) for BHCPF facilities using a QIP Dashboard. Some QoC tools used include ISS, mentorship visits, and spot checks.

There are no state-commissioned surveys to determine service quality, such as the General Household Survey; the state uses national perspectives (DHS) to determine service quality.

4.1.2.3.2.1 Measurement Markers for Assessing Service Coverage & Quality

#	Measurement Markers	Implications	Status
1	Service Coverage is primarily tracked using the NHMIS process through Monthly Summary Forms and the DHIS2	Service coverage and quality are reported through NHMIS and DHIS2 platforms. Kano State has good reporting rates as most facilities report on the DHIS2 and there is an automated (virtual) DQA process. There are **no implications** around service coverage as facility based reporting are consistently collected and quality assured through DHIS2.	**Yes**
2	A QoC strategy tracks service quality, and a comprehensive	The BHCPF Quality Assessment Tool provides a frame for	**Yes**

	tool, including a quality improvement plan, improves service quality. The QoC is done frequently, not only as a one-off exercise for BHCPF facilities.	tracking quality of care across the 484 apex facilities. A Quality Improvement Plan is in place through the BHCPF tool to track QoC and other improvements.	

4.1.2.3.3 Assessing Service Availability & Distribution

Kano State lists its facilities using the National Health Facility Registry (NHFR). However, it only provides a partial complement of services across all the facilities on the NHFR.

Service distribution is classified based on the RWHSS strategy, classifying facilities into the following categories and benchmarks:

#	**Classifications**	**Service Availability (Benchmark)**
1	**Outreach/Health Post**	- One Shift - ANC, Immunization Services
2	**PHC Level 1 (Minimum Pack)**	- No 24 H service - Maternal, New Born, and Child Health (including immunization) - IMCI, Nutrition - Screening for NCDs, CDs
3	**PHC Level 2 (Intermediate Pack)**	- 24H service with at least one midwife - All services in Level 1 are provided - BEmONC
4	**PHC Level 3 (Optimum Pack)**	- **APEX Facilities** - **24H service with at least 2 Midwives** - **All services in Level 2 are provided** - **Treatment of NCDs, CDs,** - **Outreaches to H2R** - **Referrals to General Hospitals.**

Only the 484 apex facilities have service availability mapping analysis. This service availability is obtained through the MSPMT which also informs the facility finder dashboard.

The facility finder app or the service availability spreadsheets need to be updated consistently to show service distribution across primary facilities on a near real time basis. The state uses the **Facility Finder App/dashboard, Spreadsheets (Microsoft Excel)** to update service availability for apex facilities and track the MSP related to service availability and distribution.

For example, regarding MSP tracking of service availability, 49 facilities were initially tracked and then expanded to 109. The goal is to ensure complete coverage of the 484 apex facilities as it relates to service availability and distribution.

Furthermore, ISS tracks service availability adapted from the national checklist through ODK. The ODK is hosted on eHA servers, aggregated, analyzed, and shared with the state for further analysis.

4.1.2.3.3.1 Measurement Markers for Assessing Service Availability & Distribution

#	Measurement Markers	Implications	Status
1	A comprehensive list of facilities exists through the NHFR or state-managed health facility data bank providing service mapping on facilities providing particular services	The state maintains a list of its facilities through the NHFR as a snapshot listing of facilities. However, there is delay in the approval at the national end in terms of listing and delisting of facilities. Currently, facility listings are managed through excel sheets and through platforms like the HRHMIS to determine facilities and their corresponding status.	**Partial**
2	Service availability is driven by RWSS strategy and influenced by population, disease burden, and HRH availability.	A tool called Facility Finder App provides a snapshot baseline of services delivered across facilities. However, service availability is not updated consistently.	**Partial**

4.1.2.3.4 Assessing Availability of Drugs and Commodities

Regarding the availability of drugs and commodities, there is a focus on tracking stock levels for essential medicines through the DRF framework and vaccines at the facility level through LOMIS to track monthly stocks, re-order levels, and delivery mechanisms for essential medicines and vaccine management.

DMCSA manages all drugs and consumables through the DRF (and other gateways) as the sole provider of drugs to facilities.

Data collection on stock counts and delivery is automated using LOMIS (used to be through SIRV and Inventory cards, payment receipts, and monthly stock takes) to determine consumption patterns at facility levels.

The state is transitioning to OpenLMIS for vaccine logistics, but plans are underway to integrate other components, such as essential medicines and dry commodities.

4.1.2.3.4.1 Measurement Markers for Assessing Availability of Drugs & Commodities

#	Measurement Markers	Implications	Status
1	Stock counts, requisitions, and consumption are digitized, providing a line of sight for tracking stocks, requisitions, and consumption of essential medicines and commodities and determining minimum re-order levels.	Potential exists for tracking stock availability and count at the facility levels through LOMIS. However, LOMIS is still at pilot stage and not fully operational. Requisitions are still done manually contributing to the increased lead times around delivery. The implications for the existing process include differing review periods with duplicative tools for requisitions across several program areas.	**Yes**

4.1.2.3.5 Assessing Demand Creation from Population and Microplanning Lens

Regarding Demand Creation from population estimation techniques and a microplanning lens, Kano State implements integrated microplanning during planning, implementation, and outreaches, especially during RI Intensification exercises.

A microplanning process is a bottom-up approach, starting with the facility and consolidating population estimation at the state level through the REW strategy. It is developed annually and reviewed quarterly to reevaluate population denominators.

In terms of population estimation, Kano State uses three population estimation techniques to determine accurate denominators: (a) NpopC population estimation, (b) Walkthrough Microcensus, and (c) Geospatial population estimation.

Using spreadsheets, microplans are developed with the following characteristics to drive demand creation and integrate community outreaches for service delivery, as shown below:

- POIs are collected through paper maps and ODK, mapped with geo-coordinates supported by eHealth4Africa. Facilities use these electronic maps during the microplanning process.

- The microplanning templates capture the distances between facilities, their catchment settlements, and referral centers. This information is used to determine hard-to-reach areas and plan outreaches based on WHO guidelines.

- Community structures, including WDCs, FHCs, VCMs, etc., are also mapped and included in the microplanning templates for identifying new settlements and populations.

4.1.2.3.5.1 Measurement Markers for Assessing Demand Creation from Population and Microplanning Lens

#	Measurement Markers	Implications	Status
1	Demand creation insights are generated through integrated microplans, developed annually, and reviewed quarterly. The microplanning templates provide insights into catchment settlements and population estimation.	Integrated micro planning is in place with development of microplanning done annually, reviews are handled quarterly and implementation is based on session plans and during RI Intensification exercises The opportunity for developing a harmonized master list of settlements is evolving and the digitization of the microplanning process will provide more accuracy around identifying missed settlements..	**Yes**
2	Demand generation datasets for community structures are in place and can be used to track home births and maternal mortality through CBHMIS or MPDSR.	Data Bank of community structures are still in manual formats and not centralized for ease of access. While the CBHMIS process is being piloted through ODK and DHIS2, the process is under review and can provide opportunity to understand demand side generation especially regarding health outcomes.	**Partial**

4.1.2.3.6 Assessing Client Satisfaction

The client satisfaction component focuses on measuring the extent to which clients are satisfied with the services delivered at the health facility and also focuses on understanding the extent of client-responsive feedback in improving service delivery.

Through the ISS, client satisfaction focuses on understanding the number of hours spent in the facility and the satisfaction level of service delivery. The client satisfaction survey is randomly sampled during the quarterly ISS visits and includes a

community survey component, which the planning department handles.

Findings from the client satisfaction survey are analyzed and disseminated to facilities as part of the Service Improvement Plan (SIP) to determine actions to be taken before the next quarterly ISS.

While the data from client satisfaction is not used for performance management, it is used for corrective actions at the facility levels to improve practices through "On the Job Capacity Building (OJCB)."

4.1.2.3.6.1 Measurement Markers for Assessing Client Satisfaction

#	Measurement Markers	Implications	Status
1	***Client satisfaction is achieved*** routinely through spot checks or supportive supervision to determine time spent and service delivery at the facility level. Clients are randomly interviewed to determine their satisfaction with health facilities and service delivery processes. Area of Improvement suggestions are shared with facilities and integrated into the next visit.	A client satisfaction ODK tool is in place to track service improvement and client ratings across facility level. Additional tools include mentoring tools and the use of the BHCPF assessment app to determine client satisfaction as part of the frame for corrective action on ISS visits.	**Yes**
2	More Client Satisfaction Toolkits, such as telepolling and a client satisfaction survey, are used to track service delivery and accessibility of health facilities.	There are no advanced client satisfaction tools like telepolling and citizen surveys in place to determine accessibility, service ratings and other longitudinal studies around service delivery. The implication is the use of routine tools provide a sample of client satisfaction without representative sampling that telepolling and client survey provides.	**No**

4.2 Operational Data & Archetypes

4.2.1 Understanding Operational Data used to generate Performance Management insights for SR at the State (macro) level

#	Components	Operational Data Archetypes	Frames	Type/Status	Description	Improvements?
1	**Infrastructure & Equipment Availability and Functionality**	ISS	State	Automated Active	An ODK Tool scripted through adaptation of the national checklist for supportive supervision. Data collection is automated and hosted on eHA servers. The analysis is done on eHA servers and shared with the state.	Only data collection has been digitized for the ISS process. The error workflow and dashboard implementation can be extended to make the tool available in real-time. A transition into the state servers is needed.
		Facility Assessment Tool (MSPMT)	State	Automated Active	Facility Assessment Tool implemented using paper to determine MSP requirements for 271 out of 484 apex facilities	The FAT tool can be integrated into ISS or through the HEFAMS platform to update equipment and infrastructure related to the MSP.
		Inventory Registry	State	Paper Forms Spreadsheet Active	Paper Based Inventory registry at the facility level. Some facilities have an asset registry on Excel sheets used to update inventory and its status.	While a physical copy of inventory assets exists at the facility level, it is important that they are transitioned to the HEFAMS platform.
		Inventory Replacement Plan	State	Paper forms, Active		

		Hospital Equipment and Fixed Asset Management System (HEFAMS)	State	Automated Inactive	Automated Assets Management Platform to track equipment and fixed assets across facilities in Kano. Currently operational, yet to be deployed.	The HEFAMS platform can provide a real-time view of the equipment and infrastructure at the facility level.
		BHCPF Quality Assessment Tool	National	Paper forms, Spreadsheets.Automated Active	This is a checklist to track the implementation of the quality improvement plan across 10 domain areas: Administrative Systems/Infrastructure, Financial Management, HR, Patient Care Management, MCH Services, Laboratory, Essential Drugs and Commodities, HMIS, Utilization and Clinical Outcomes, and Community Involvement.	BHCPF QAT can be integrated into a single repository dashboard to compare with ISS datasets and determine facility readiness.
		OpenLMIS	National	Automated Active	OpenLMIS is used for managing vaccine logistics and other commodities, ensuring a clear line of sight on supply chains and increasing accountability.	
5	**Demand Creation from Population and Microplanning Lens**	REW Microplanning Templates	State	Paper Based Active	Microplanning Templates adopt the REW strategy focusing on catchment settlements, distance to facilities, and outreach strategy for demand creation	Transition facilities to use geo-enabled microplans for the microplanning development and quarterly reviews.

					and service delivery at the community level	
6	**Client Satisfaction**	Client Satisfaction tool	State	Automated Active	An ODK Tool for randomly assessing how long it takes to access facilities and client satisfaction	Can be standardized to include other platforms like Telepolling and client satisfaction survey to determine accessibility of services.

4.3 Understanding the Process Review Flow of Operational Data.

The process review section provides a description of business rules and processes across the identified operational archetypes identified during the diagnostic review process as shown in the tables below:

1. Service Availability and Readiness

#	Component	Operational Data Archetype	Who Collects Data?	Usecase/Insight used from operational data	Business Rule	Detailed Link to Business Rule
1	**Infrastructure & Equipment Availability**	ISS	**ISS Team** - Directors - Zonal Technical Team - Program Officers	For quick resolution of challenges across facilities, facilitate identification of areas of improvement at the facility level around facility readiness, monitor quality of care and compare performance of facilities, LGAs and Zones.	1. Plan facility selection based on funding 2. Orientation and refresher training 3. Quarterly ISS visit to selected facilities 4. ODK data collection and OJCB by ISS Team 5. ISS data analysis and report 6. Feedback to facility and LGA team 7. Dissemination of ISS findings.	
		MSP Monitoring Tracking (MSPMT) Tool	**MSPM Program Manager and team** - M&E Desk Officer, - Logistics and Supply Desk Officer - Referral Desk Officer - Infrastructure Desk Officer, - Service Delivery Desk Officer - Community Engagement Desk Officer - Structure replicated at zonal and	Provide information on the status of all PHCs in terms of MSP implementation. Combination of paper and excel sheet to track inventory register.	1. Comprehensive assessment conducted by development partners 2. Data collected and linked to MSP dashboard 3. Quarterly analysis, validation and dissemination at state level 4. Facilities categorized and	

			LGA level		graded based on performance 5. Data is stored on Excel and copy shared with SPHCMB 6. Feedback to facility and action points are shared on whatsApp group	
		Inventory Registry	**Facility In Charge**	Provide information on the level of inventory in each facility and determine adequacy.	1. Update of inventory registry at the facility 2. Updates shared from facility to 3. Quarterly analysis, validation and dissemination at state level 4. Facilities categorized and graded based on performance 5. Data is stored on Excel and copy shared with SPHCMB 6. Feedback to facility and action points are shared on whatsApp group	
		Fixed Asset Registry	**Facility In Charge**	Paper based assets registry generated by Ministry of Finance to track physical equipment and infrastructure annually	1. State agencies are trained on completing the registers 2. Relevant staff populate the registers when new assets are procured 3. Fixed assets updated periodically 4. Registers are permanently kept at the facility.	
		Inventory Replacement Plan (IRP) tool	**Facility in charge** **LGA CCO**		1. LGA CCO takes full inventory of CCEs on receipt 2. Equipment added into the Inventory Register (CCIR) and	New Equipment 

					sent to Zonal CCO 3. Zonal CCO enter data on the IRP (Google Sheet) 4. Data is duplicated and used at national and CCEI state.	Existing Equipment 
		Hospital Equipment and Fixed Asset Management System (HEFAMS)	- State - Zonal Technical Team - Facility in Charge - WTOs	Digitized registry yet to be operational. Track availability, functionality and density of equipment, fixed assets and infrastructure in all PHCs.	No process flow defined	Nested Data Archytype 
2	**Service coverage and quality**	NHMIS	**PHC Staff**	Registry tools for tracking service utilization at facility level	1. LGA M&E officers requests for addition, deletion or update on HFs 2. PHC Coordinator recommend and forward to zone 3. Zonal M&E verify and forward to state HMIS 4. State forward s to national and uploaded into NHFR	
		BHPF Quality Assessment Tool (QAT)	**LGA Quality Improvement Team**	Track quality improvement plans for BHCPF facility especially relating to service coverage and funds utilization	1.The State BHCPF Team have a planning session for a quality assessment visit **<u>quarterly</u>** 2.VConduct quarterly QOC visits to BHCPF facilities in the state. 3.Data collection from the visit using QAT across domain areas 4..Data is analysed and insight	

					is generated using the dashboard 5..There is communication between the state steering committee and the National BHCPF team at the national level 6..Review findings and feedback. 7..Feedback is sent to the facility through the zone and LGA **Quarterly**	
		RISS	-State supervisors from the State Emergency Routine Immunization Coordination Centre (SERICC)	Use for presentation at the State Emergency Routine Immunization Coordination Centre (SERICC)	1. Monthly planning for itinerary development and validation at LGA and zonal level 2. State visits zonal cold store, select one LGA to visit and 2 facilities under the LGA 3.ODK tool used to track immunization readiness 4. RISS system analyses data 5. Feedback meeting for routine SERIC meeting.	
3	**Service Availability & Distribution**	NHFR	**LGA M&E** **LGA PHC Coordinator** **Zonal M&E** **State HMIS**	Electronic health facility registry that provide information on health facilities location and category(services)	1. State agencies are trained on completing the registers 2. Relevant staff populate the registers when new assets are procured 3. Fixed assets updated periodically 4. Registers are permanently kept at the facility.	

		Facility Finder App	ICT Officer	Automated Database for tracking service availability categorized by hours of service (24H), full complement of PHC Services, number of staffs	Public website with dashboard on the facility finder app.	Back-end data yet to be analysed and used for decision making
	Availability of Drugs and Commodities	LOMIS	Pharmacy Technician	A web and mobile platform to provide facilities with near real-time visibility of stock level and plan product deliveries and restocking of health facilities by automating ledger entry to capture quantity delivered	*See Supply Chain Domain*	*See Supply Chain Domain*
		OpenLMIS		OpenLMIS is used for managing vaccine logistics and other commodities, ensuring a clear line of sight on supply chains and increasing accountability.	1. Facility updates vaccine tally sheets and immunization tools on paper 2. Facilty record on vaccine ledger and vaccine utilization forms 3. Further compiled on Monthly vaccine summary forms and sent to LGA 4. LGA RI Officer uploads monthly summary forms on OpenLMIS.	
	Demand Creation from Population and Microplanning Lens	REW Microplanning Template	- Community representatives - PHC Staff	Used for population estimation at the community and catchment level for session plans, campaigns and in prioiritizing outreaches to underserved areas, hard to reach and security	1. State agrees on baseline population, target and strategy for LGAs and wards 2. LGAs, ward and RI officers agree on facility level targets 3.Ward focal persons and facility team develop microplan template and	

				compromised locations	update master list of settlements 4. Compiled and submitted to LGA by Ward Focal Persons 5. LGA compiles and submits to zonal office 6. Zonal compiles and submit to state 7. State conducts desk validation with LGA and ward focal persons 8. Bi annual review of microplans at all levels.	
	Client Satisfaction	Client Satisfaction Tool	- State Team	An ODK Tool for randomly assessing how long it takes to access facilities and client satisfaction	1. Planning meeting at state level to plan client exit interviews 2. Field meeting/operation to deploy client checklist 3. Data collected from the service delivery end using ODK 4. DPRS and team perform internal review from findings 5. Feedback sent to LGA and Facility for corrective actions	

4.3 Identifying Gaps & Opportunities for Improvements from the Desk Reviews, Landscape Assessment, and KIIs Validation Sessions for Service Readiness Frames

Having reviewed the operational data landscape across the SARA domain, it is clear that the ISS checklist is the main gateway for determining facility readiness regarding service availability and distribution. The NHMIS, DHIS2, and QoC strategy mainly drives service quality and coverage.

From a demand creation perspective, microplanning provides an understanding of community structures and outreaches that can improve service coverage and quality.

Other tools used for facility readiness include (a) Facility Assessment Tool, (b) PHCIS, and (c) BHCPF Quality Assessment Tool, which is used across varying frames to determine facility readiness.

There is an opportunity for significant improvements in the operational data landscape for (1) Service Availability & Distribution, (2) Infrastructure & Equipment Availability, and (3) Client Satisfaction. A gap opportunity Matrix is further provided below, identifying areas of improvement and step-wise approach to improvements.

4.3.1 Gaps-Opportunity Matrix

#	Components	Gaps	Opportunities for Improvement
	Infrastructure & Equipment Availability and Functionality	**SARAGP1:** The Infrastructure & Equipment availability and functionality is driven by the use of several tools ISS, MSP MT Facility Assessment Tool, Inventory Registry, Inventory Replacement Plan tool etc consistently. There are several tools used for tracking infrastructure and equipment, which may lead to redundancy as different teams are collecting status updates on the same component . The state has line of sight on some metrics for infrastructure and equipment availability mostly for the 484 apex facilities. Even these have not been updated regularly as there is no centralized platform for updating inventory of infrastructure and equipment. At the facility level, reporting is done through paper based inventory registries such as the fixed assets registry and inventory replacement plan. Reporting is not done regularly at facility level except on a needs basis. The ISS & MSPMT provides a credible and consistent frame for tracking infrastructure	The state should prioritize launching a **health facility census to provide a comprehensive listing of all facilities including their infrastructure, services and equipment availability as an initial baseline**. This should be digitized to develop the Health Facility Analytics Reporting Platform to serve as a baseline for tracking status of infrastructure and equipment. Furthermore, the **State should expedite the operationalization of the Hospital Equipment and Fixed Asset Management System (HEFAMS) to provide a near real time snapshot on functionality of infrastructure and equipment.** While the component of data collection has been digitized on ISS using ODK. **The state needs to make the ISS platform real time with data quality assurance framework integrated into the ISS. The capacity for use of the ISS should be transferred to the state rather than hosted on partner infrastructure for sustainability and accessibility of historical insights.** **The HEFAMS dashboard should subsume all other current inventory management platforms such as the fixed asset registry, inventory registry etc to provide visibility on the status of infrastructure and equipment.**

		and equipment availability and functionality. However, ownership of the ISS is domiciled with a third party provider with a clear transition plan to state based server. **The State has developed the HEFAMS to solve this problem. However, the platform is not operational as at the time of the report.**	
	Service Availability & Distribution	**SARAGP2:** Only 484 apex facilities have a consistent data frame for tracking service availability through MSPMT use of FAT tool. The tracking of service availability and distribution is benchmarked against MSP using spreadsheet (Excel) tool. Furthermore, RISS ODK has components of service availability hosted on eHA servers. The e-ISS is currently under development and will be hosted on the state server. The NHFR is a national tracking status of facilities for reporting under the DHIS2 platform. There is delay in approval of updated status of facilities which limits visibility of functional facilities.	There is a need to **include Service Availability Mapping (SAM) checklist into ISS ODK** to provide detailed modules around service availability and distribution. While the component of data collection has been digitized on ISS using ODK. **The state needs to extend functionality to provide near real time reporting and data quality control. This capacity should be transferred to the state rather than hosted on partner infrastructure for sustainability and accessibility of historical insights from the ISS.** Consider harmonizing all tools including MSPMT tool, mentoring tool, BHCPF assessment app and ISS into a single tool for facility monitoring.
	Service Coverage & Quality	**SARAGP3:** The state has the mix of tools to measure service coverage and quality through DHIS2 to determine service	**Insights from service coverage and quality metrics can be integrated into HEFA-like platforms to have a uniform line of sight for comparing service coverage**

		coverage, RMNCAH+N scorecards computation to determine RMNCAH+N service indicators from an LGA performance lens. QIP tool with a checklist of quality assessment on the QIP Dashboard. These are foundational elements to drive tracking of health outcomes. However, the state is yet to commission a General Household Survey to provide a disaggregated look through of health outcomes at LGA level relying mostly on the DHS for state aggregated view of performance. Secondly, the state does not have components of environmental health , WASH and NCDs captured to track coverage and quality.	**indicators** with other components like infrastructure, equipment functionality etc. **General Household Survey can be scheduled to provide disaggregated views on health outcomes** from an LGA lens. Data from environmental health needs to be integrated to provide line of sight for WASH, NCDs and other environmental health factors.
	Availability of Drugs & Commodities	**SARAGP4:** LOMIS is used at the facility level to track stock levels for essential medicines through the DRF framework. While LOMIS is active, the response rates in terms of usage at facility level is low. The state is transitioning to the use of OpenLMIS for majorly tracking vaccines with the hope for integration (for both essential medicines and vaccines).	LOMIS is hosted as a third party tool for tracking stock levels for essential medicines through the DRF framework at facility level. The platform is functional but not operational. **A plan for ownership and sustainability needs to be put in place to drive use and uptake by the state and increase the number of facilities using LOMIS for stock counts and reordering and tracking of delivery**. Secondly, the introduction of **OpenLMIS (national tool) has provided a gateway for stock tracking of vaccine** utilization and stock counts. **It is important to integrate**

			reporting between LOMIS and OpenLMIS for both essential medicines and vaccines. Also, **a single repository dashboard for analyzing this multiple data sources will provide the required line of sight around understanding consumption and requisition patterns** at the facility level.
	Demand Creation from Population and Microplanning Lens	**SARAGP5:** Currently, the microplanning process is largely semi automated with spreadsheet (Excel) through integrated microplanning (during planning, implementation and outreaches). A pilot framework for geo-enabled microplanning for digital maps to improve population estimation and identify outreach strategy based on WHO guidelines.	It is important to **scale up the geo-enabled microplanning framework for integrated microplans that focuses on connecting microplanning templates, operational data and other frameworks such as the use of CBHMIS and MPDSR.**
	Client Satisfaction	**SARAGP7:** Through the ISS, client satisfaction focuses on understanding the number of hours spent in the facility and the satisfaction level of service delivery. The client satisfaction survey is randomly sampled during the quarterly ISS visits and includes a community survey component, which the planning department handles. Findings from the client satisfaction survey are analyzed and disseminated to facilities	While the data from client satisfaction is not used for performance management, it is used for corrective actions at the facility levels to improve practices through "On the Job Capacity Building (OJCB). The **ISS ODK can be standardized to include other platforms like Telepolling and client satisfaction survey to determine accessibility of services**.

		as part of the Service Improvement Plan (SIP) to determine actions to be taken before the next quarterly ISS.	
	Environmental Health	**SARAGP8:** There is no line of sights for environmental health data especially for WASH, NCD	There is a need to have a mapping of mandates across MDAs involved in environmental health and sanitation. Will be done with the view to identify the purview under the PHCB and develop a data system that will be merged into the comprehensive PHC data.

4.3.2 Process Improvement Plan

The process improvement plan provides a stepwise approach for improving operational data visibility to connect with the State and BMGF performance strategies. In this regard, we plan a phase improvement plan into the quick wins, medium-term, and long-term strategy to increase the visibility of reporting indicators across the input to outcome continuums as shown below:

Quick Wins

SARAIP1: Prioritize the launching of Health Facility Census to provide a comprehensive listing of all facilities including infrastructure, services and equipment availability as initial baseline.

A health facility census should be launched to provide a comprehensive listing of facilities as an initial baseline of all facilities in Kano State. An inclusive sampling frame for health facilities should include public and private facilities including PPMVs.

The health facility census will provide a holistic line of sight on the state of infrastructure, equipment, services and facility readiness baselines for ongoing tracking beyond service availability and location as currently obtained in the facility finder.

SARAIP2: Implement a Health Facility Analytics Dashboard to provide near real time snapshot on functionality of infrastructure and equipment.

Develop a Health Facility Analytics Dashboard to curate initial baseline for facility readiness and provide a frame for pipelining additional operational data from ISS and facility assessment tool to track and update the state of facility readiness.

SARAIP3: Plan for ownership and sustainability for home grown LOMIS platform to drive use and uptake across facilities. This includes implementing a single repository dashboard for analyzing consumption and requisition patterns

LOMIS is mostly used at the facility level for reporting stock counts and requisitions for essential medicines while OpenLMIS is used for stock tracking and vaccine

utilization for vaccines. It is important to create a single repository dashboard for tracking consumption and requisition patterns at facility level for use and uptake.

Medium Term

SARAIP4: Operationalize the Hospital Equipment and Fixed Asset Management System (HEFAMS)

There is a need to operationalize the HEFAMS platform since operational guidelines and SOP have already been put in place to drive the implementation of the single window platform for updating inventory records and functionality status.

SARAIP5: Expand the ISS Checklist to include Service Availability Mapping (SAM) into the ODK tool

Expand and match the current ISS Checklist to include components of SAM as part of the process for tracking service availability and distribution across primary facilities

SARAIP6: Expand the ISS ODK tool into a fully integrated e-ISS platform with error workflow management and reporting visualization

There is a need to expand the ISS ODK from a data collection tool, to an end to end data platform that manages the quality of ISS exercise through error workflow management and automates the computation of ISS scores through a single window.

More importantly, plan a strategy for migrating the hosting of the ISS from partner infrastructure to a state infrastructure to enhance control, sustainability and accessibility of historical insights from the ISS.

SARAIP7: Operationalize and scale the use of geo-enabled microplanning toolkit to generate demand level insights.

Digitizing the geo-enabled microplan provides opportunity to understand factors driving demand creation at community level and planning out outreaches and service delivery to hard to reach areas. The existing Geo-St4r investment needs to scale to a level of generating consistent data streams for operational data.

Long Term

HCFIP3: Explore Client Satisfaction tools like Telepolling and Client Satisfaction Surveys Interviews to determine accessibility, knowledge and satisfaction levels for health facilities

Telepolling and Client Satisfaction Surveys will generate additional insights on determining the accessibility and satisfaction level of clients for service availability and mapping.

4.5 Field Assessment of Process for SR Operational Data

4.5.1 Overview & Rationale for Field Assessment of 44 PHCs

The field assessment across the 44 PHCs focused on core modules around service availability, composition of human resourcing and mode of HRH reporting, Infrastructure and equipment status, including functionality and inventory management.

Furthermore, the assessment tries to understand community-level data collection, outreach services, and interactions with community structures to achieve SARA objectives at the facility level.

4.5.2 Understudy of Data Collection & Reporting Platforms for Service Availability

Regarding service availability, **48% (21)** of facilities reported providing 24-hour services. Out of these **21** facilities provided 24H service, **48%(10)** reported having the required staff present, while **52% (11)** indicated otherwise.

Furthermore, **86%(38)** of facilities keep patients for observation. The majority of facilities **(98%)** have mechanisms in place for tracking available services. All the facilities report on the services provided on a **monthly** basis to the LGA using **paper** forms.

4.5.2.1 Understudy of MIcroplans

Regarding microplaning, 95%(42) of the facilities developed microplans focused integrated services and the 5%(2) of the facilities have campaign-specific microplans. In terms of the frequency of developing microplans, **48%** of facilities do so quarterly, **36%** bi-annually, and **16%** annually.

59% of facilities review their plans quarterly, **27%** review every six months, and **11%** annually. One facility reviews their plan when need arises. All facilities use paper as the tool for developing microplans.

4.5.3 Understanding of Quality of Care

Majority of facilities receive supervisory visits through mentoring visits, ISS and spot checks. The ISS exercise is the main gateway for supervisory and On the Job Capacity Building (OJCB). **39** facilities report having ISS visits, out of which **74%** of facilities reported ISS visits on a quarterly basis. 15.38% of facilities receive monthly visits.

4.5.3.1 Mentorship Visits

35 facilities reported having mentorship visits out of which **77%(27)** of facilities reported the visits on a quarterly basis and **11%(4)** of facilities receive monthly visits while 9%(3) of the facilities have mentorship visits at any moment.

4.5.3.2 Spot Checks

29 facilities report having spot check visits, out of which **69%** of facilities reported having visits on a quarterly basis, **10%** of facilities receive monthly visits, **3%** receive weekly visits and **6%** receive biannually.

4.5.3.3 Program Level Supportive Supervision

33 facilities report having PLSS visits, out of which **76%** of facilities reported having the visits on a quarterly basis, **12%** of facilities reported receiving PLSS either monthly or at any moment.

4.5.4 *Infrastructure and Equipment*

In terms of status and functionality of infrastructure and equipment, **70%(31)** of facilities reported having an Infrastructure Status Reports (ISR). **30%(13)** of facilities reported not having ISR.

Out of the **31** facilities that have the infrastructure status report, **39%** of the facilities update the report on a quarterly basis, while **13%** update annually and 16% do monthly updates. Additionally, **29%** update when need arises. **93%** of facilities report that the OIC is responsible for updating the report on infrastructure and equipment.

Out of the 44 assessed facilities, only 20% report having functional computers, and 80% of facilities lacking functional computers. Similarly, 16% (5) of facilities reporting having

a **basic phone** , leaving 84% do not even have a phone. The % facilities reported to be using the phone for referral service via text message.

4.5.5 Community Level Data

The assessment indicates a strong presence of outreach services, with 95% of facilities conducting outreach services. Regarding data collection tools, **98%** utilize HMIS tools, while **2%** use partner tools for data capture during outreach activities.

Furthermore, **all** assessed facilities report interacting with community structures, demonstrating a proactive approach to engaging with local communities to enhance healthcare delivery and community involvement in health initiatives.

All the facilities indicated that community structures share to the facility and the data sent by the community is reported to the LGA on a monthly basis.

4.5.6 Aligning Facility-based Reporting to State-Level Reporting: Assessment

As part of the framing for understanding operational data flows between facility level and state level tools for aggregation and reporting on service availability and readiness, this section of the report tries to model the data flow process and map out how facility level reporting tools are transmitted into state reporting forms for evidence based decision making.

Component	***Facility Level Tools***	***State/National Level Tools***
Infrastructure & Equipment Availability and Functionality	★ *Inventory Registry (Fixed Asset Registry)* ★ *Inventory Status Report*	★ *ISS* ★ *MSP MT Facility Assessment Tool* ★ *BHCPF Quality Assessment Tool*
Service Availability & Distribution	★ *Spreadsheet* ★ *Facility Finder*	★ ISS ★ *NHFR* ★ *Facility Finder*
Service Quality & Coverage	★ *NHMIS Tools*	★ DHIS2

Availability of Drugs & Commodities	★ *BHCPF Quality Assessment Tool*	★ *LOMIS* ★ *OpenLMIS* ★ *NHLMIS*
Demand Creation from Population and Microplanning Lens	★ *Paper Based REW Microplanning Template*	★ *Spreadsheet*
Client Satisfaction	★ *N/A*	★ *Client Satisfaction Tool*

4.6.1 Performance Management Mapping for Service Readiness Operational Data

The Performance management mapping provides an assessment of the performance questions that can be answered through operational data especially as defined through the SSHDP and partners strategic outcomes and visioning documentation.

As part of the implementation of the performance management mapping, a 2-Day workshop was planned focused on understanding how existing operational data answer performance measures across the SSHDP and several bodies of work.

Regarding the Infrastructure and Equipment functionality, service availability and distribution components, there are many data tools used in answering similar service readiness performance questions which provide varying results and no common source of truth around the true state of facility readiness. For example, In understanding how many PHCs have been upgraded or decommissioned? Different tools such as ISS, MSPMT FAT Tool and BHCPF Assessment Tool can provide different estimates based on the different review periods.

For Demand Creation from population and microplanning lens, performance can be generated from Facility Geomapping, Geospatial Microplanning Toolkit (GMT), ISS, BHCPF Tool and Microplanning Template.

While the client satisfaction tool provides insights on client satisfaction, accessibility to health facilities and the need for services from the demand side as shown in the table below:

Components	Performance Measures	Indicative Performance Indicators	Data Source	Frequency
Infrastructure & Equipment Availability and Functionality	How many PHC centers have been upgraded in line with the MSP guidelines(facility renovation, power supply, toilets and water amenities, equipment etc ?	• Proportion of HFs renovated or rebuilt in line with MSP plan • Proportion of HFs with functional electricity source (grid or alternative source) • Proportion of HFs with functional water systems (tubewell, borehole piped into facility) • Proportion of HFs with availability of Toilets	RISS ISS MSPMT IRP	Quarterly Monthly & Quarterly Quarterly Need basis
	How many facilities have been decommissioned?	• Number of HFs decommissioned	NHFR	Need basis
	Are buildings and equipment functioning?	• Proportion of HFs with basic equipment for RMNCHN and FP Services • Proportion of HFs with waste management equipment	ISS MSPMT FAT BHCPF Tool	Quarterly Quarterly Quarterly
Service Availability & Distribution	How many apex PHCs currently implement minimum service packages (MSP)?	• Proportion of PHCs implementing more than 70% of MSP requirements	ISS MSPMT FAT BHCPF Tool	Monthly & Quarterly Quarterly Quarterly
	What is the level of implementation of MSP in the facilities?	• Proportion of PHCs implementing more than 70% of MSP requirements	ISS MSPMT FAT BHCPF Tool	Monthly & Quarterly Quarterly Quarterly
	What is the number of PHC facilities by type against plan?	• Number of HFs disaggregated by Type	ISS MSPMT FAT	Monthly & Quarterly Quarterly

			BHCPF Tool	Quarterly
	Which services are available across PHCs?	• Proportion of HFs providing ANC/FP/PPFP services • Proportion of HFs providing PNC and child health services • Proportion of HFs providing RI and U5 Immunization services	ISS MSPMT FAT BHCPF Tool Facility Finder	Monthly & Quarterly Quarterly Quarterly Needs basis
	Where are services located?	• Proportion of HFs providing ANC/FP/PPFP services by location • Proportion of HFs providing PNC and child health services by location • Proportion of HFs providing RI and U5 Immunization services by location	ISS MSPMT FAT Facility Finder	Monthly & Quarterly Quarterly Needs basis
	What percentage of population is covered by the service	• Proportion of population covered by ANC/FP/PPFP services • Proportion of population covered by PNC and child health services by location • Proportion of population covered by RI and U5 Immunization services by location	DHIS2	Monthly
	How many facilities are providing 24H services?	• Number of HFs providing 24hr services	ISS MSPMT FAT BHCPF Tool Facility Finder	Monthly & Quarterly Quarterly Quarterly Needs basis
	How many HFs providing RMNCHN services have adequate client flow?	• Number of HFs with health worker density of nurses/midwives	DHIS2	Monthly

		more than 2.3 per 1,000 offering RMNCHN services		
Demand Creation from Population and Microplanning Lens	How many apex facilities have functional WDCs?	• Number of PHCs with functional WDCs	ISS BHCPF Tool PHC Mentoring Tool	Monthly & Quarterly Quarterly Quarterly Quarterly
	How many LGAs have functional PHC management committees?	• Number of LGAs with functional PHC management committees	PHC Mgt Committee Report	Monthly
	Are facilities in the right place relative to population needs?	• Burden of Disease Distribution	Facility Geo Mapping Tool Microplanning Template	Quarterly Quarterly review with annual development
	Geospatial map for pop/vulnerability/need & percent of population in need that can access desired service within proximity to facility or via community?	• % of population with access desired services within HFs	Facility Geo Mapping Tool Microplanning Template	Quarterly Quarterly review with annual development
	Access barriers of distance or convenience?	• Number of Hard to Reach/Missed Settlements	Microplanning Template	Quarterly review with annual development
	Is there a birth or death list to track services against CRVS	• Number of Home Births in community • Number of Maternal Deaths in the community	CBHMIS DHIS2	Monthly Monthly
	Do people come for PHC services (e.g., vaccines, ANC, delivery, other indicators)?	• Number of clients accessing PHCs services	DHIS2 CBHMIS	Monthly Monthly

Client Satisfaction	Do people understand their need for services?	• Number of informed clients accessing PHCs services	Client Satisfaction Tool	Quarterly
	Do they know facility locations, hours, and services offered?	• Number of informed clients accessing PHCs services	Client Satisfaction Tool	Quarterly
	How accessible are facilities?	• Catchment areas of HFs covered by 2KM -5KM radius	Client Satisfaction Tool	Quarterly
	How satisfied are people with the services at the Facility?	• Citizen Perception Score of HFs	Client Satisfaction Tool	Quarterly

5.0 Domain 4: Data Management: Institutional Assessment of Kano Bureau of Statistics

5.1 Introduction

The Data Management Domain focuses on assessing the institutional readiness of the Bureau as it relates to its capability to manage operational and population-based data, serving as a data warehouse for the health sector across the four domains *(Human Resources for Health (HRH), Healthcare Financing (HCF), Supply Chain Management(SCM), Service Availability & Readiness (SARA)*. The data management assessment of the Diagnostic Review uses the Statistical Capacity Indicator (SCI) model developed by the World Bank.

Furthermore, a Statistical Evaluation and Progress Tool (STEP) was deployed as shown below:

STEP Assessment Toolkit

A - Strategy & Leadership			
#	**Components**	**Thematic Areas**	**Questions**
A.1	Defined Vision	Legal & Establishment Act	8
A.2	Governance & Leadership	Legal & Establishment Act	37
A.3	Management of Strategic Collaboration(s)	Institutional Arrangement	14
B - Capability Management			
B.1	Plan, Develop and Monitor for capacity improvements	Institutional Arrangement	6
B.2	Support for capability implementation	Stakeholder Management, Donor Engagement	1
C - Corporate Support			
C.1	Management of Business and	Operational Readiness	1

	Performance		
C.2	Management of Human Resources	Operational Readiness	12
C.3	Management of IT	Operational Readiness Competency & Skills Gap Assessment	7
C.4	Management of Statistical Methodology	Operational Readiness Competency & Skills Gap Assessment	7
C.5	Management of Information & Knowledge	Communication & Dissemination	6
C.6	Manage Data Consumers	Communication & Dissemination	4
C.7	Management of Data Suppliers	Operational Readiness	3
C.8	Management of Buildings and Physical Space	Operational Readiness	2
C.9	Management of Data Quality Assurance	Operational Readiness	2
D - General Statistical Business Process Model			4
Total			

As part of the assessment's framing, the following existing studies, laws, and data products were reviewed to provide a situational context for the Bureau's capability.

Domains	**Existing Study Materials for Desk Reviews**
Data Management	- *Kano State Bureau of Statistics Master Plan* - *Kano State Bureau of Statistics Law & Establishment Act* - *Kano State Bureau of Statistics Background History* - *Digest of Health Statistics 2020*

Upon completing the assessment and identifying gaps, the reviews also provide a look-forward plan, which entails developing stepwise process improvement plans to improve the capacity and capabilities of the Bureau to deliver data service to the health sector.

5.1.2 Governance & Institutional Assessment of the Kano Bureau of Statistics

5.1.2.1 Assessment (Desk Review) of the Legal Framework & Establishment Act of the Bureau

The Kano State Bureau of Statistics has an Establishment Act ("termed the State Statistical Act, Law No.2, 2014") that provides a strong foundation for developing an autonomous agency. The Bureau operates directly under the Governor's office and has clear budgetary funding, with a Statistician (Director) General serving as the Chief Executive and Accounting Officer.

The Establishment Act meets the minimum threshold for the United Nations Statistical System[1] to appoint a Chief Statistician who drives the State Statistical System and a governing board that drives the independence of the statistical system.

More importantly, the Establishment Act has defined the BoS's functions to include collecting data from businesses, households, and other MDAs while maintaining the confidentiality of individual records and using data for statistical purposes only.

Other supplemental materials reviewed include the Kano State Statistical Master Plan and the State Consultative Committee on Statistics to understand the governance structure for the Bureau, as shown in the table below.

5.1.2.2 Validating the Functional Status of the Establishment Act through Focus Group Discussion Sessions

While the Kano Bureau of Statistics has a well-defined establishment act, its functionality is in its early stages. The governance structures have been identified but are not in place to develop the Bureau. The operationalization of

[1] Handbook of Statistical Organisation – United Nations New York - 2003

the Act is still below the minimum thresholds to drive the bureau's capacity to deliver support for operational data within the health ecosystems.

Through the FGD Sessions, the Bureau scored 58% (Standardizing) within the institutional assessment frame. For example, only 2 of the 11 key requirements within the act have been fully operationalized, as shown in the key finding sections below.

It is important to note that the Bureau has kickstarted reforms from August 2023 and significant changes, especially regarding operationalizing the Establishment Act. Improving funding climate and training for the staff.

5.1.2.3 Measurement Markers for Assessing the Establishment Act & Legal Framework of the Bureau

#	Measurement Markers	Implications	Status
1	The Establishment Act defines the autonomous function of the Bureau, with its reporting line to the Executive Governor	The establishment act provides the foundational frame for determining an effective state statistical system. The autonomous nature of the bureau needs to be explicitly stated and operationalized in the act. The lack of autonomous framework defined in the establishment act can impact the quality of statistical data.	**Yes**
2	The Establishment Act provides for a representative board of more than 10 members, of which only 4 are political (<40%) appointments, with the other technical appointments	The composition of the board must comprise technical appointments from academia and industry practitioners and political appointments. Technical appointments should be more than the political appointments to drive independence of the bureau. The board should be free from political influence.	**Yes**

3	The Statistician-General is appointed directly by the Executive Governor with a fixed-tenured system	To achieve stability in the growth of the bureau, it is important thar the tenure of the SG is fixed tenured and not political appointment to secure the independence of the bureau and ensure that the tenure is not terminated at will of political actors without justifiable reasons.	**Partial**
4	The Establishment Act defines the funding of the Bureau from the Annual Budgetary Provision	The funding of the bureau should be directly from the budgetary line items and provide consistent funding for data operations in the bureau.	**Yes**
5	Has a clear mandate in its establishment act to compel MDAs to provide data as part of its operational oversight on data governance and representation	The bureau must serve as the official source of verifiable data and have the legal framework of enforcing MDAs to share administrative data with the bureau. Failure to achieve this will not make the bureau have central and operational oversight on data	**Yes**

5.1.2.4 Process Gaps Identified during the Legal & Institutional Assessment.

KF1.0 The Establishment Act provides a governance framework for building a data-centric agency. However, the operational framework for implementing the Act is not in place, and there is currently no functioning governing board to drive the Bureau's full independence.

While the Establishment Act drives the appointment of a Statistician-General and the setup of a governance board that reports directly to the governor's office, there is currently no functioning governing board to drive full independence of the Bureau.

The Bureau is undergoing improvements to perform its statutory functions through the Establishment Act. For example, a circular reemphasizing the Bureau as the sole authority for government data, data coordination, and management was shared from the SSG office. However, the governing board has yet to be inaugurated, and no board meetings have been conducted to date. There is a strong appetite to inaugurate and operationalize the board.

KF2.0 Improved Funding was achieved in 2024 despite several underfunding challenges reported by the Bureau in previous years. Funding is still not adequate to achieve significant scale.

The Bureau receives its funding from the annual budgetary provision, with a dedicated budgetary line item provided in the budget. The bureau has consistently been underfunded over the years. However, in 2024, the Bureau received an increased budgetary provision of N2 Billion, geared towards improving the development of data products. However, cash backing and utilization are very low, estimated at 37% Budget Utilization Rates (BUR) from August 2023 till date.

KF3.0 The State Consultative Committee on Statistics (SCCS) has just been formed or inaugurated at the state level. Hence, no active coordination mechanism exists between the Bureau and MDAs or LGAs. The main product delivered by the Bureau is the Statistical Yearbook (SYB)

Currently, the Bureau has no SCCS formed or inaugurated, even though the composition of the SCCS has been defined in the Establishment Act. The SCCS is a critical vehicle for data coordination between the Bureau and MDAs, especially regarding operational data for the health ecosystem.

NB: Post the completion of the report, We have now learnt that the SCCS has been formed with its first inaugural meeting completed

5.1.2.5 Assessing the Institutional Arrangement: Organogram and Organizational Chart of the Bureau

The Kano Bureau of Statistics has a fragile institutional arrangement, lacking clarity regarding individual departments' mandates among directors and staff. Presently, all departments solely engage in the collection of a System of Administrative Statistics (SAS). A maturity gradient score of 22% (Incubating) was assigned to progress

While this responsibility is typically designated for a specific department, the absence of robust activities, coupled with the lack of a corporate plan or functional system, has resulted in a situation where all Bureau staff, regardless of their department, are involved in only data collection for SAS. This operational inefficiency underscores the need for a more structured and clarified institutional framework.

Furthermore, the absence of a defined duty schedule for staff members and the lack of a corporate plan and statistical calendar impact the goal of achieving organizational coherence and strategic alignment.

5.1.2.5.1 Measurement Markers for Assessing the Institutional Arrangement: Organogram and Organizational Chart of the Bureau.

#	Measurement Markers	Implications	Status
1	The mandate of the Bureau is adequate and represents the required functional activities expected of a subnational Statistical Bureau.	Any statistical bureau must have the basic mandate of a state statistical system as an official handler of statistics in the state. Its mandate should include evidence of coordination of the state statistical system, good quality statistics according to internationally recognized standards, and make statistics readily accessible and usable by a range of data users.	**Yes**
2	A corporate plan is available to lay out the strategy and focus areas for data development and coordination in the state.	A 5 year corporate plan or State Statistical Master plan should be in place that defines strategic priorities and implementation plan for the activities of the bureau. The corporate plan should detail out institutional arrangements and thematic areas of focus for the bureau.	**No**
3	The functions and roles of departments in the bureau are sufficient to handle the range of functions envisaged in the organizational chart, especially around survey preparation and design and handling of operational data	The organizational structure and organogram should be detailed out showing the roles of each department and their corresponding units in handling both operational and population based datasets. The lack of a detailed organizational structure might lead to overlapping functions and concentration on data collection.	**No**
4	There are specific conditions of service and availability of a professional statistician cadre in	A professional statistical cadre exists in the scheme of service at the Head of Service providing	**No**

	the state.	progression and advancement within the statistical agency and department of planning, research and statistics across other MDAs. Failure to achieve this will lead to high attrition rate of professional statisticians and loss of institutional memory.	
5	There is the ability to hire the required staff and implement internal organizational structure without external interference	The bureau should have the ability to independently hire required staff as a semi autonomous agency with the right qualifications and as per needs and requirements of the bureau. The bureau should also be able to create a community of practice or data management user group to extend its capabilities beyond its current pool of staff. Failure to achieve this will lead to limited bandwidth and lack of institutional framework to sustain capacity for data management operations.	**No**

5.1.2.6 Process Gaps Identified During Institutional Arrangement Assessment

KF4.0 The Organizational Structure of the Bureau does not align with state statistical standards, as the structure of the departments is mainly geared toward data collection for the SYB.

The current organogram is not properly positioned to deliver population-based surveys and operational data archetypes. The current structure does not align with the organizational structure of a typically sized subnational statistical organization. The Bureau does not have a well-documented organizational chart but an illustrative depiction.

A comparison of the organizational structure of the Kano Bureau of Statistics and the Kaduna Bureau of Statistics in the diagram below shows areas of alignment

required by the Kano Bureau of Statistics to drive efficient management of both operational and population-based data:

KF5.0 The Functional Mapping of the Departmental Mandate of the Bureau needs to be aligned with the national statistical framework and UN Guidelines for Statistical Organization to drive effective operational and population-based data management for evidence-based decision-making.

The current mapping of departmental mandate can be strengthened to focus on more statistical operations other than the SYB, such as survey design and preparation, administrative statistics data, and operational data integration, particularly for the health ecosystem.

Furthermore, the lack of a structured framework at the local government level for statistical activities further compounds the challenges faced by the Bureau in effectively executing its mandate at the grassroots level.

The assessment of the departmental mandate is provided in the table below:

#	Department	Current Mandate	Is this Sufficient?	Implications
1	Admin & General Services	• Coordinate with all the departments for memos and correspondence management of other organization	**No**	Beyond correspondence management, also known as **Corporate Service Department** should handle all administrative aspect of the bureau including: - procurement & maintenance, - accounts & audit - human resource management - legal services
2	Real Sector & Economic Growth Statistics	• Responsible for conducting monthly CPI, collecting information on prices on commodities and food basket, including analysis	**No**	Beyond CPI, the real sector department is ideally merged with demography called **"Economic and Social Statistics" department.** The following are activities of the

3	Demography and Social Indicators	• Collaborate with other departments on SYB, Health and Education Digest, • Collect and Analyze information from population-based surveys and publication of newsletter	**No**	department • State Accounts • Economic Statistics • Social Statistics • Demography
4	Field Services, Methodology & Household Statistics	• Design of Templates and data collection instruments, field data collection • Supporting other department in SYB, organize the field officer and give them template	**No**	Beyond Field Service Methodology & Household Statistics, this department can be typically divided into 2 components. **"1. Research & Methodology** - Methodology Design - Research & Quality Assurance - Planning & Coordination - GIS **2. Census & Survey"** - Agriculture - Household - Establishment - Field Offices
5	ICT	• Data Archiving and Custodian of Data and any Statistical Tools for analysis and • Maintaining of the website and Internet	**No**	The ICT Department also has additional functions such as: - Data Bank - Network Services - Software Support - Analytics Support and Services

5.1.2.7 Assessing the Stakeholder Management & Donor Relationship as a Data Service Provider

The Stakeholder and Donor Engagement framework assesses the bureau around coordination, collaboration, networking and information sharing both horizontally across MDAs and vertically across LGAs of the state to enhance evidence-based planning.

The Kano Bureau of Statistics does not have a functional State Consultative Committee on Statistics (SCCS) as per the intent of the Establishment Act.

While UNICEF provided some engagements and funding for the implementation of the MICS exercise, the role of the Bureau was very limited to data collection, given its limited capacity for survey design and preparation. The funding was majorly utilized by consultants engaged by UNICEF to conduct the exercise

The lack of collaboration and engagement with external entities (development partners) undermines the Bureau's ability to leverage collective expertise and resources, ultimately impeding its capacity to generate comprehensive and reliable statistical data for informed decision-making.

Also, there were no active engagements between the Bureau and MDAs, especially for the State, Ministry of Health, SPHCB, KACHMA, DMCSA, etc., beyond data collection (supervision) for organization-specific data activities and engagement meetings.

NB: Post the completion of the report, We have now learnt that the Donor Engagement has increased as a policy of the bureau to attract collaboration with both MDAs and Donor Engagement Partners.

5.1.2.7.1. Measurement Markers for Assessing Stakeholder and Donor Engagement Framework of the Bureau.

#	Measurement Markers	Implications	Status
1	*There is the availability of a State Consultative Committee on Statistics (SCSS) to drive collaboration and horizontal and vertical coordination between data producers*	The SCCS is a coordination platform to drive the collection, analysis and dissemination of statistics across both MDAs and LGAs structure. The platform ensures that minimum data requirements are agreed for planning and policy making. The lack of operationalization of the SCCS will impact coordination and the development of a statistical calendar for the Bureau.	**Partial**
2	*There are effective coordination mechanisms between the Bureau & MDAs, with the Bureau providing data service data producer while other MDAs consume the data from the Bureau.*	Coordination mechanism between KSBS and other MDAs is majorly at operational level and not at strategy level. This will impact the positioning of the bureau as the one stop shop for data service for the government. Most activities are at the field level primarily for data collection purposes rather than statutory functions of the bureau.	**No**
3	There is a donor coordination framework and outreach strategy to engage development partners to support data effort	There is no detailed engagement with donors or development partners around core data support and services to the bureau. Most engagements with partners are primarily designed for validation purposes.	**No**

5.1.2.8 Process Gaps Identified during the Stakeholder Management and Donor Relationship

KF6.0 There is no structured engagement between the Bureau and MDAs/LGAs or between the Bureau and Donor Agencies. The engagement is, at best, procedural and focuses mainly on data collection or part of stakeholder engagement.

The engagement with stakeholders is majorly procedural, focusing mainly on data collection or representation in planning or dissemination activities. While the Bureau has engaged with partners like UNICEF to implement MICS, consultants mostly handled the engagement.

5.1.2.9 Assessing the Bureau's Communication & Data Dissemination Policy.

The communication and data dissemination policy of the Bureau is evolving. Through the STEP assessment, a score of 40% was achieved due to the (a) existence of a website (https://ksbs.ng) to disseminate and share findings from the SYB publications and (b) social media presence (particularly Facebook) as an additional dissemination pathway for the SYB.

However, it is also important to note that the bureau has no data bank for warehousing and assessing the details of its products. There are no plans for integrated dissemination of the bureau's products and publications. The measurement markers based on the STEP assessment are provided below:

5.1.2.9.1. Measurement Markers for Assessing Communication & Data Dissemination Policy of the Bureau.

#	Measurement Markers	Implications	Status
1	*There is a website for communicating activities and survey results and activities*	A website exists for informational updates for the bureau. However, there is a need to upgrade the website to serve as a document repository in addition to informational content service for the bureau.	**Yes**

2	*There is a presence of social media platforms (Facebook, Instagram, X, LinkedIn, etc.) for communicating the bureau's activities and work products.*	KSBS has an active presence on Facebook. However, there is a need to expand to all social media platforms and also develop an integrated communication strategy that shares work products at core decisional support points in the state such as the TWGs etc.	**Yes**
3	*There is a statistical calendar for disseminating surveys or administrative statistics for publication by the bureau.*	Currently, there is no defined statistical calendar for the data production effort at the bureau. There are no regular and determined dates for publications across economic and social statistics and other census and surveys deployed in the bureau.	**No**
4	*There is a Statistical Yearbook*	The bureau has capability for Education and Health Digest as part of the SYB. However, it is important to note the SYB was last produced in 2021. There is no recent publications of the SYB in the state.	**Yes**
5	*There is a donor coordination framework and outreach strategy for engaging development partners to support data generation effort*	There is no strategy on outreaching and engaging donor as part of the resource mobilization effort for data management. A corporate strategy will support the goal of crowd sourcing technical support to the bureau.	**No**
6	*There are dissemination events inviting stakeholders to launch work products.*	There are no documented dissemination events for stakeholder which limits the stakeholders for work products	**No**

5.1.2.10 Process Gaps Identified during the Communication & Dissemination Policy

KF7.0 There is progress around communication and dissemination of the bureau's work product through its website and Facebook platforms. However, there is room for improvement in the approach to integrated communication and standardization of the Bureau, especially as it relates to rebranding the Bureau and integrating additional elements for communicating its work products.

Significant progress has been achieved in communicating work products, especially on the bureau's website and Facebook channels. However, there are notable deficiencies observed in the bureau's communication strategy that require improvements to meet the standards of a data service provider. For example, the bureau will require standardized data bank platforms for accessibility and improved website and social media platforms to share its work products widely.

5.2 Operational Readiness of the Bureau as a Data Service Provider

The operational readiness assessment looks at the technical capabilities of the Bureau to deliver data service provision for both administrative statistics and population-based statistics. Also, it assesses the readiness and ability of the bureau to conduct surveys and census and implement a consistent statistical calendar across the data management value chain.

Furthermore, it assesses existing infrastructure and supporting platforms for delivering evidence-based data for decision-making, especially around computer-aided platforms for data collection, preparation, modeling, and visualization.

5.2.1 Assessment of the Technical Implementation: Survey, Census, and SAS Capabilities.

Since 2015, the Bureau has conducted very few surveys & census and focused more on its SAS functions through the production of SYB (latest published in 2021), especially the Health & Education Statistical Digest.

The survey conducted in 2015 was the General Household Survey. However, no evidence suggests that the survey was carried out, as no official report was produced. For the census, the bureau has participated in (a) Fulani Herdsmen Household Headcount in 2021 and (b) Geo mapping of Traditional Medicine Providers in collaboration with PHIMA in 2021.

In the last 2 years, no survey or census has been carried out in the bureau. Only SYB and CPI have been conducted as part of the reform process to rebuild the bureau to perform its statutory functions.

5.2.1.1 Measurement Markers for Assessing Technical Implementation: Survey, Census, and SAS Implementation

#	Measurement Markers	Implications	Status
1	*There are sufficient ICT Infrastructure and survey toolkits to enable digital collection and management of data through CAPI.*	There is no required software for data management operations which impedes any work for data management especially data cleaning, analysis and visualization.	**No**
2	*There is the capability to develop minimum data requirements for collecting administrative statistics from MDAs. The process is consistent, and MDAs share their statistical digest with the Bureau*	The bureau collects SAS data particularly from education. However, no minimum data requirements are mapped. The lack of minimum requirements impacts statistical representativeness and quality in collecting SAS data.	**Partial**
3	*Data auditing processes are adopted for improving data quality, including cleaning and preparing data quality assurance methods for all statistical operations in the Bureau.*	No quality assurance process ti improve data quality for statistical operations. This is a key instrument for achieving data service provision.	**No**
4	*The Bureau has phased out the use of*	The use of CAPI and digitized	**Yes**

	paper-based methods entirely in its statistical operations	methods for statistical operation will enhance data storage and archiving and further simplify analytics capabilities of the bureau.	
5	*There is evidence of coordination with key stakeholders, especially Tertiary Institutions, in the conduction of surveys, census, and other statistical operations*	Engagement with tertiary institutions in the conduction of surveys and census is a key gateway for broadening the bureau's capability and ensuring methodology standards as part of the pool for driving statistical operations in the state.	**No**
6	*There is the active use of GIS in the conduction of survey, census especially relating to sampling methods and use of GIS for improved methodology design*	Use of GIS ensures more accuracy in location and population sampling and estimation and allows for tracking of field teams during field operations to ensure proper coverage. The lack of a GIS unit in the bureau impacts the standardization of the bureau.	**No**

5.2.2 Process Gaps Identified during the Technical Implementation: Survey, Census & SAS Implementation

KF8.0 The Bureau has a moderate capability for SAS Implementation through the SYB and also through data collection using CAPI tools like Kobo Collect. However, there is a significant whitespace for expanding capability around survey design, preparation and implementation, census implementation, and implementation across the data management value chain.

The capability of the Bureau lies squarely in the compilation of SYB and data collection using Kobo Collect. There is a significant key man risk in the bureau around the scripting of data collection instruments. Surveys and Censuses implemented by the Bureau were largely managed by consultants, with no active participation of the bureau's staff in the data management exercise.

The lack of engagement has led to a significant loss of institutional memory and the build-up of knowledge management capabilities of the bureau.

KF8.0 There is no capacity across all data and survey management implementation facets, which indicates a deficiency in requisitive expertise to execute the mandates of the bureau effectively.

The technical capabilities and capacity of the bureau are below the required threshold for managing, planning, and implementing operational and population-based datasets.

5.2.3 Assessment of the Data Management Processes, including Storage and Archival Systems

The Bureau does not have a centralized storage system (physically and on the cloud) as data products are stored on individual systems or the website's cloud storage.

5.2.3.1. Measurement Markers for Assessing Data Management Processes, including Storage and Archival Systems

#	Measurement Markers	Implications	Status
1	*There are sufficient ICT Infrastructure and survey toolkits to enable digital collection and management of data through CAPI.*	The lack of centralized data bank and server room for centralized storage of the bureau's work product will impact institutionalization of the bureau, forcing work products to be shared on individual computer systems.	**No**
2	*There is a centralized storage and archival system for hosting the work products of the bureau for improved accessibility*		**No**
3	*There are adequate CAPI devices (tablets and mobile devices) for official use in data collection*	The lack of tablets or mobile phones for field operations will limit the quality of field operations and encourage paper based data collection tools which are outdated.	**No**

5.2.4 Process Gaps Identified during the Assessment of Data Management Processes including Storage and Archival Systems

KF9.0 The Bureau has no capacity and infrastructure for centralized storage and archiving of its work products. Currently, the bureau uses the website cloud server as centralized storage. This is unsuitable for a state statistical office and does not meet the minimum threshold for operationalizing the Establishment Act.

5.2.5 Assessment of the Infrastructure: Hardware Equipment & Software for Statistical Operations

Only 3 of 14 computer systems (desktops and laptops) were functioning during the FGD engagement sessions regarding computer systems. The desktop computers are outdated(use Windows 7) and can not be used for statistical operations.

However, Within the initial five months of the current leadership of the Bureau, between August and December 2023, there has been a significant improvement in the functionality of infrastructure and productivity across departments.

Notably, the leadership has invested in hardware upgrades by procuring 16 fairly used laptops for staff use. However, it is essential to address concerns raised by staff regarding the functionality and capacity of these laptops to ensure they meet the operational needs of the Bureau.

In addition to hardware upgrades, the leadership has demonstrated a commitment to supporting research and staff development by securing unlimited internet services. This move is crucial for facilitating research activities and enhancing the staff's capacity to access relevant information.

Furthermore, the leadership has proactively addressed power challenges by ensuring a constant power supply. The approval from His Excellency for the continuous provision of diesel for the generator indicates a commitment to overcoming electricity-related disruptions, contributing to a more stable working environment.

Regarding CAPI devices such as tablets and mobile phones, the bureau does not have official devices for data collection activities. Staff use their mobile phones for field operations.

There is insufficient applicable software to support statistical operations The table below shows the status of software availability in the Bureau.

5.2.6 Process Gaps Identified during the Assessment of Data Management Processes including Storage and Archival Systems

KF10.0 The Bureau has no capacity and infrastructure for centralized storage and archiving of its work products. Currently, the bureau uses the website cloud server as centralized storage. This is unsuitable for a state statistical office and does not meet the minimum threshold for operationalizing the Establishment Act.

5.2.7 Assessment of Methodology Standards and Applications

There was no methodological standard and applications in the bureau as most of the surveys or census conducted like the general household and MICS were conducted by external consultants, with no formal documentation on methodology standards provided by the bureau.

Currently, the bureau focuses on SAS Implementation through the publications of SYB and CPI. However, there is strong appetite to begin to expand the application of methodology standards for GDP Computation and General Household Survey.

5.2.8 Assessment of Data Sharing, Centralization and Open Data Framework

The absence of a centralized structure for data gathering and sharing in Kano State, coupled with the lack of an open data framework, points to an opportunity for the Bureau to enhance its data management practices.

While the recent launch of the website www.ksbs.ng is a positive step toward digital presence, there is a need for a more comprehensive approach to data organization and dissemination.

As part of the website development, incorporating features for open data access, such as data portals or datasets available for download, could further enhance the Bureau's commitment to transparency and open governance. This approach aligns with international best practices in data management and supports evidence-based decision-making.

5.3 Competency Assessment & Skills Gap Analysis (SGA)

5.3.1 Assessment of Composition & Recruitment Process for Technical Staff

The Kano Bureau of Statistics has a total of 46 staff actively working at the bureau, with 3 staff on secondment. 74% (34) of the staff work in technical departments while the remaining work with administrative and general support departments in the Bureau.

27 (80%) out of 34 staff have the relevant academic qualifications required for statistical operations. The composition of staff with their qualifications is further provided in the table below:

5.3.2 Competency Analysis of Technical Staff against Department Roles

5.3.2.1: Distribution of Staff Qualifications across departmental

#	Departments with Relevant Qualifications	#	Phd	Msc	Bsc	hnd	Minimum Threshold/Ratio Met
1	***Admin & General Services***	**4**	0	0	2	2	
2	***Real Sector & Economic Growth Statistics***	**8**	0	1	5	2	
3	***Demography and Social Indicators***	**8**	0	0	3	5	
4	***ICT***	**5**	0	0	4	1	
		27	**0**	**1**	**14**	**10**	

5.3.2.2: Distribution of Staff with Relevant Qualifications.

#	Staff with Relevant Qualifications	#	Phd	Msc	Bsc	hnd	Minimum Threshold/Ratio Met
1	***Staff with Mathematics Qualifications***	**3**					At least 60% of the technical staff should have qualifications in either statistics, mathematics of demography
2	***Staff with Statistics Qualifications***	**14**					
3	***Staff with Computer Science Qualifications***	**3**					At least 3 staff with computer science qualifications are required to manage IT infrastructure and assets of the bureau.
4	***Staff with Data Science Qualifications***	**-**					Including staff with data science qualification is a recommended addition to modern bureau. We recommend at least 3 staff with data science qualifications.
5	***Staff with GIS Qualifications***	**-**					3 staff with GIS qualification will be key in driving the bureau to include GIS components in 70% of its surveys and census work products.
6	***Staff with Demography Qualifications***	**-**					At least 2 staff should have demography qualifications for household computation and population based surveys.
7	***Staff with Economics Qualifications***	**7**					At least 2 staff should have economics qualification to support social and economics statistics generation in the bureau.
8	***Staff with Health Related Qualifications***	**-**					
		27					

5.3.3 Skills Gap Analysis (SGA)

Analysis of the skills gap requirements show significant whitespace for improvement across both scale (the number of staff effectively able to use tools for statistical operations) and depth (the ability to plan, prepare and independently manage survey, census or operational data archetypes).

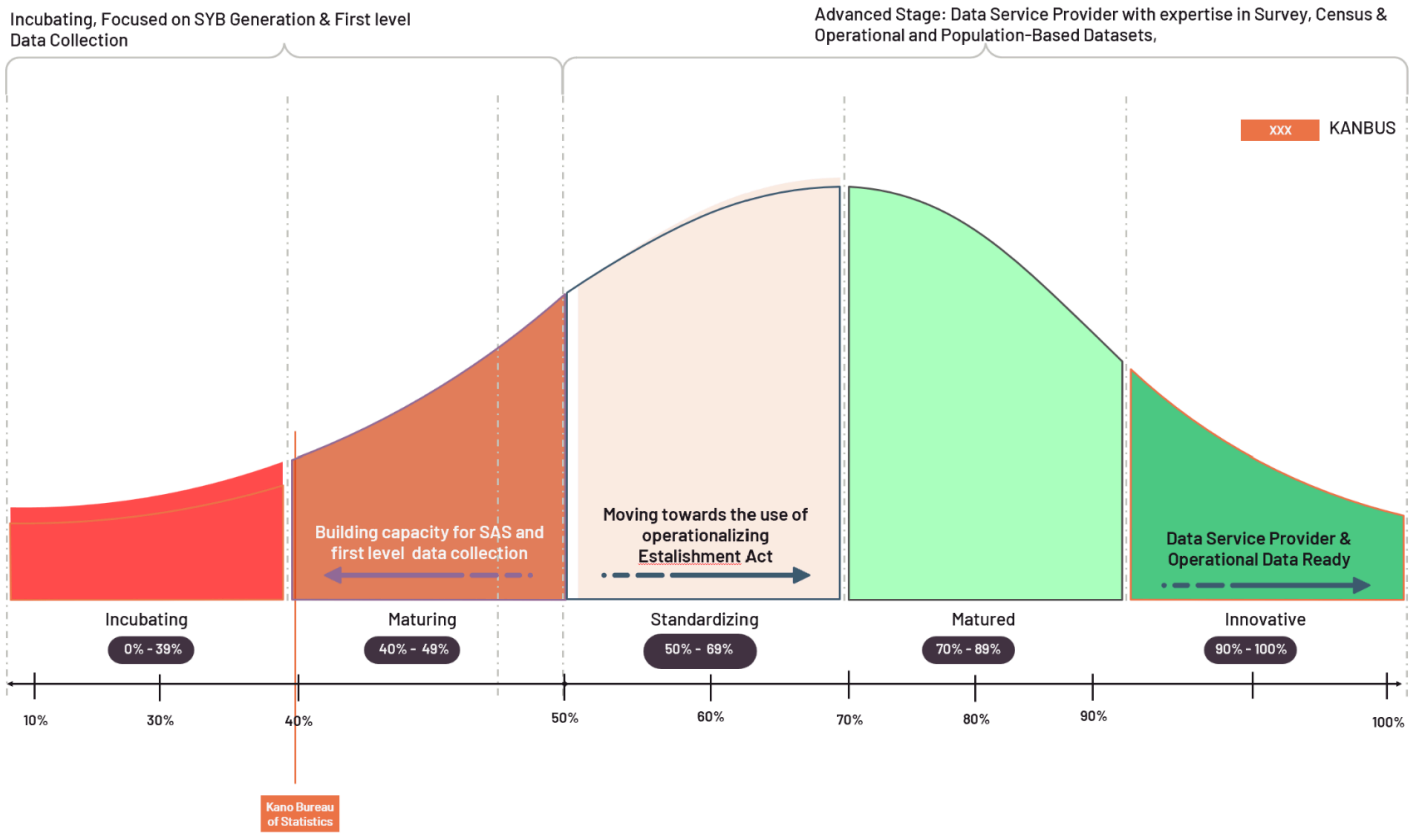
All the technical staff are able to use kobo toolkits for collecting data for field operations but only 2 technical staff were able to use excel for advanced analysis and scripting of the field collection tool.

#	Functional Areas	#	Total	%	How the Bureau rates itself on functional areas.
Use of Simple, to Advanced Toolkits for Data Collection, Cleaning, Analysis and Visualization					
1	**ODK Scripting, Design and Templating**	1	32	**3%**	1/5 : The Bureau has 1 staff trained on scripting on Kobo Toolkit
2	**Stata/R/Python/SPSS**	0	32	**0%**	Not Rated: No technical staff is able to use the tools
3	**Data Visualization Tool: Tableau, SAS, PowerBI, Google Studios**	0	32	**0%**	Not Rated: No technical staff is able to use the tools
4	**GIS: ArcGIS, QGIS, MapME, FME,GeoODK**	0	32	**0%**	Not Rated: No technical staff is able to use the tools
5	**Microsoft Office: Excel**	2	32	**7%**	1/5: Excel is used for the computation of CPI
Ability to plan, prepare and implement surveys and census independently					
7	**Survey Design & Preparation**	0	32	**0%**	Not Rated: No technical staff is able to use the tools
8	**Training & Data Collection**	32	32	**100%**	⅘- Staff can use Kobo Toolkit for first level field data collection
9	**Data Cleaning, Editing, Tabulation & Analysis**	0	32	**0%**	Not Rated: No technical staff is able to use the tools

10	**Report Writing**	0	32	**0%**	Not Rated: No technical staff is able to use the tools

5.4 Maturity Gradient for Kano Bureau of Statistics

Our assessment of the Kano Bureau of Statistics as regards its maturity on survey and census capabilities and capacity to manage operational data is at the **incubation stage (37%)**. Significant effort is required to move the bureau to a data service provider level that effectively manages survey, census and operational data archetypes as shown in the diagram below. A summary of the assessment is also provided in the table below.



5.4.1 Summary Table of Maturity Gradient for Kano Bureau of Statistics

Domain 1 **Establishment Act & Legal Framework**	**Domain 2** **Organogram & Organizational Structure**	**Domain 3** **Stakeholder Management & Donor Relationship**	**Domain 4** **Communication & Data Dissemination Policy**	**Domain 5** **Data Management Processes Including Storage and Archival Systems**	**Domain 6** **Hardware Equipment & Software for Statistical Operations**	**Domain 7** **Technical Implementation of Census Surveys & SAS Capabilities**	**Domain 8** **Application of Methodology Standards**	**Domain 9** **Data Sharing, Centralization & Open Data Framework**
58%	**22%**	**10%**	**40%**	**0%**		**25%**	**0%**	**5%**
Operational framework for implementing the Act is not in place, and there is currently no functioning governing board to drive the Bureau's full independence	Organizational Structure of the Bureau does not align with state statistical standards	No structured engagement between the Bureau and MDAs/LGAs or between the Bureau and Donor Agencies **Recommendation implemented now**	Communication and dissemination of the bureau's work product through its website and Facebook platforms	No capacity and infrastructure for centralized storage and archiving of its work products	Only 3 of 14 computer systems (desktops and laptops) were functioning **Recommendation implemented now**	Bureau has a moderate capability for SAS Implementation through the SYB and also through data collection using CAPI tools like Kobo Collect	No methodological standard and applications in the bureau as most of the surveys or census conducted like the general household and MICS were conducted by external consultants	Absence of a centralized structure for data gathering and sharing.
State Consultative	Functional Mapping of the				The desktop computers	In the last 2 years, no survey		

Committee on Statistics (SCCS) has not been formed or inaugurated at the state level **Recommendation implemented now**	Departmental Mandate of the Bureau needs to be aligned with the national statistical framework and UN Guidelines for Statistical Organization				are outdated (use Windows 7) and can not be used for statistical operations	or census has been carried out in the bureau. Only SYB and CPI have been conducted as part of the reform process		
						No capacity across all data and survey management implementation facets, which indicates a deficiency in requisitive expertise to execute the mandates of the bureau effectively		

5.5 Process Improvement Plan

The process improvement plan provides a stepwise approach for improving operational data visibility to connect with the State and BMGF performance strategies. In this regard, we plan a phased improvement plan into the quick wins, medium-term, and long-term strategy to increase the visibility of reporting indicators across the input to outcome continuums as shown below:

Quick Wins

DMIP1: Develop Corporate Plan for planning out the growth model of the Bureau as a Data Service Provider.

The Bureau requires a corporate plan to transform it from its current position to a data service provider in the next 5 years, focusing on operational and populated-based datasets and realigning the statistical operations beyond SYB to transitioning as a hub for operational data.

DMIP2: Embed Technical Capacity through Engagement of Subject Matter Experts and explore partnership with academia to provide technical backstopping to the Bureau.

To quickly scale capabilities in the bureau, there is a need to embed subject matter experts to support in hand holding the bureau on planning for implementation of operational and population based data sets to achieve scale..

DMIP2: Plan Capacity Building sessions focusing on Technical Capacity and Building out a sustainable knowledge management practices within the Bureau

Plan capacity building curriculum to capacitate the bureau on modern data management practices and the ability to manage operational data and population based surveys especially within the health sector..

Medium Term

DMIP3: Improve workplace productivity through a similar typed data lab investment to create a single repository for accessing operational data.

There is a need to improve workplace productivity by equipping the staff of the bureau with modern tools, creating a datalab with requisite infrastructure to support the goal of building a single repository and storage platform for hosting data products in the state without requiring third party infrastructure.

DMIP4: Launch a Data Science Fellowship Program (similar to Kaduna) aimed at powering young people into modern data management practices and increasing the bandwidth of the bureau to crowdsource talents for operational and population based surveys.

Expand and match the current ISS Checklist to include components of SAM as part of the process for tracking service availability and distribution across primary facilities

Long Term

DMIP5: Start Implementation of Population Based Surveys and Census through the General Household Survey and System of Health Accounts

Start the implementation of population based surveys like the General Household Surveys and System of Health Accounts to provide feedstock for the health sector to generate insights from population based datasets..

DMIP6: Begin development of work products to support the health ecosystem leverage on the bureau for operational data platforms.

Begin to provide data service work products to the health ecosystem players in terms of data work products across the HRH, SCM, SD, HCF and CS domains.

6.0 Domain 6: Human Resource for Health (HRH)

6.1 Governance & Institutional Assessment of MDAs with HRH Frames

6.1.1 Introduction and analysis of existing studies on HRH optimization;

Human Resource for Health (HRH) encompasses a diverse range of healthcare personnel responsible for providing healthcare services. The SMoH oversees the entire health sector, including HRH. The Kano State Hospital Management Board (HMB) manages HRH at the secondary healthcare level, while the Kano State Primary Health Care Management Board (KSPHCMB) oversees HRH within the primary healthcare (PHC) sector.

According to the 2021 National Primary Health Care Development Agency (NPHCDA) HRH profiling report, Kano State has a total of 19,650 healthcare workers (HCWs) at the PHC level, with 60% in temporary positions. The report highlights a shortage of nurses, midwives, and doctors, resulting in a heavy workload for Community Health Extension Workers (CHEWs) who provide clinical services in PHC facilities.

The report also reveals that 66% of the total PHC HRH are in rural areas, where there is a severe shortage of healthcare workers compared to urban areas. This imbalance further hinders healthcare service provision in rural communities.

The staffing levels of PHC HRH in Kano State fall below target requirements, and recruitment rates are significantly lower than attrition rates, posing a challenge in maintaining an adequate and stable healthcare workforce. The NPHCDA preliminary analysis of PHC HRH Profiling in the state puts the availability at about 45%.

The Kano State Strategic Health Development Plan (SSHDP II) outlines a comprehensive set of interventions to address the HRH challenges in the state. These include strengthening institutional capacities related to HRH management and development, improving funding and resource allocation, enhancing quality assurance for HRH training, optimizing deployment and retention of health workers through strategies like task shifting and task sharing, strengthening HRH planning and coordination mechanisms, and establishing robust HRH information systems to support evidence-based decision-making.

In line with these interventions, the KSPHCMB operates a cloud based HRHMIS platform that supports the management and storage of HRH data on all PHCs in the State. This platform facilitates decision-making processes related to recruitment, promotions, and capacity building. It is also meant to be used for training nominations, semi-automated attendance tracking, and recording completed training. Biometric Attendance Machines are being pilot tested in 2 locations (Unguwa Uku and Ja'in PHCs) to monitor attendance and address absenteeism. Data security is ensured through backup servers, monitored CCTV and IT support. In 2021, an FCDO funded program updated and improved on Kano State Health Workforce Registry (HWFR) that was initially developed for the State in 2018 but became outdated due to infrequent maintenance.

The Kano State HRH Situation Analysis 2023 Report identified multiple challenges in optimizing HRH management in the State. The report noted that: tensions in the dual management of PHC HRH between the MoLG and KSPHCMB, leading to inefficiencies and bottlenecks; implementation of task-shifting and task-sharing policies has faced resistance from healthcare professionals and policymakers and has itself contributed to an overreliance on lower-cadre workers, rather than addressing shortages of frontline staff like doctors and nurses; inadequate financing, inconsistencies in recruitment and retention policies, and limited production capacity of health training institutions further exacerbate HRH gaps; interference and socioeconomic factors make it difficult to achieve an equitable distribution of healthcare workers, especially in rural areas; and that sustainability of HRH initiatives is also hampered by insufficient government funding to maintain development partner-supported interventions. Addressing these multifaceted HRH challenges is crucial for improving service delivery and access to quality healthcare in Kano State.

For this assessment, HRH activities in Kano State were categorized into eight main component groups:

1. Analytics, Forecasting and Planning: This component involves the collection, analysis, and utilization of data related to HRH operations for decision support. It accounts for approximately 28.75% of the overall HRH functions.
2. HRH Production: This sub-component looked at the alignment of the state HRH production with the needs of the sector.
3. HRH Management and Administration: The Human Resource for Health Management and Administration accounts for about 26.50% of the overall HRH

functions.

4. Productivity and Performance Management: This group involves the processes and systems used to measure, evaluate, and improve the efficiency, effectiveness, and output of health workers, and it accounts for around 7.5% of the HRH responsibilities.
5. Talent Management: This area focuses on strategic planning, recruitment, development, and retention of health workers, it accounts for 14.50% of HRH functions.
6. Incentives/Rewards and Sanctions Administration: This involves the management of recognition programs, and disciplinary measures to motivate, retain and manage competent health workers.
7. Retirement and Attrition: This group is the smallest and it accounts for 1.50% of the HRH functions.
8. Compensation and HRH Financing: This group comprises approximately 21.25% of the overall HRH functions.

These classification groups mirror the classification used in the State's HRH policy and provide a structured framework for the effective management and oversight of the healthcare workforce in Kano State.

To establish a comprehensive understanding of the operational data and situational context within the HRH domain, this review encompassed an examination of various existing studies, laws, and data products. This involved a thorough analysis of national and state-level documents, incorporating crucial reports as depicted in the table below:

Domain	**Existing Study Materials for Desk Reviews**
Human Resources for Health	- *NPHCDA Preliminary Analysis of PHC HRH Profiling in Kano State* - *NPHCDA Minimum Service Package Report (Adaptation & Costing Reports) for PHCs.* - *Kano State HRH Workforce Profile -2021* - *Kano State HRH Strategic Plan* - *Kano State HRH Policy* - *Kano State HRH Assessment* - *Human Resources for Health (HRH) Indicator Compendium*

	- *Kano State Health Systems Strengthening Program Technical Review* - *Health System Assessment Approach*

After reviewing the various documents on HRH. We proceeded to conduct a focus group discussion (FGD) and key informants' interview (KII) sessions with the key stakeholders from the following MDAs to validate our desk reviews:

1. Kano State Ministry of Health,
2. Kano State Primary Health Care Management Board,
3. Office of the Head of Civil Service,
4. Health Sciences Training Institutions, and
5. Ministry for Local Government.

An assessment was conducted to identify performance areas related to operational data for the HRH domain in Kano State. This assessment resulted in the generation of a scoring gradient. The FGD/KII assessment conducted by subject matter experts generated a general score of 62%, indicating a standardizing maturity gradient. The specific components of the scoring are provided below.

Summary Result from FGD/KII (Human Resource for Health)				
Assessment Area	**Weighting (%)**	**Actual Score**	**Percentage Score (%)**	**Growth Area for Operational Data**
Analytics, Forecasting and Planning	28.75	18.44	**64.13%**	
HRH Production*	-	-	**N/A**	
HRH Management and Administration	26.50	12.78	**48.21%**	• Data collection is centered mostly in public facilities • HRH Strategy and framework are pursued for performance management
Productivity & Performance Management	07.50	03.20	**42.67%**	• Staff productivity & leave management are areas requiring improvement
Talent Management	14.50	10.60	**73.10%**	
Incentives/Rewards and Sanctions*	-	-	**N/A**	
Retirement and Attrition	01.50	01.15	**76.67%**	

Compensation and HRH Financing	21.25	15.73	**74.00%**	
Total Score (100%)	**100**	**61.89%**		

*Questions on these components have not been included in initial FGD/KII sessions and were not scored

The Kano State HRH assessment examined several key areas related to HRH, as enumerated.

The assessment found that the retirement and attrition, compensation and HRH financing, talent management and analytics, forecasting and planning sub-components scored fairly well, indicating that the state has a relatively robust system for tracking and managing its health workforce.

However, the assessment revealed some challenges around HRH management and administration, productivity, and performance management, which scored 48.21% and 42.67% respectively. This suggests there may be room for improvement in managing health worker transfers, deployment, promotion, evaluation etc. among others.

Retirement and attrition scored the highest at 76.67%, suggesting this is a relatively strong area for the state. This is an important metric, as effective tracking and management of staff exit is crucial for sustainable service delivery.

Compensation & HRH Financing as well as Talent Management components scored 74% & 73% respectively, indicating moderate performance in these areas. These operations are vital for a fairly compensated, motivated, and well-trained workforce with the right skill mix to meet the population's health needs.

The Kano State HRH assessment paints a mixed picture, with some areas performing reasonably well but others requiring more attention and improvement. Addressing the weaker areas, particularly around HRH Management & Administration and Productivity & Performance Management, will be important for strengthening the state's health workforce and improving service outcomes.

In general, the total score for the FGD/KII assessment in the HRH domain is 61.89%. This suggests a moderate level of maturity in the assessed areas. The results highlight both strengths and areas for improvement in managing HRH in Kano State. The findings can serve as a basis for developing targeted strategies and interventions to enhance the performance and effectiveness of the workforce in the health sector.

6.1.2 Availability of Legal & Institutional Framework for HRH Operationalization

Kano State has multiple HRH policies at both the state and health sector levels, some of which are adapted from federal-level policies. These include the Kano State HRH Policy (2009), HRH Strategic Plan (2011-2017), Task-shifting and sharing policy (2017), HRH audit and recruitment policy, and the PHC HRH Strategic Plan 2022-2032.

While the Kano HRH Policy and Strategic Plan have not been updated since their initial development, they have been partially implemented, leading to improvements in the state's HRH landscape, such as the establishment of more health training institutions and recruitment of additional health workers.

The Kano State Strategic Health Development Plan II (2017-2021) also prioritizes HRH as a health system strengthening area, with interventions focused on improving institutional capacity, coordination, funding, data management, and workforce planning.

The implementation of the task-shifting and sharing policy has been mixed, with some successes in transferring specific tasks to different cadres of healthcare workers, but also concerns about healthcare workers departing from their primary work locations with their newfound skills seeking “greener pastures” in secondary and tertiary facilities.

The state has conducted HRH audits, which have helped identify workforce gaps and issues like absenteeism, leading to improvements in HRH performance and service delivery.

Kano State has faced challenges with HRH recruitment and retention, with only one-for-one replacement of retiring healthcare workers, leading to significant gaps in the healthcare system.

The implementation of the Primary Health Care Under One Roof (PHCUOR) policy has improved HRH management at the primary healthcare level, with the Kano State Primary Health Care Management Board (KSPHCMB) now overseeing HRH recruitment, transfers, and promotions.

The state has recently developed a 10-year PHC HRH Strategic Plan (2022-2032) to address HRH planning, management, and effective utilization at the primary healthcare level. Largely, while a legal and institutional framework for HRH operationalization exists in Kano State, its implementation requires strengthening and improvement to address

the state's HRH challenges.

6.1.3 Institutional Arrangement: Organogram and Organizational Chart as it relates to Human Resource for Health Domain.

The Kano State SMoH functions as the primary governing body responsible for supervising healthcare services in the state. Its main role is to coordinate HRH activities in collaboration with specialized entities such as the Health Management Board (HMB) and Kano State Primary Health Care Management Board (KSPHCMB). These dedicated units within the mentioned boards are tasked with efficiently managing HRH-related responsibilities and tasks. Operating at different levels including state, local government area (LGA), and zonal levels, these units ensure the smooth implementation of HRH initiatives across various administrative domains. A TWG for HRH that comprises members from across the sector and which sits on a quarterly basis.

Within the SMoH, there is an HRH unit that regularly gathers data on healthcare workers in Kano State from both public and private healthcare facilities as well as training institutions. This data is utilized to update the healthcare workforce registry and identify any gaps or needs in HRH. The HMB oversees the management of the healthcare workforce at the secondary healthcare level and conducts regular monitoring and evaluation activities. They also handle staff redistribution based on attrition. The KSPHCMB has a specific HRH unit that collaborates with the IT unit. Together, they manage the HRH Control Centre, which is an interactive platform designed for effective HRH management at the primary healthcare level. The platform handles various HRH-related tasks such as leave requests, promotion records, and staff assignments. Additionally, the KSPHCMB organizes regular meetings and activities to address HRH issues at the LGA and zonal levels.

The establishment and functioning of the KSPHCMB Organogram are based on the provisions outlined in the governing law. According to this law, the Board is a public agency entrusted with providing, regulating, coordinating, supervising, and monitoring primary healthcare activities in the state, as envisioned in the National Health System.

All the operations and activities of the Board are carried out by its departments and agents under the governance of the Board of Directors and the Executive Secretary, who serves as the accounting officer. To accomplish the objectives set forth in the law, the structures, functions, and relationships with various organizations have been defined. In

this regard, the SMoH acts as the overseeing Ministry for the Board and provides policy guidance. The following organogram illustrates the six fundamental departments of the Board, as mandated by the law, and their associated divisions, sections, units, and programs, as required for the Board to fulfill its functions as outlined by the law.

Considering the large size of the state, its population, numerous communities, and healthcare facilities, as well as the need for continuous support, supervision, monitoring, and evaluation of services, programs, and projects, six zonal offices were established from the beginning. These offices serve two main functions:

1. Coordination and control of administration, personnel, financial transactions, and services, and
2. Support supervision, monitoring, and evaluation of services and interactions with community structures and leadership.

To fulfill these functions, various duty schedules and job descriptions have been developed for all departments and offices at all operational levels as depicted in the organogram and charts.

The departments responsible for overseeing HRH activities in the SMoH are the Department of Planning, Research, and Statistics, and the Department of Administration and General Services. In the Primary Healthcare Management Board, it is the Department of Planning, Monitoring, and Evaluation, and the Department of Administration and Finance. The Director of Administration and Finance carries out responsibilities such as the following, among others:

Post	Job Description/Duties
Director Planning, Monitoring and Evaluation	1. Provide guidance in preparing strategic and annual plans for PHC in the State. 2. Collate Health plans of the LGAs and Zones. 3. Follow-up and monitor implementation of the Health plans. 4. Collate and analyze health data, prepare State reports for the management. 5. Coordinate and monitor Partnership activities in the State. 6. Lead and coordinate human resource for Health planning and development 7. Responsible for Operational Research of the Board. 8. Health sector planning of the board in collaboration with AGS. 9. Responsible for M&E and HMIS activities. 10. Coordinate Integrated Supportive Supervision and Quality Assurance/Quality Control 11. Perform any other duties and roles that may be assigned by the Executive Secretary
Director Admin and Human Resources	1. Lead and coordinate general administrative support services of the Board. 2. Head of Personnel Management , administration, Finance and general services 3. Coordinate and monitor policy implementation. 4. Guide Local PHC administration on policy matters. 5. Management of estate, equipment and other assets of the Board. 6. Responsible for General stores of the board 7. Annual Review all reports and data emanating from Zonal and Local PHC teams and collate these for planning purposes. 8. Review and recommend for approval all operational plans of the relevant programmes and units under the department. 9. Conduct quarterly review meetings of the Department. 10. Plan, budget, implement, control and monitor finances of

	the department. 11. Perform any other duties and roles that may be assigned by the Executive Secretary

6.1.4 Assessing the Component of the Human Resource for Health through FGD/KII

In a bid to identify the gaps existing within the human resource for health processes, the desk review findings were validated through focus group discussions (FGDs) and key informant interviews (KIIs) with key stakeholders. This enabled a deep dive into the operational data architecture of the state at a macro level.

The human resource processes span from the registration and licensing of graduating students, through their recruitment, deployment, and actions taken to promote them and improve their productivity. These processes continue throughout their transition within the system, up to their eventual exit from the workforce (through retirement, migration, or death)

The "performance support and enabling environment" dimension, on the other hand, includes the elements that aid health workers in the completion of their day-to-day tasks. This encompasses tools, guidelines, training, and professional development activities. It also includes workplace conditions such as safety procedures, avenues for regular communication, compensation, incentives, and elements of supportive supervision.

These two dimensions - human resource processes and the enabling environment - are inherently interlinked and complement one another.

6.1.4.1 Measurement Markers for Assessing Analytics, Forecasting & Planning

These are markers that seek to evaluate the State's capacity to collect, analyze, and utilize data to make informed decisions about the health workforce.

The Board has developed a robust information system dedicated to managing HRH data, specifically for the Primary Health Care subsector. However, the utility of this system is constrained by poor adoption by staff and line managers. Furthermore, the platform lacks advanced analytical features, limiting its potential usefulness in workforce forecasting and strategic planning.

Despite these limitations, the Board has taken a proactive approach to HRH management. It develops an Annual Operating Plan that aligns with its strategic objectives and incorporates estimates of HRH gaps as well as recruitment goals. This plan serves as a vital input to the Board's HRH planning and forecasting activities.

#	Measurement Markers	Implications	Status
1	The State tracks the accuracy, completeness, timeliness , and reliability of the data used for HRH analytics	Without reliable data, the State will struggle to identify workforce challenges, design appropriate solutions and effectively manage and develop the health workforce	**No**
2	The State leverages advanced analytics to accurately forecast and plan workforce supply and demand	Without robust data-driven workforce planning, the State may face workforce imbalances, inefficient resource allocation, compromised quality of care, and reduced health system resilience, undermining its ability to ensure sustainable, quality health service delivery	**No**

6.1.4.2 Measurement Markers for Assessing HRH Production

These measurement markers serve to comprehensively assess the State's capacity, engagement, and collaborative efforts with other stakeholders in the domain of Human Resources for Health (HRH) production.

While there appears to be a lack of synergy between the state and pre-service training institutions regarding curriculum development and the composition of enrollees, the state upholds established national competency standards and curricula that guide the training and graduation of all cadres of healthcare workers. However, some respondents within the SMoH have expressed dissatisfaction with the quality of graduates from some of these institutions, recommending the need for supplemental training and recertification across board. This concern is exemplified by an instance where an Environmental Health Technician (EHT) was unable to list the medical waste color codes. Notably, there is a surplus of EHTs within the Board's workforce compared to the available positions, further exacerbating the imbalance in the health workforce.

Despite these challenges, the state plays an active role in the production of healthcare workers across various cadres and levels, including doctors, nurses, midwives, community health extension workers, dental professionals, pharmacy technicians, and laboratory technicians. Alongside the state-run institutions, there are also federal and privately owned training centers, as well as unlicensed and unrecognized institutions, the integrity of which may be questionable.

By addressing the gaps in curriculum development, graduate quality, and workforce distribution, the state can optimize its HRH production and deployment strategies, ultimately strengthening the healthcare system's capacity.

#	Measurement Markers	Implications	Status
1	The quality and relevance of health worker training programs are upheld through the establishment of national competency standards, the alignment of curricula with evolving health priorities, and the continuous evaluation of the effectiveness of training approaches to produce a competent and capable health workforce	Establishing national competency standards, aligning training curricula with evolving priorities, and continuously evaluating program effectiveness, can enable the State to develop a competent, capable, and adaptable health workforce	**Partial**
2	The State plays a proactive role in production of health workers, employment of healthcare graduates, tracking employment rates, and monitoring job placement outcomes	By taking a proactive approach to health worker production, Kano State can develop a responsive, well-aligned and adaptable health workforce that effectively meets the state's evolving healthcare needs.	**Yes**
3	The training and output of pre-service institutions are closely tracked and supported; their enrolment capacity is regularly assessed, their annual graduation rates are monitored, and health workforce production is ensured to meet service needs	By taking a proactive approach to health worker production, Kano State can develop a responsive, well-aligned, and adaptable health workforce that effectively meets the State's evolving healthcare needs	**No**

6.1.4.3 Measurement Markers for Assessing HRH Management and Administration

These are markers that evaluate the State's capacity to effectively manage, support, and optimize the performance of the health workforce by end-to-end automated

efficient handling of operational HRH data.

The HRHMIS was developed using local talent, thus making it sustainably amenable to in-house maintenance, customization, and integration at a reasonable cost. Nevertheless, the platform does present several opportunities for enhancement to optimize functionality and user experience. According to various respondents, this slow uptake of widespread adoption can be attributed to a variety of factors, including:

- Staff indifference and lack of awareness or training on the system
- Preference for a mobile application rather than a web-based platform
- Interruptions in system availability due to technical issues or funding constraints
- Limited technical proficiency among some staff members
- Concerns from some employees that the HRHMIS and HRH officers may be perceived as undermining their roles.
- Lack of clear terms of reference and defined boundaries for HRH staff
- Insufficient technical capacity among some consumers of the HRHMIS services
- Inadequate physical infrastructure, such as computers, connectivity, and power, to support operations at various facilities.
- High costs associated with system deployment and hosting, often in foreign currency.
- Security vulnerabilities due to the absence of a comprehensive security assessment and risk management strategy
- Lack of a dedicated Data Protection Officer (DPO) to oversee data governance and compliance.

#	Measurement Markers	Implications	Status
1	The government operates a functional HRHMIS that collects and maintains employee profiles and records HRH operational activities such as deployment, transfer, promotions, leave, performance, discipline and exit.	With a functional HRHMIS, the State has equipped itself with a powerful tool to effectively manage and develop its health workforce.	**Yes**

2	The State maintains a sector-wide Health Worker Registry for practitioners in the Public, Private and Independent sectors as well as service-wide HRH dashboards for data analytics and decision support	In here, exists an opportunity for Kano State to build upon its HRHMIS to develop a more comprehensive and integrated Health Worker Registry that captures the full breadth of health practitioners across the State.	**Partial**
3	There exists a platform designed to support the implementation and monitoring of Task Shifting and Task Sharing (TSTS) practices by incorporating competency profiling, task matching, allocation, and delegation as well as caseload tracking.	The State can leverage on such a platform to gain deeper insights into the optimal utilization of its health workforce, empowering strategic decision-making to ensure the efficient and effective TS&TS implementation to meet evolving healthcare needs.	**Partial**

6.1.4.4 Measurement Markers for Assessing Productivity and Performance Management

These are markers that seek to assess the efficiency, effectiveness, and accountability of the system and health workers in delivering quality health services.

The health workforce performance is assessed using a standard APER (Annual Performance Evaluation Report) form, which is an adaptation of the national annual assessment document. The process involves the staff first pre-filling the form, followed by evaluation and scoring by their immediate manager, and finally, countersignature by the department head or director.

This evaluation system presents major drawbacks. Firstly, the lack of integration between the assessment process and continuous professional development opportunities limits the State's ability to identify and address skill gaps among the workforce. Additionally, the use of a standardized national document for performance evaluation across diverse healthcare settings may not adequately accommodate the unique priorities, and competency requirements of this specialized sector.

To address these limitations, the Board is in the process of redesigning, testing, and deploying a replacement evaluation tool to supersede the APER. This new tool will provide a more tailored knowledge and skill assessment for health workers, utilizing a weighted scoring system with multiple variables. The aim is to develop a more

comprehensive and relevant performance evaluation framework that is better aligned with the specific needs and context of the healthcare organization.

#	Measurement Markers	Implications	Status
1	Key workforce productivity metrics such as caseload burden, service output indicators, efficiency ratios and absenteeism rates are tracked and analyzed to ensure the efficient and effective utilization of Human Resources for Health.	As the State continues to refine and improve its service delivery, there exists the potential to leverage on data to make more informed choices about workforce distribution, task allocation, and performance management.	**Partial**
2	Existing systems evaluate and support HCW professional development, emphasizing performance reviews, individual development plans, and performance-based incentives or career advancement opportunities.	KSPHCMB appears not to be fully leveraging the potential of its human capital, thus presenting an opportunity to refine and strengthen these initiatives directly tied to skill development and overall workforce optimization.	**Partial**
3	Robust systems are in place to track and monitor the percentage of the health workforce meeting defined competency standards across diverse skill domains.	An enhanced competency tracking and monitoring system will empower the State to design targeted-training, deploy health workers optimally, and support career progression equitably.	**Partial**
4	Strong emphasis is placed on maintaining a stable health workforce through data management strategies such as monitoring and improving turnover rates, especially in rural and hard-to-reach areas, compensation, benefits , and career advancement opportunities.	The health worker within the State will feel valued, respected, and invested in, fostering a sense of loyalty and dedication that translates into higher job satisfaction, improved patient care, and reduced absenteeism and turnover.	**Yes**

6.1.4.5 Measurement Markers for Assessing Talent Management

These are markers that assess the State's capacity to attract, develop, and retain a skilled and motivated health workforce. The State implements a talent management approach that is anchored in the AOP, which is closely aligned with the strategic objectives. This plan provides a clear roadmap and direction for the various talent

management activities to be carried out by the Board.

At the operational level, Unit Directors are responsible for creating a monthly training schedule derived directly from the overarching AOP. This ensures that training conducted at the ground level is coherent with the broader strategy outlined in the AOP.

However, the State needs to streamline its operations in record-keeping and data integration. Currently, there is a dual system of recordation for programmatic and in-service training activities, with information being documented in either the HRHMIS or the paper-based platforms.

This fragmented approach to record-keeping creates difficulties in comprehensively tracking and monitoring the various training activities undertaken. The lack of a centralized, integrated system reduces the utility of these records for effective planning and decision-making purposes.

#	Measurement Markers	Implications	Status
1	Talent initiatives are tightly-coupled with the State's overarching healthcare goals.	This ensures investments in recruiting, developing, and retaining health workers are directly designed with the achievement of broader healthcare objectives.	**Yes**
2	Reliable workforce data - encompassing skills gaps, turnover rates, diversity metrics, and employee engagement - is consistently collected and analyzed to inform strategic talent initiatives.	To fully harness the transformative power of workforce data, the State must establish a robust, real-time data infrastructure that provides the actionable insights needed to design and implement strategic, data driven talent initiatives.	**Partial**
3	The State leverages the power of integrated talent management technology to streamline and automate workforce planning, recruitment, hiring, engagement and staff recognition.	Without an integrated platform that streamlines key talent management functions, the State faces the risk of siloed, fragmented processes, suboptimal data utilization, and missed opportunities for automation and scalability.	**No**

6.1.4.6 Measurement Markers for Assessing Incentives/Rewards and Sanctions

These markers assess the State's capacity to create an enabling environment that motivates and retains high-performing health workers.

#	Measurement Markers	Implications	Status
1	Health worker professional development is tracked, incentivized and rewarded through the provision of in-service training support, promotion opportunities upon completion, etc	The health worker within the State will feel valued, respected, and invested in, fostering a sense of loyalty and dedication that translates into higher job satisfaction, improved patient care, and reduced absenteeism and turnover.	Yes

6.1.4.7 Measurement Markers for assessing Staff Retirement and Attrition

These markers help assess the State's capacity to manage workforce transitions and maintain a stable and sustainable health workforce.

Healthcare workers who are scheduled to retire are required to submit formal notification at least three months prior to their anticipated retirement date. During this period, necessary paperwork and procedures are undertaken to facilitate the migration of the worker from the active payroll to the pension scheme. There is however no alert mechanism to remind the worker of upcoming retirement.

#	Measurement Markers	Implications	Status
1	Retirement rates and years of experience lost are being calculated, looking at the number of HCWs retiring from the system over a given time period and measuring the total years of experience exiting the system.	The State can be able to gain critical insights to inform evidence-based interventions, enhance retention strategies, ensure continuity of institutional knowledge, and maintain a stable, experienced, and adaptable health workforce.	Partial

2	Voluntary and involuntary turnover rates are being measured, indicating the number of HCWs who voluntarily or involuntarily leave their positions as a percentage of the total workforce.	A comprehensive understanding of turnover trends can empower the state to develop targeted interventions that strengthen the healthcare workforce, ultimately enhancing the overall resilience and effectiveness of the broader system.	**Yes**
3	Vacancy rates and replacement hiring rates are being monitored, quantifying the number of open, unfilled HCW positions and tracking how quickly those vacant positions are being filled.	The state can gain valuable insights to align the sufficiency of workforce supply and demand, enhance operational efficiency of recruitment mechanisms and service delivery.	**Yes**
4	Staff-to-population ratios are being monitored, revealing changes in the HCW density over time.	Inadequate HCW density may impact access to care, particularly in underserved communities, creating barriers to timely, quality healthcare services.	**No**

6.1.4.8 Measurement Markers for Assessing Compensation & HRH Financing

These markers focus on evaluating the adequacy, equity, and sustainability of the financial resources available for the health workforce.

The current process of preparing and disbursing healthcare workers' salaries involves a multifocal approach across the Ministry of Local Government, the Board, and the State Accountant General, which introduces vulnerabilities to errors, fraud, and mistakes due to the decentralized nature of the workflow. The fragmentation of responsibilities across these organizational units hampers effective oversight, accountability, and transparency in the salary management system.

#	Measurement Markers	Implications	Status
1	There is a functional KSPHCMB-managed payroll system enhanced with biometric devices and which is flexible, customizable, secure, and capable of automated payroll processing, reporting and analytics.	Payroll management outside the Board may cause payment errors and delays which can distract HCWs, negatively impact their well-being, and detract from their ability to focus on their core	**No**

		responsibilities. Integrating payroll with key HR applications is key to interoperability and cohesion.	
2	The State regularly conducts internal pay equity analyses across gender, race, and other demographics to ensure fair and equitable compensation practices.	Focusing on bridging pay disparity and remedying unfair compensation practices, boosts health worker morale and improves patient care and outcome.	**Partial**
3	The State's HRH budget is aligned with its strategic workforce planning, informing ongoing refinements to the financing strategy to ensure that these investments directly support the systems' evolving staffing and skill requirements.	Alignment between funding and the evolving staffing and skill requirements helps prevent inefficient resource allocation and directing funding towards areas that do not align with the State's strategic priorities.	**Yes**

6.2 Operational Data & Archetypes

#	Components	Operational Data Archetypes	Frames	Type/Status	Description	Improvements?
1	**Analytics, Forecasting & Planning**	Annual Operating Plan (AOP)	State	Automated Active	Annual Operating Plan (AOP), a planning document that outlines implementation activities and strategies for the coming year. The state utilizes a combination of reviewing historical data and conducting manual analysis of current staffing levels, workload, and patient demand to determine staffing needs and identify any gaps or areas that require attention. This is incorporated into the AOP.	The HRHMIS not only aids in talent acquisition and management but could also facilitate strategic planning for workforce exits using advanced analytics and forecasting techniques
2	**HRH Management & Administration**	HRHMIS	State	Automated Active	A comprehensive software platform designed to manage and streamline various human resource functions across the PHC system.	Promote awareness and offer comprehensive training to staff and managers regarding the implementation and utilization of the HRHMIS platform that is streamlined through the adoption of standardized guidelines and protocols, and a user-friendly interface. Furthermore, it

					Kano State is a pioneer in the development and deployment of a functional HRHMIS that is managed and enhanced by local talents. This application has features and the ability to manage mundane HRH processes such as employee enrollment, validation and audit, deployment/transfer, as well as leave, retirement & attrition management. Unfortunately, this platform is not being utilized to its fullest.	can be integrated with attendance tracking and scheduling components to foster seamless coordination. Include health professionals of all sectors (public and private) and all types (voluntary, casual, permanent etc)
		Workforce Registry	National	Automated Active	A centralized professional database that collects, maintains, and provides access to information about health workers' credentials, qualifications, and employment status.	Promote awareness and offer comprehensive training to staff and managers regarding the value of an UpToDate statewide workforce registry. Include health professionals of all sectors (public and private) and all types (voluntary, casual, permanent etc.)
		Nominal Roll/Facility Staff List	State	Paper-based Active	A document that provides a comprehensive overview of the health	Improving and implementing HRHMIS as a statewide repository of HRH data is a more desirable replacement for manual staff list with enhanced accuracy,

					workers at a specific healthcare facility. It is usually paper based without a standardized format between facilities and across all units and it generally excludes the list of volunteers and temporary/casual staff. The existing State HRHMIS possesses capabilities to deal with many of these challenges but has not been used across the healthcare system. It maintains a reasonably dependable registry of healthcare professionals, encompassing their demographic information and educational credentials, although, presently, updates to this dataset are only executed following ISS or as necessitated by specific circumstances.	completeness, security, and ease of management. Additionally, implementing an employee self-service portal would enhance data accuracy, streamline administrative processes, and empower employees to take control of their own information, ultimately improving overall HR practices.

		Attendance Register	State	Paper-based Active	Employees are required to manually sign in and out on a physical attendance register indicating their arrival and departure times each day.	Implement a biometric attendance monitoring system to address the deficiencies of paper-based systems, enhance data security, and enable seamless integration at scale. Enhance HRHMIS to support multimodal biometric capability and offline functionality. Convert staff documents from images to e-files.
		Movement Register	State	Paper-based Active	A movement register also exists in the facilities to track HCW whereabouts during official hours.	
		Assessment Register	State	Paper-based Active	The HRHMIS does not support data capture for staff without biometrics and staff documents are images and not e-files.	
		Leave Application Letter/Form	State	Paper-based Active	A handwritten or typed application by staff seeking permission to proceed for an eligible leave. Although a standard leave form exists, it is yet to be deployed to the health facilities. Despite the availability of a leave management module within the HRHMIS that	Promote awareness and offer comprehensive training to staff and managers regarding the implementation and utilization of the HRHMIS leave management module that is streamlined through the adoption of standardized guidelines and protocols, and a user-friendly interface. Furthermore, it can be integrated with attendance tracking and scheduling components to foster seamless coordination.

					offers the convenience of leave application and approval, its utilization by staff and managers appears to be limited.	
		Leave Roster	State	Paper-based Active	An annual vacation calendar that outlines the planned vacation days for health workers in a facility	
		Employee Deployment & Transfer System	State	Paper-based Active	The current practice is a paper-based system for deploying and transferring employees between facilities which lacks an accountability framework. Sometimes employees may not show up at their duty stations on time, resulting in operational disruptions and reduced productivity. Additionally, the absence of a comprehensive tracking system precludes a clear line of sight on staffing	Promote awareness and offer comprehensive training to staff and managers regarding the implementation and utilization of the HRHMIS transfer module that is streamlined through the adoption of standardized guidelines and protocols, and a user-friendly interface. Furthermore, it can be integrated with attendance tracking and scheduling components to foster seamless coordination.

					situations which can lead to imbalances in staffing levels, with overstaffing in urban centers and understaffing in rural facilities.	
3	**Productivity & Performance Management**	Annual Performance Evaluation Form (APER)	State	Paper-based Active	A formal document used to assess and evaluate the performance of health workers over a given year. An appraisal module exists in the HRHMIS but is not being regularly utilized. Unfortunately, this paper-based document poses challenges as handwritten evaluations may be illegible, incomplete, or inconsistent, and copies of the APER form are placed in the employee's physical file, which can be misplaced or lost over time.	Promote awareness and offer comprehensive training to staff and managers regarding the implementation and utilization of the HRHMIS performance evaluation module that is streamlined through the adoption of standardized guidelines and protocols, and a user-friendly interface. Furthermore, it can be integrated with attendance tracking and scheduling components to foster seamless coordination.

		Quality of Care (QoC) Tools	State	Paper-based Active	Tools used to assess the quality of healthcare service	Migrate to online service and integrate with productivity module
		Integrated Supportive Supervision (ISS) Tool	State	Paper-based Active	An approach to the management and oversight of health workers that aims to improve the quality and effectiveness of healthcare service delivery	These oversight visits are too infrequent and too narrow to achieve impact. It is possible to extend both depth and frequency by incorporating digital supervision and monitoring tools, telemedicine & virtual mentoring tools or VLEs
4	**Talent Management**	Knowledge & Skill Assessment Tool (KSAT)	State	Automated Active	An ODK based generic tool for assessing Health Worker knowledge and skills across the KSPHCMB. This is a relatively new tool designed and trialed in the last 12 months.	Implement knowledge and skill assessment with HRHMIS, provide intensive training and design an accompanying SOP to harmonize its usage and interpretation.
5	**Retirement & Attrition**	Retirement, Withdrawal & Resignation Form	State	Paper-based Active	RWR is a paper-based document that an employee completes (generally 3 months ahead of time) to signify the start of the retirement process.	Enhance and incorporate RWR in HRHMIS for effective turnover management and to mitigate workforce loss.

6	**Compensation & HRH Financing**	Payroll Application	State	Automated Active	A specialized payroll processing software that handles the payment of monthly salary and benefits. Kano state has adopted and implemented PHCUOR, but the management of HRH payroll operation remains with the MoLG.	Transition to an enhanced HRH and payroll system that eliminates spreadsheet intermediary, which will be operated and managed by the Board in the spirit of PHCOUR, thus enhancing efficiency, accuracy, and transparency in HR and payroll operations. Integration with an employee biometric attendance program will further streamline workforce management eliminating manual data entry and reducing the chances of errors or fraudulent practices.
		Excel, Google Sheet	State	Automated Active	Spreadsheet file that contains salary details of health workers with bank information that is uploaded to a bank's payment gateway. This is unsecured, corruptible and has the potential of exposing workers' sensitive information.	

6.3 Identifying Gaps & Opportunities for Improvements from the Desk Reviews, Landscape Assessment, and KIIs Validation Sessions

Efficient management of healthcare services requires accurate, up-to-date data on the health workforce. Kano State, like many others, faces significant challenges in this regard. The State experiences a considerable shortage of healthcare professionals, including doctors, nurses, and midwives, while some cadres, such as CHEWs and EHOs, are in surplus. This lopsided distribution has the potential to negatively impact the quality and accessibility of healthcare services across the state. Examining the operational data landscape reveals critical shortcomings that could hinder effective healthcare delivery.

While the KSPHCMB operates a functional HRHMIS, its potential is undermined by limited utilization at the center and insufficient infrastructure and human capacity at the facility level. This leads to a lack of access to staff information at healthcare facilities and delays in propagating operational data to the central system. Important documents such as registrations and licenses are not adequately maintained or accessed at the facility level. Additionally, the HRHMIS is not optimally utilized for managing staff training needs and histories.

Nevertheless, the existing system is incapable of conducting ongoing audits and real-time workforce planning, exacerbating the health workforce imbalance. Recruitment often occurs without considering factors such as changing community demographics, population expansion, and disease burden, resulting in a mismatch and a shortage of healthcare professionals.

Additionally, there is a disconnect between training facilities and healthcare service delivery institutions, leading to a mismatch between the skills of healthcare workers and the actual needs of the community. Also, Efficient deployment and monitoring of healthcare personnel are crucial for effective workforce management. However, the current system falls short in this area. Deployment and transfers are not based on rigorous need assessments, and reliable mechanisms for monitoring and reporting health worker attendance are absent, undermining effective workforce management and healthcare service quality.

A significant gap exists in reliable methods for tracking health worker productivity. Relying solely on aggregate statistics provides limited insight into individual worker

performance and hinders timely intervention. Individualized productivity tracking enabled by biometric attendance monitoring is crucial to prevent burnout, improve outcomes, and enhance employee and patient satisfaction.

Furthermore, the lack of integration between the HRHMIS and the payroll processing platform prevents valuable insights into potential connections between poor productivity and health worker demotivation due to delayed or inadequate remuneration.

Addressing these challenges in healthcare workforce management is crucial for Kano State to enhance the quality and accessibility of healthcare services.

6.3.1 Gaps-Opportunity Matrix

#	Components	Gaps	Opportunities for Improvement
1	**HRH Landscape Visibility**	**HRHGP1:** The existing system does not conduct ongoing audits and workforce planning in real-time, which worsens the imbalance in the health workforce. Recruitment often occurs without a granular understanding of manpower needs, failing to consider factors such as natural attrition, resignations, retirements, population expansion, changing community demographics, or disease burden.	Implementation of the **biometric attendance monitoring** would enable the monitoring and reporting of daily health worker presence, including at rural facilities, ensuring accountability, and improving workforce management
2	**Payroll Linked Biometric HRHMIS**	**HRHGP2:** There is a lack of linkage between the HRHMIS and the payroll processing platform. This lack of interfacing hampers the ability to derive useful insights into potential connections between poor productivity and health worker demotivation resulting from delayed or insufficient remuneration	**Enhance the HRHMIS by linking with payroll and the biometric attendance monitoring systems**. Establishing this linkage would enable the analysis of connections between productivity and wages, help plug loopholes, reduce waste, and ensure timely and accurate payment of salaries in compliance with regulatory and tax guidelines. It will also promote equity and provide a line of sight to HRH-related finances. Furthermore, it will support the implementation of a reward system based on performance, enhance transparency, accountability, and efficiency in the payroll processing

3	**Accessibility of employee record**	**HRHGP3:** The maintenance and accessibility of staff files at healthcare facilities are currently deficient, with a lack of accompanying copies of essential credentials, licenses, registrations, and related documents. These shortcomings can be attributed to underutilization of the existing HRHMIS system. Consequently, the effective management and utilization of staff information and critical documents at the facilities are compromised.	It is imperative to ensure the provision and upkeep of appropriate computing and connectivity infrastructure to fully harness the capabilities and explore the potential of the existing HRHMIS. Optimize existing HRHMIS with biometric integration and feature enhancement to improve productivity and remove performance barriers. Develop SOPs to standardize HRH operational data management across the continuum of the KSPHCMB workforce. Extensive training programs must be implemented, extending to staff members at all levels, including those at the facility level. Expand the optimized HRHMIS implementation to LGA and facility levels
4	**Efficient Deployment and Monitoring of HCWs**	**HRHGP4:** Efficient deployment and monitoring of healthcare personnel are crucial for effective workforce management. Unfortunately, the current system falls short in this area. Deployment and transfers of healthcare workers are not based on rigorous need assessments. Even when deployments occur appropriately, there is an absence of reliable, consistent, and accurate means of monitoring and reporting the ongoing attendance of health workers at their assigned facilities. This lack of oversight hampers effective workforce management and undermines	Implement a robust biometric attendance program to not only resolve employee deployment and attendance challenges but also promote gender mainstreaming by ensuring equal treatment, transparency, and accountability. It eliminates bias and discrimination in attendance tracking, providing a level playing field for employees of all genders. The data generated by the program enables the KSPHCMB to identify and address gender-specific attendance disparities, promoting work-life balance and equal access to opportunities. It also helps evaluate the effectiveness of gender-responsive policies, leading

		the quality of healthcare services.	to improved gender equity and inclusion within the healthcare system
5	**Balanced Workforce**	**HRHGP5:** There is a **Rural-Urban imbalance** in the distribution of health personnel leading to disparities in access to healthcare, increased burden on urban healthcare facilities, health disparities and inequities, higher workloads for rural health personnel, recruitment and retention challenges, limited preventive and public health services, increased healthcare costs, and population migration from rural to urban areas.	A comprehensive workforce needs assessment should be conducted to determine the optimal distribution of healthcare professionals across different areas of the state. Policies and incentives can be developed to encourage healthcare professionals to work in rural areas. Transfer and deployment should be implemented based on the need assessment and enforced by the biometric system to ensure fair and equitable distribution of healthcare workers.
		HRHGP6: Kano State PHC HRH experiences a **skill-mix mismatch** between the competencies of the healthcare workers and the actual needs of the community. Some cadres, such as CHEWs and EHOs, are in surplus while others are in short supply. This distribution negatively impacts the quality and accessibility of healthcare services.	Establishing partnerships with educational institutions can encourage pre-service institutions to align their admissions and curricula to the needs of the State. Regular forums for dialogue and feedback between training institutions, KSPHCMB leadership, and community representatives should be established and involve bidirectional data sharing. Joint programs and partnerships can be developed to ensure that the training provided aligns with the needs of the community.

6	**Productivity Tracking**	**HRHGP7:** Reliable tracking of health worker productivity is essential for timely intervention and performance improvement. Relying solely on aggregate statistics on a weekly or monthly basis provides limited insight into individual worker performance and is often too late for timely intervention.	Biometric attendance monitoring can enable individualized tracking of health worker productivity, helping prevent burnout, improve outcomes, and maintain employee and patient satisfaction. Develop HRH Dashboard for tracking personnel and productivity KPISs to support workforce planning and administration. Pipeline data from legacy systems including the HRHMIS, NSHIP, and DHIS2 databases to allow a broad-based contextual analysis of HW productivity. Strengthen the capacity of leadership and HRH officers (in health facilities, LGA, PHCs, KSPHCMB, SMOH, and BS) to collect, synthesize, analyze, and present HRH data for decision-making. Regular feedback and performance evaluations should be provided to health workers based on productivity data. Support quarterly decision support meetings by SMoH, KSPHCMB and PHC leadership

6.4 Synthesis of Findings & Recommendations

6.4.1 HRH Analytics, Forecasting and Planning

The state has adopted a proactive approach to HRH planning and has made significant progress in developing a comprehensive HRHMIS, but its full utility as a planning tool has been constrained by poor adoption which makes the data incomplete and inconsistent, undermining the accuracy and reliability of workforce planning or strategic decision-making. One of the key challenges is the absence of a comprehensive HRH planning and forecasting module that can effectively support evidence-based

decision-making. Furthermore, there is a need to align facility-level reporting with state-level reporting tools, as the lack of seamless integration and data transfer between these levels hinders the state's ability to consume or contribute its data to national health worker repositories in a comprehensive way.

6.4.1.1 Recommendations

1. Enhance the HRHMIS by implementing an HRH forecasting and planning dashboard and incorporating advanced statistical and machine learning techniques to strengthen the state's HRH planning and forecasting capabilities. Forecasting techniques should also factor in demographic shifts, disease burden dynamics, and worker attrition.
2. Establish a comprehensive State Health Workforce Registry to capture the full breadth of health practitioners across all sectors (public, private, and independent) and all employment types (voluntary, casual, permanent, etc.) and integrate the same with the HRHMIS.
3. Align facility-level reporting via the HRHMIS with the State Health Workforce Registry by developing a clear data flow process, data mapping and the use of APIs to automate and safeguard data transfer along the continuum

6.4.2 HRH Production

While the production of health workers in the State is insufficient to meet needs, there is in addition, a concerning disconnect between pre-service training institutions and the healthcare delivery needs. These institutions are generally regulated by federal councils and commissions (NUC, MDCN, NMCN, and AHPCN), thus the state has limited control over their curricula or enrollment policies. This lack of state-level influence is particularly problematic, given the proliferation of unlicensed and unsupervised training institutions that produce graduates who are unqualified and unfit for immediate engagement in the healthcare sector.

The state does play an active role in pre-service training and upholds national competency standards and curricula, but there remain significant gaps in tracking enrollment, graduation rates, and the alignment of these training programs with the state's healthcare service needs.

6.4.2.1 Recommendations

4. Promote collaboration between the SMoH and all pre-service training institutions to better align training with healthcare delivery needs. Strengthening the linkage between these institutions and the state's annual workforce needs can ensure adequate production of qualified health workers.
5. Liaise with regulatory federal institutions to ensure that the curriculum, competencies, and graduate output are tailored to the evolving healthcare service requirements and address the mismatch between graduate output and service needs.
6. Develop robust mechanisms to track enrollment, graduation rates, and employment of health workers and utilize this data to inform the planning and adjustment of training capacity and specialization to match healthcare service needs.

6.4.3 HRH Management and Administration

The assessment has revealed significant challenges that hinder the effective deployment, monitoring, and management of healthcare workforce data. The predominance of manual, paper-based processes has led to issues such as data inaccuracy, incompleteness, security vulnerabilities, and inefficiencies.

The deployment and monitoring of healthcare workers face critical gaps, with deployment and transfers not based on rigorous need assessments and reliable mechanisms for monitoring and reporting health worker attendance being absent. Moreover, assessments of the HRH landscape reported a significant imbalance in the distribution of healthcare workers, with a rural-urban mismatch and skill-mix imbalance. This negatively impacts the quality and accessibility of healthcare services, as some cadres are in surplus while others are in short supply.

The current attendance management system is manual, unreliable, and corruptible, with limited utility. The implementation of the Task Shifting and Task-Sharing (TSTS) methodology faces several challenges, including outdated and non-standardized staff lists, lack of data on health worker productivity, caseload, and competence, as well as unmet healthcare needs and service gaps not being tracked regularly.

6.4.3.1 Recommendations

7. Implement a robust biometric attendance monitoring system to enable real-time tracking and reporting of health worker presence, including at rural facilities, promoting accountability, improving workforce management, and supporting gender mainstreaming.
8. Conduct a comprehensive workforce needs assessment to determine the optimal distribution of healthcare professionals across the state and develop policies and incentives to encourage healthcare professionals to work in rural areas.
9. Improve deployment and management of the health workforce, including tracking of voluntary/temporary workers, distribution of workers between rural and urban facilities, and support the achievement of the minimum service package standard.
10. Migrate to biometric attendance management while exploring strategies to reduce the cost of implementation at scale and enhance the HRHMIS to support multimodal biometric capability and offline functionality.
11. Enhance and maintain an up-to-date HRHMIS with all necessary data for TS&TS implementation, implement a comprehensive integrated Performance Management System, develop, and implement competence assessment mechanisms and tools, and integrate training and competence data in the HRHMIS.
12. Expand the use of Electronic Medical Records (EMR) to identify service gaps and integrate with the HRHMIS, redefine the scope of practice for cadres involved in TSTS, and implement and maintain a Quality Assurance (QA) mechanism.
13. Explore the integration of digital supervision and monitoring tools, telemedicine & virtual mentoring tools, or virtual learning environments (VLEs) to enhance the depth and frequency of Integrated Supportive Supervision (ISS) activities and improve the quality and effectiveness of healthcare service delivery.
14. Expand the deployment of HRHMIS down to facility level and institute change management to facilitate adoption

6.4.4 HRHMIS

The Board has developed an in-house HRHMIS platform, which, despite significant limitations, is an important initial step that can be enhanced. The key challenge is the lack of widespread adoption, largely due to inadequate awareness, sensitization, and training among staff and managers regarding the platform's benefits and potential. This has resulted in poor utilization of critical features such as leave management, staff deployment or transfer, evaluation, and retirement.

Moreover, the HRHMIS faces technical and operational gaps, including incorrect leave application and approval processes, security, and privacy risks from using Excel and Google Sheets for data transfer, inability to handle leave resumption dates and calculations automatically, and inaccessibility offline. The system also lacks integration with the payroll processing platform and biometric attendance monitoring, limiting its ability to provide real-time workforce audits and planning.

6.4.4.1 Recommendations

15. Improve data quality, timeliness, and reliability within the HRH information system to enable accurate analytics, forecasting, and planning.
16. Integrate the HRHMIS platform with attendance tracking, scheduling, and other HR components to enable seamless coordination and data management.
17. Enhance staff productivity and leave management by:
    1. Implementing regular performance evaluations for all staff
    2. Standardizing the methods and tools used for staff appraisals and performance evaluations.
    3. Ensuring all facilities have established shift schedules and leave management processes.
    4. Improving the leave management features, including automatic resumption date handling and leave day calculations.
    5. Fixing the leave application and approval process flow
18. Digitize and integrate all paper-based operational data and archetype systems (staff lists, leave applications, performance evaluations, etc.) into the HRHMIS platform to improve data accuracy, completeness, security, and ease of management.
19. Address the technical, organizational, and capacity-related challenges hindering the widespread adoption and optimal utilization of the HRHMIS by:
    1. Promoting awareness and providing comprehensive training to staff and managers on the implementation and utilization of the HRHMIS platform
    2. Enhancing the HRHMIS by linking it with the payroll processing platform and the biometric attendance monitoring system
    3. Optimizing the existing HRHMIS with biometric integration and feature enhancement
    4. Developing SOPs to standardize HRH operational data management.
    5. Implementing extensive training programs for staff at all levels
    6. Promoting widespread adoption of the HRHMIS and providing necessary infrastructure and training
    7. Separating the next of kin and professional license information

8. Excluding the use of Excel, Google Sheets, and paper-based processes for data transfer and storage
9. Implementing biometric technology and support for multi-modal machines to capture staff documents and verify NINs and BVNs
10. Developing a statewide health worker registry for practitioners in the public, private, and independent sectors
11. Creating a service-wide HRH dashboard for data analytics and decision support

6.4.5 HRH Productivity and Performance Management

6.4.5.1 Integrating Evaluation with Professional Development:

The current performance evaluation system for healthcare professionals relies on a standardized national document. However, this standardized approach may not adequately address the sector's unique priorities and competency requirements. One key issue is the lack of integration between the performance evaluation process and opportunities for continuous professional development. Ideally, the evaluation system should be closely tied to personalized training and growth opportunities for each healthcare worker. For example, the evaluation process could identify specific areas where a clinician needs to strengthen their skills or knowledge. This could then directly inform an individualized professional development plan, with the Board providing tailored training, mentorship, or other resources to address those gaps.

Conversely, participation in continuing educational activities and demonstration of new competencies gained should be reflected in the performance review. This would create a seamless feedback loop between evaluation and professional development.

By more closely integrating these two important processes, the KSPHCMB can ensure its workforce is continuously enhancing the critical skills and expertise needed to provide high-quality patient care. The performance evaluation system would become a more meaningful and effective tool for both assessing current capabilities and driving future growth.

6.4.5.2 Productivity Tracking:

The lack of individualized productivity tracking hinders timely intervention and performance improvement. Reliance on aggregate statistics provides limited insight

into individual worker performance, making it challenging to identify areas for targeted support and development. Furthermore, the absence of robust performance management frameworks means that the collected data is not directly aligned with the operational and strategic needs of the healthcare system. To rectify this, it is essential to establish an HRH dashboard for tracking personnel and productivity key performance indicators (KPIs). This will support workforce planning and administration, provide regular feedback and performance evaluations to health workers, and facilitate quarterly decision support meetings for data-driven decision-making.

6.4.5.3 Performance Management Systems:

Currently, there is no specific performance management and productivity tracking system in use, and the state is only experimenting with EMR implementation in a few secondary facilities. To address this, a comprehensive performance management system should be developed to track and compare staff productivity, quality of care, and patient satisfaction across the regular and temporary staff. Additionally, the implementation of a performance management and productivity tracking system, potentially layered upon a biometric attendance system, and the fast-tracking of EMR and telemedicine platforms will support data-driven decision-making.

6.4.5.4 Recommendations

20. Develop a more tailored performance evaluation tool that leverages weighted scoring and multiple variables to assess the knowledge and skills of health workers, aligning with the specific needs and context of the healthcare system.
21. Introduce professional, general, and current affairs exams as part of the promotion process. This would involve implementing a standardized and structured promotion procedure that includes examinations. The promotional exams should incorporate components focused on professional expertise, general knowledge, and awareness of current affairs. This holistic approach to evaluating candidates will help the state make more informed and merit-based promotion decisions, while also identifying and addressing any skills or knowledge gaps within the workforce.
22. Establish robust performance management frameworks by collaboratively defining key performance questions and priorities with stakeholders, mapping the performance questions to relevant operational data archetypes, and integrating performance management frameworks across the healthcare ecosystem.
23. Migrate to a digital performance assessment process to streamline the performance

evaluation system and enhance data-driven decision-making.

6.4.6 HRH Talent Management

6.4.6.1 Fragmented Record-Keeping:

The state's talent management approach is hindered by a fragmented approach to record-keeping and data integration. The lack of a centralized and real-time data infrastructure to collect and analyze workforce data, including skills gaps, turnover rates, diversity metrics, and employee engagement, impedes the ability to inform strategic talent initiatives. This fragmented approach to data management creates gaps in the availability of accurate and up-to-date information, making it challenging to develop and implement effective talent management strategies.

6.4.6.2 Absence of An Integrated Talent Management Platform:

The state has mechanisms in place to track and incentivize health workers professional development, but it lacks an integrated talent management platform to streamline and automate key talent management functions. This results in inefficiencies and duplication of efforts, as various teams (HRH and Training) manage talent-related activities in a siloed manner.

6.4.6.3 Gaps in Talent Management Processes:

The state's talent management approach is characterized by several notable gaps. There is a lack of central control and coordination over the various training activities conducted. Training records are duplicated across Excel spreadsheets and the Human Resources for Health Management Information System (HRHMIS), resulting in inconsistencies. The tools used for assessing training needs and evaluating skills and knowledge are inadequate. Mechanisms for tracking and archiving training activities are lacking. Additionally, there is an absence of a gatekeeping module to prevent abuses in the assignment of training. Workflow duplication exists between the Human Resources for Health (HRH) and Training teams. In-service training lacks proper counseling and monitoring. Finally, the HRHMIS is significantly underutilized as a tool for managing the state's training programs.

6.4.6.4 Recommendations

24. Establish a robust, real-time data infrastructure to collect and analyze workforce data, including skills gaps, turnover rates, diversity metrics, and employee engagement, to inform strategic talent initiatives.
25. Implement an integrated talent management technology platform to streamline and automate key talent management functions, such as workforce planning, recruitment, hiring, engagement, and staff recognition.
26. Expand talent management initiatives, including in-service training, gender mainstreaming, and specialized disease-specific training, to enhance the skills and competencies of the health workforce.
27. Migrate all training activities to the HRHMIS, centralizing training planning and execution under the Director of Administration and HR.
28. Enhance the HRHMIS to address identified gaps in training management, including the implementation of alerts, archiving, and a virtual learning platform, as well as the enhancement of skills and knowledge assessment tools.
29. Create a local government training committee for in-service training counseling and screening to ensure the effective deployment and utilization of training resources.

6.4.7 HRH Incentives/Rewards and Sanctions Administration

The state's current approach to Annual Performance Evaluation (APER) is non-standardized and manual, lacking a structured process for identifying skill and knowledge gaps before promoting employees. Furthermore, there is no incentivized staff appraisal model in place. This can lead to suboptimal staffing decisions, due to the lack of comprehensive understanding of the competencies and development needs of the workforce. Additionally, linking rewards and recognition to employee performance and contributions is a crucial aspect of motivating and retaining a high-performing workforce.

6.4.7.1 Recommendations

30. Investigate the key drivers of employee satisfaction and morale, as well as patterns of misconduct or performance issues, to inform appropriate incentive and disciplinary mechanisms.
31. Create an incentivized model for staff appraisal. This would involve developing a comprehensive performance evaluation system that directly links employee attendance and performance to various rewards and recognition. The appraisal model should incorporate KPIs and goal-setting mechanisms to ensure that individual employee objectives are aligned with the State's strategic priorities. Furthermore, the state should implement a system of both financial and non-financial incentives, such as recognitions, promotions, and career development opportunities, to effectively motivate and retain top talent. Critically, the staff appraisal process must be transparent, fair, and consistently applied across the entire organization.

6.4.8 HRH Retirement and Attrition

The current retirement, withdrawal, and resignation (RWR) management approach is largely manual, leading to inefficiencies and potential errors in the computation of retirement benefits. Furthermore, the lack of digital reporting and notification mechanisms for upcoming retirements hampers the state's ability to engage in proactive workforce planning and ensure the timely replacement of departing employees. There is also the absence of an alert mechanism to remind health workers of their impending retirement. Such a system could greatly assist health workers in preparing for the transition and facilitate a smooth handover of responsibilities. Additionally, the state does not actively monitor the staff-to-population ratios to ensure adequate healthcare workforce density. This is critical in maintaining the appropriate level of healthcare staff, essential for providing quality and accessible services to the population.

6.4.8.1 Recommendations

32. Strengthen the overall retirement and attrition processes. This includes ensuring that staff are aware of the retirement procedures and that retirement notices are consistently provided by the appropriate authorities. Additionally, the state should develop a standardized process for managing voluntary staff withdrawals, including clear guidelines and procedures, to enhance the transparency and efficiency of these processes.
33. Implement an alert mechanism to remind health workers of their upcoming retirement, and to establish a process for regularly monitoring the staff-to-population ratios. Developing and integrating a retirement alert system within the HRHMIS would allow health workers to be notified in advance of their impending retirement, enabling them to plan for the transition accordingly. Additionally, the state should institute a robust process to regularly track and assess the staff-to-population ratios, ensuring that the healthcare workforce density is maintained at optimal levels to meet the population's healthcare needs.
34. To further improve the management of retirement data, the state should work towards enhancing the HRHMIS to handle and process retirement operations. This would involve fully automating the computation of pensions and other retirement benefits, as well as implementing retirement alerts and data analytics for attrition forecasting within the HRHMIS. These measures would enable more proactive workforce planning and the timely replacement of departing employees.
35. The state should closely monitor retirement and attrition trends, particularly among female health workers. Analyzing the data, including gender-disaggregated information, would help identify any patterns or trends that may require targeted interventions. Based on these insights, the state can develop strategies to address the gaps and vacancies resulting from retirement and attrition, ensuring that the healthcare system maintains the necessary workforce capacity to deliver quality services.

6.4.9 HRH Compensation and HRH Financing

The payroll workflow approach is fragmented and multifocal, which introduces vulnerabilities to errors, fraud, and mistakes. This fragmentation undermines the integrity and reliability of the payroll processes. Moreover, the reliance on unsecured spreadsheet files to manage sensitive employee information exposes the system to potential breaches and data compromises, jeopardizing the confidentiality and security

of critical personnel data. Another crucial gap identified is the lack of oversight and integration within the payroll system. The KSPHCMB does not have a standing committee in place to review and approve salary changes, and the salary management process operates outside its purview. This absence of oversight and coordination diminishes the state's ability to ensure the accuracy and appropriateness of salary adjustments. Furthermore, the payroll system is not integrated with staff biometrics and the HRHMIS, which hinders comprehensive workforce management and oversight. This lack of integration impedes the state's capacity to effectively monitor and manage its healthcare workforce.

6.4.9.1 Recommendations

36. Conduct a comprehensive review of the HRH financing structure to ensure adequate and equitable resourcing of the healthcare workforce. This review should evaluate the budget allocation for rural incentives, training, and salary levels, ensuring that these crucial aspects are appropriately funded. Additionally, the state should create an HRH financing dashboard to provide real-time metrics and decision support for effective resource allocation and workforce planning.
37. By implementing these recommendations, the state can enhance the integrity, transparency, and efficiency of the healthcare worker compensation and financing systems. This will not only improve the overall satisfaction and motivation of the healthcare workforce but also contribute to the sustainability and effectiveness of the healthcare system in meeting the population's needs.

6.4.10 The Interplay of Sociopolitical Factors in HRH

Unlike the upgrading of infrastructure or the updating of commodities in the healthcare sector, any proposed realignment of human resource for health (HRH) operations requires a thorough consideration of a wide range of sociopolitical factors and their potential impact on the receptiveness or resistance towards the change management process. This assessment must account for the complex interplay of these factors, as each health worker may have close relatives who wield influential power capable of derailing unfavorable deployment or disciplinary action. While there is no scientific formula for predicting how these sociopolitical factors will interact with proposed changes, failing to adequately plan for their influence is a sure plan to fail.

6.4.10.1 Political Dynamics:

The current administration and health sector leadership in Kano State have demonstrated a strong political will towards improving the state of the health workforce in the state. This is especially evident in their commitment to investing considerable time and effort in this assessment and mandating their officers to provide maximum cooperation. In addition to seeking the support of partners, the state has also signaled a willingness to provide counterpart funding towards improving the health sector, with a particular focus on HRH. However, the state of Kano is known for its vibrant and competitive political landscape, with various power structures and factions jockeying for control and pursuing diverse interests. Any HRH initiative may be viewed through the lens of political interests. Opponents of such initiatives may seek to undermine or politicize them, seeing these as an opportunity to score political points. Furthermore, entrenched interests that benefit from the existing dysfunction could mount resistance to maintain the status quo.

Therefore, the challenge lies in the will and ability of the state leadership to withstand the tide of strong influence that may arise against the proposed HRH initiatives. The political dynamics and vested interests within the state could pose significant obstacles to the successful implementation of these changes.

6.4.10.2 Religious and Cultural Considerations:

The northwestern region of Nigeria, including the state of Kano, is predominantly Muslim, and religious identity plays a significant role in the area's sociopolitical dynamics. On the one hand, the tenets of Islam emphasize the importance of health workers being prompt, diligent, and empathetic in their duties. However, on the other hand, some Muslim clerics may advocate against the deployment of female health workers away from their husbands or demand that pilgrimage leave is an entitlement and should be granted unconditionally.

Any efforts to streamline HR processes in accordance with the established civil service rules and regulations may face resistance from these religious authorities. HRH operations transformation must, therefore, be carefully evaluated in terms of their potential impact on the delicate religious and ethnic balance within the state.

6.4.10.3 Governance and Institutional Capacity:

The implementation of HRH management changes in Kano state is heavily influenced by the existing institutional capacity, bureaucratic processes, and the level of coordination and cooperation between different government entities. The management of health worker payroll remains under the purview of the MoLG, despite prior efforts to centralize it together with the overall HRH management function under the KSPHCMB. There is also a general lack of centralized control and coordination between the PHCMB, the OHCS, and to some extent the SMoH in the management of HRH presenting a significant challenge. Addressing the fragmentation and improving coordination and cooperation between these key government agencies will be a crucial prerequisite for the successful rollout of any initiatives.

6.4.10.4 Community Engagement and Trust:

Effective community engagement and the establishment of trust with local stakeholders are crucial elements in a successful HRH enhancement. Healthcare workers, local communities, and other relevant stakeholders may have unique perspectives, concerns, and expectations regarding healthcare workers that could serve as either point of resistance or support. Incorporating these diverse viewpoints into a more inclusive and responsive approach is essential.

For instance, making health workers' salary payments contingent upon sufficient attendance, as implemented in the neighboring Gombe state, may not succeed in Kano at the outset. The local context and community dynamics must be carefully considered before adopting such an approach. While the implementation of a biometric attendance program holds the potential for positive impact, such as cost savings, it will likely require a balanced "carrot and stick" approach to gain the acceptance and cooperation of the health workforce.

Drawing on lessons learned from the implementation of similar programs in Bauchi and Kaduna states, it is imperative to couple the biometric attendance system with other incentives, such as rewards in the form of cash, recognition, approval for further training, or opportunities for promotion. This holistic approach to community engagement and trust-building will be crucial for the successful rollout and sustainability of any HRH management initiatives in Kano state.

6.4.10.4 Recommendations

38. Demonstrate strong political will to withstand resistance from opponents and entrenched interests who may seek to undermine or politicize the HRH initiatives.
39. Engage with various political factions and build a broad-based coalition of support to ensure the initiatives gain traction and withstand political pressures.
40. Account for the influential role of religious and cultural factors. Anticipate and mitigate potential resistance from religious authorities through inclusive and respectful dialogue.
41. Address the fragmentation and lack of coordination among key government entities involved in HRH management. Improve the centralized control and cooperation between these agencies as a critical prerequisite for the successful implementation of HRH initiatives.
42. Ensure effective community engagement and the establishment of trust with local stakeholders, including healthcare workers, labor unions and communities.
43. Employ a balanced "carrot and stick" approach, incorporating incentives such as promotion, awards/recognitions, opportunities for training as well as monetary rewards, to gain acceptance and cooperation for the HRH initiatives. Avoid penalty on salary at the early stages of these initiatives.

6.5 Process Improvement Plan

The HRH process improvement plan is about creating efficient processes that maximize productivity, retention, and engagement. Just as important, it is about making sure employees can do their jobs in a healthy, satisfying way. The process improvement plan provides an approach for improving operational data visibility to connect Kano State HRH Strategic Plan and BMGF performance strategies. For convenience, the PIP has been broken down into Quick Wins, Medium Term and Long-Term as depicted below:

Quick Wins

HRHIP1: Conduct a biometric audit of the state healthcare workers.

Ensure the accurate and reliable verification of the identity of healthcare personnel while meticulously gathering comprehensive demographic, educational, employment, and professional information from each healthcare worker. Employing scanning technology to digitally capture and securely store vital professional documents, creating electronic files that can be accessed with utmost security across the entire state. Execute the implementation of robust privacy and data security policies, adhering strictly to the guidelines set forth by the National Data Protection Act (NDPA) of 2023

HRHIP2: Implement an employee biometric attendance monitoring system to improve employee productivity.

Institute the implementation of a daily biometric attendance monitoring system at the facility level, while duly considering excused absences resulting from approved leave, in-service training, maternity leave, scheduled days off, or illness. The monitoring system should aim to achieve a specific performance level on the Absenteeism spectrum, allowing for the benchmarking of its performance against other entities like Gombe State, to assess and improve attendance management practices

HRHIP3: Implement biometric enabled payroll processing to reduce waste, automate payroll operations and eliminate ghost workers.

Execute the integration of the HRHMIS with the biometric-enabled Payroll system to establish a seamless and automated payroll operation. This integration will ensure the utmost accuracy in processing payroll transactions, mitigating errors, and minimizing potential vulnerabilities.

Medium Term

HRHIP4: Optimize existing HRHMIS with biometric integration and feature enhancement to improve productivity and remove performance barriers in existing workforce.

Data performance auditing and monitoring can help to optimize and enhance biometric functionality, usability, and scalability.

HRHIP5: Develop SOPs to standardize HRH operational data management.

Standardize and implement a range of SOPs to streamline data capture and process flows involving all HRH activities including advertisement of vacancies, application, interview, recruitment, onboarding, training, promotion, discipline, compensation, performance, and separation

HRHIP6: Develop HRH Dashboard for tracking personnel and productivity KPISs to support workforce planning and administration.

The board will be able to operate in a data-driven mode for all HRH operational decisions. These include the identification of individual employee training requirements and the detection of those with performance challenges. The performance of each facility can be closely monitored and assessed.

HRHIP7: Strengthen the capacity of leadership and HRH officers to collect, synthesize, analyze, and present HRH data for decision-making.

Comprehensive training and capacity building will be provided to key stakeholders involved in the healthcare workforce, spanning various entities such as health facilities, LGAs, KSPHCMB, SMOH, and the Bureau of Statistics. These stakeholders will receive training on essential skills related to the collection, cleansing, synthesis, analysis, and presentation of operational data specifically related to the healthcare workforce (HRH).

Long Term

HRHIP8: Support quarterly decision support meetings by SMoH, KSPHCMB and PHC leadership.

Facilitate and strengthen the implementation of quarterly decision support meetings, bringing together SMoH, KSPHCMB, and PHC leadership. These meetings will promote effective coordination, knowledge sharing, collaborative decision-making, and data-driven discussions.

HRHIP9: Expand HRHMIS implementation to LGA level.

To enhance the effectiveness and coverage of the optimized HRHMIS, there is a need to expand its implementation first to the LGA level. By doing so, it will enable comprehensive data collection, management, and analysis of human resources for health at the grassroots level to facilitate better tracking, monitoring, and planning of health workforce distribution, skills, and performance across the various LGAs,

HRHIP10: Expand HRHMIS implementation to facilities.

As with HRHIP9, this Performance Improvement shall see to the expansion of the HRHMS platform to the facility level

6.6 Process Workflows for HRH Operational Data

6.6.1 Overview and Rationale for Process Workflow Assessment

The rationale for process workflow assessment is to evaluate and improve the efficiency, effectiveness, and quality of the process or workflow. This involves analyzing the steps involved, identifying bottlenecks, and implementing changes to optimize performance, reduce errors, and enhance overall productivity of the healthcare system in Kano State.

The workshop was designed as a two-day boarding session focused on deep diving into the operational data archetypes identified during the Desk Reviews and FGD/KII sessions to understand the process workflows and reporting pain points achieved through existing operational data with the stakeholders from the Kano State Ministry of Health, Kano State Primary Healthcare Management Board (KSPHCMB), and Private Health Institutions Management Agency (PHIMA).

Day one focused on the prioritization of operational data, where various data archetypes were examined to determine if they are relevant or not to the entire process. The HRH group further looked at the operational data matrix, which detailed the various operational data archetypes, their brief description, who collects the data, how senior managers can generate insights from the data collected and who are the senior managers that these data are important to.

On the second day, the group took a deep dive into the various data archetypes and the schematics of their workflow processes. This was reviewed and validated with the stakeholders on the second day. At the end of the second day, a table of gaps and areas of improvement was developed.

6.6.2 Identifying current processes and functional workflows for operational data.

The current processes and functional workflows presented in Table 1 describes the list of operational data archetypes, the staff members assigned to each task or the HRH officers in charge of the data collection and how senior managers can generate insights from the data.

The various operational data archetypes and their importance for efficient HRH management and administration include:

1.) **Nominal Roll** (**Facility Staff List**): The nominal roll is a paper-based list of all employees in each facility and their demographics such as staff name/number, gender, designation, state of origin, date of birth, date of first appointment, date of present appointment and salary grade level, among others. This information is usually collected by the unit in-charge, facility in charge, facility monitoring, and evaluation officers and the LGA HRH Officer help senior managers gain insights into employees' database in the respective primary healthcare centers, generate reports for ISS and additional information on skills mix and additional qualification of the health workers in the facilities.

2.) **Admission Roll**: This is a tool for enrolling and registering healthcare professionals such as nurses, doctors, and other HCW into a database or system for the purpose of managing their training, deployment, and employment. This is a valuable tool for HRH management, as it allows policymakers to; track the number and type of healthcare professionals in the workforce, identify gaps and shortages in the workforce, develop targeted training and recruitment programs, plan healthcare staffing needs, monitor and evaluate the effectiveness of HRH interventions, among others. Administrative Officers, and HRH Officers can collect this data and feed it into the database. The admission roll is a critical component of HRHMIS, enabling informed decision-making and strategic planning to ensure a qualified and adequate healthcare workforce, giving insights to the Director General and other senior managers in the health sector.

3.) **Integrated Supportive Supervision (ISS) Tool**: The ISS platform integrates several checklists used by health partners when conducting integrative supportive supervision and makes this data easily accessible. The tool is web-based and can be used from a simple mobile device through an application. The solution is very easy to set up and can accommodate the input of data both online and offline. The solution enables GPS location, live signature and image capturing and storage, as well as the ability to download data and attachments for analysis and to accept or reject data submissions, as required.

4.) **Annual Operating Plan - AOP**: This is a strategic document that each MDA prepares to define its objectives and goals for the upcoming year. It is a comprehensive blueprint that includes; strategic objectives, detailed action plans, performance metrics, resource allocation, risk mitigation plans, among others. A well-structured AOP ensures that all employees understand their responsibilities and can coordinate their efforts to achieve

business objectives. It also enables senior managers to track progress, and request funding from the State Governor ahead of time.

5.) **Google Sheets**: These are electronic spreadsheets generated for employees whose thumbprints are not captured in the HRHMIS database. Google sheets generated by IT Officers enable HRH Officers and DAHR to gain insights into the status of all employees working at the PHCs at every point in time.

6.) **Talent Management Tool**: This is a tool generated by training officers in the Board. The talent management tool helps in workforce planning, acquisition, development, employment, and retention of staff in the facility. By this concept, senior managers (DPME, DAHR and DG) could gain understanding on how talent management can deliver value and impact for the employees, training gaps and the types of training required to enhance performance and productivity.

7.) Other operational data for functional workflows which ensure the efficient operation of healthcare services and optimize administrative tasks by managers include **leave rosters**, **annual performance appraisal forms**, **health workforce registry**, **transfer/deployment forms, retirement, withdrawal and resignation forms** and **attendance and movement registers**.

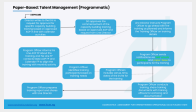
6.4.3 Understanding process workflows schematics for core functional workflows

Process workflow schematics are visual representations of a process. It outlines a sequence of steps from start to finish using multiple branching options at every decision point. In Figure 1 below, the workflow HRHMIS schematics for **new staff enrolment**, **staff validation**, **periodic staff audit**, **paper-based talent management**, **paper-based leave management**, **ODK-knowledge, and skill assessment tool** (**KSAT**), **paper-based annual evaluation**, **salary processing** (**payroll**), **paper-based promotion**, **paper-based talent management** (**in-service**), **paper-based retirement** and **paper-based talent management** (**programmatic**) **training** have been developed and validated with the stakeholders.

Efforts were made to document the process as it exists, and a gap and area of improvement table was also developed with input from the various stakeholders.

#	Component	Operational Data Archetype	Who Collects Data?	Usecase/Insight used from operational data	Business Rule	Detailed Link to Business Rule
1	**Analytics, forecasting & Planning**	Annual Operating Plan (AOP)	- M&E Officers in the health MDAs - Planning Officers in the MDAs - DPRS in the Health Sector - Planning Officer in MoBP - AOP Focal officers (in all the MDAs). - Planning Officers, DPRS	- Budget ceilings - Sectoral Budget allocation - Defines priorities - Alignment with National goals - Funding requirement - Funding gaps - Donor Contribution	1. Development of the State strategic health development plan (SSHDP) 2. Extraction of the Medium-Term Sector Strategy from the SSHDP 3. Extraction of the Annual Operation Plan from the MTSS 4. With the Annual Operation Plan, the health sector identifies funding sources 5. AOP approval and implementation 6. Monthly Departmental Annual Operation Plan Review 7. A quarterly MDA review is conducted 8. Annual Performance (APR) Review of the state budget.	
		Nominal Roll (Facility Staff List)	- Unit in-charge - Facility in-charge - Facility M&E Officers - LGA HRH Officers	- Access to employee database employed by the PHCs - Generation of reports for ISS - Provides additional information on skills mix, qualification		
2	**HRH Management & Administration**	HRHMIS - Leave Management	- Unit in-charge - Facility in-charge	- This module ensures that you gain the most insights that can be used for policy making		

		HRHMIS New Staff Enrolment	- Employee - Admin Officer - HRH Officer	- Enhanced data accuracy and completeness - Streamline data accessibility and retrieval - Advanced reporting and analysis		
		HRHMIS - New Staff Validation	- Admin Officer - HRH Officer - IT Officer	- Validation of information entered by staff at verification - Gives a snapshot of all enrolled and validated employees of the PHCs - A special list is also generated for employees whose thumb print could not be captured		
		HRHMIS - Periodic Staff Audit	- Admin Officer - HRH Officer - IT Officer	- Aids in identifying trends and patterns to reveal areas of strength and weakness - Leverages data analytic tools to uncover hidden insights and correlations		
		Paper-Based - Nominal Roll	- Unit in-charge - Facility in-charge - Facility M&E Officers - LGA HRH Officers	- Access to employee database employed by the PHCs - Generation of reports for ISS - Provides additional information on skills mix, qualification		

3	**Productivity & Performance Management**	Paper-Based: Attendance Management	- Employee - Facility in-charge	- They set the tone, enforce policies, and foster a culture of accountability - Managers also use technology to track attendance trends and make informed decisions. Ultimately, their leadership ensures a productive and healthy workforce. Does not show the list of staff that do not sign.		
		Paper-Based: Leave Management	- Employee - Facility in-charge	- This module ensures that you gain the most insights that can be used for policy making		
4	**Talent Management**	Paper-Based: Talent Management (Programmatic)	- Training Officer	- Demonstrate how talent management can deliver value and impact for the employer - You can also use talent analytics to manage the history of training and types with the number of personnel that have undergone these training. - It can also be used to identify training gaps		
		Paper-Based: Talent Management (In-Service)				
		HRHMIS - Talent Management				

		ODK - Knowledge & Skill Assessment Tool (KSAT)				
5	**Incentives/Rewards and Sanctions**	Paper-Based: Annual Evaluation	- Employee - PHCC (HOD) - Zonal Director	- These facilitate regular performance reviews and provide a basis for identifying areas of improvement and recognizing achievements. - Updated employee information - Recommendation for areas of improvement.		
6	**Retirement and Attrition**	Paper-Based: Retirement (Retirement, Withdrawal & Resignation Form)	- Employee			
7	**Compensation & HRH Financing**	Payroll: Salary Processing	- PHCC (HOD) - CPO - IT Officer			

6.6.4 Gap Identification in Operational Data Archetypes

A comprehensive analysis of these operational archetypes has revealed significant gaps in some of them, which could potentially limit their capacity to adequately address the strategic questions being posed. The following table examines the archetypes within the health sector that present challenges, while offering recommendations on areas for improvement, to strengthen the evidence-base for informed decision-making and targeted interventions.

Certain improvements identified represent low-hanging fruit, offering opportunities for swift and impactful interventions. Conversely, others require long-term, more complex endeavors. Nonetheless, pursuing these recommendations can bolster the state's ability to effectively monitor and evaluate the progress towards the desired HRH objectives.

#	Component	Subcomponent	Operational Data Archetype	Gaps Identified	Areas of Improvement
1	**HRH Production**	-	-	There is no synergy between pre-service training institutions and the healthcare delivery needs	- Promote collaboration between state healthcare organizations and all pre-service (i.e. undergraduate and graduate) training institutions.
2	**HRH Management & Administration**	HRHMIS - Leave Management	HRHMIS	- Poor adoption of this feature on HRHMIS - HRHMIS does not handle resumption dates automatically - Leave application and approval process flow is incorrect	- Enhance HRHMIS leave management features including the addition of automatic resumption date handling, consider including alerts - Update HRHMIS to automatically calculate leave days - Fix and update the HRHMIS flow of Apply -> Recommend -> Approve
		HRHMIS - New Staff Enrolment	HRHMIS	- Poor adoption of this feature on HRHMIS	- Promote adoption, provide necessary infrastructure for widespread access and provide sufficient training and orientation.
			Email, SMS - for validation	- Poor adoption of this feature on HRHMIS	
			Excel - for data transfer	- Privacy and security risk	- Exclude the use of Excel for data transfer
		HRHMIS - New Staff Self Update	HRHMIS	- Professional license and Next of Kin are combined	- Separate Next of Kin and Professional License in the menu
		HRHMIS - New Staff Validation	HRHMIS	- Data transfers using Excel and Google Sheets introduces security and privacy challenges - Staff documents are	- Enhance biometric technology and implement support for multi-modal machines - Update HRHMIS to support data capture for those without biometrics,
			Excel - for data transfer		
			Google sheet - for data		

			transfer Printables - reports and forms	images, not e-files - Does not capture NINs and BVN documents	and ensure offline functionality - Exclude the use of Excel or Google for data transfer - Convert staff documents to e-files - Capture and verify NINs and BVN documents in real-time
		HRHMIS - Periodic Staff Audit	HRHMIS Excel Google Sheet	- This process may not be necessary if biometric attendance is introduced and strengthened	- Implement robust biometric attendance to eliminate costly staff audits
		Paper-Based - Nominal Roll	Paper-Based	- Manual process - Does not capture voluntary, temporary, and casual staff	- Migrate to using the HRHMIS for generating and maintaining Staff List (Nominal Roll) - Develop and disseminate SOPs to streamline HRH operational data management - Include all types of staff; volunteer, temporary, casual, and permanent - Create a statewide health worker registry for practitioners in the Public, Private and Independent sectors - Create service-wide HRH dashboard for data analytics and decision support
		Paper-Based: Attendance Management	Attendance Register Movement Register Assessment Register	- Manual attendance taking - unreliable, inaccurate and corruptible with limited utility - Few biometric trial sites suggest high setup and maintenance costs, technical challenges - HRHMIS does not support	- Migrate to biometric attendance while exploring strategies to reduce cost at scale - Enhance HRHMIS to support multimodal biometric capability and offline functionality - Convert staff documents to e-files - Capture and verify NINs and BVN

3	**Productivity & Performance Management**			data capture for those without biometrics - Staff documents are images, not e-files - No dashboard to track attendance, tardiness and absences	documents in real-time
		Paper-Based: Leave Management	Excel	- Manual leave application and approval process - Many staff forfeit leave for unclear reasons	- Enhance and implement HRHMIS leave management module - Require staff to take annual leave and protect their leave periods
		Performance Management & Productivity Tracking System	NHMIS Registers ISS DHIS2 QoC Tools	- Although some performance and productivity data can be deduced from the NHIMS registers, there is no specific performance management tool in use - The state is experimenting with EMR implementation in only few secondary facilities	- Implement a performance management and productivity tracking system. This can be layered upon a biometric attendance system - Fast track EMR implementation, when it becomes widely in use, it can pipeline data for a PMS dashboard to inform KPIs - Consider the utilization of Telemedicine platform in conjunction with EMR to extend specialist care
4	**Talent Management**	Paper-Based: Talent Management (Programmatic)	Excel AOP Email, WhatsApp, SMS, Circular (Paper notification)	- Lack of central control of training - Duplicity of training records in Excel and HRHMIS - Lack of robust training needs assessment to identify training gaps - Lack of skills and knowledge assessment tools - Lack of training tracking	- Migrate all training activities to HRHMIS - Centralize training planning and execution with the Director Admin & HR - Enhance HRHMIS to resolve identified gaps in Training management - Implement alerts - Archive all training sessions for

				tools - for trainings undertaken, due or expired - Lack of recorded and archived training activities for step-down implementation - Lack of gatekeeping module to prevent abuses in training assignments - Workflow duplication in HRH and Training Teams	subsequent reuse - Create a virtual learning platform - Enhance skills and knowledge assessment tools to identify training gaps
		Paper-Based: Talent Management (In-Service)	Covering Letter, Temporary release (if abroad)	- There is lack of adequate counseling for staff needing to proceed for in-service training - The process is entirely manual - No mechanism of monitoring trainee progress and ensuring continued presence in approved program	- Create a local government training committee for pre screening and counseling inservice training applicants - The LG training committee council the staff before purchasing forms - Migrate to digital training management
			In-service training form		
		HRHMIS - Talent Management	HRHMIS	- The HRHMIS is not adopted - HRHMIS does not support biometrics training attendance taking - No feature to forecast training needs - HRHMIS is not being fully utilized for training management	- Enhance and expand the use of HRHMIS for management of all trainings - Exclude the use of Excel for data transfer for security and privacy challenges
			Excel		
			Staff List	- Since staff list is manual, un	- Enhance and maintain uptodate

		Task Shifting; Task Sharing	TSTS Policy & Guideline	standardized and outdated, it cannot support the implementation of TSTS - TSTS policy & guideline in the process of being formalized - Health worker productivity and caseload not known across board - Health worker training report may be incorrect and competence not ascertained - Unmet healthcare needs and service gap not being tracked regularly	HRHMIS with all necessary data points needed for TSTS implementation (work location, cadre, skills, competency level, training history etc) - Implement a comprehensive integrated PMS to track key metrics, such as workload, productivity, and service delivery indicators. - Develop and implement competence assessment mechanism and tools to ensure healthcare workers have the necessary skills for TSTS - Integrate training and competence data in HRIS - Expand the use of EMR to help identify service gaps and integrate same with the HRHMIS to inform TSTS planning to address these gaps - Redefine scope of practice for cadres involved in TST - Implement and maintain a QA mechanism to sustain the Standard of Care - Create an effective referral, tracking and backup system
			DHIS2		
			DHS - provides demographic and epidemiological trends affecting healthcare demand		
		ODK - Knowledge & Skill Assessment Tool (KSAT)	HRHMIS	- This tool is not put to regular use - The tool lacks essential PHC components	- Enforce compliance to using the KSAT tool in concert with HRHMIS - Update the KSAT Tool to capture PHC components
			KSAT		
			SMS, Email		
		Paper-Based: Annual	Promotion Brief Printable	- APER completion is manual	- Digitize APER assessment

5	**Incentives/Rewards & Sanctions**	Evaluation	Form (APER)	and non standardized across board - Lack of Promotional exam to identify gaps before promotion - Lack of incentivized appraisal	- Introduce professional, general, and current affairs exams (CBT) for promotions - Create an incentivized model for staff appraisal
6	**Retirement & Attrition**	Paper-Based: Retirement	Retirement, Withdrawal and Resignation (RWR) form Excel HRHMIS	- Manual filling of RWR - Manual computation of benefits - HRHMIS does not report retirement digitally - No notification of all stakeholders about retirement	- Fully automate the management of retirement data - Digitally compute pensions - Implement retirement alerts in HRHMIS - Implement data analytics feature to support attrition forecasting
7	**Compensation & HRH Financing**	Payroll: Salary Processing	Payroll software Excel	- Lack of Payroll standing committee to sign changes made - Health worker salaries managed outside of KSPHCMB - Unsecured salary operations, Excel usage creates vulnerability - Payroll system not linked to staff biometrics - Payroll system not linked to HRHMIS	- Establish a committee to review monthly salary changes - Return salary management to the board under a unified system -Use standard payroll processing software that integrates directly with payment gateway through API -Migrate to biometric enabled payroll solution - Create HRH financing dashboard to provide real time metrics for planning and decision support - Exclude the use of Excel for data transfer
8	**Analytics, Forecasting & Planning**	Analytics, Forecasting & Planning	Annual Operating Plan (AOP)	- No presence of robust HRH planning and forecasting platform	- Establish a centralized data repository - Develop and implement an HRH

					forecasting and planning dashboard - Incorporate advanced statistical and machine learning techniques

6.5 Field Assessment Process for HRH Operational Data

6.5.1 Overview & Rationale for Field Assessment of 44 PHCs

The field assessment for 44 Primary health facilities on the HRH operational data focused on understanding HRH business process flows and data powering human resourcing from (a) Upkeep of nominal rolls to retirement and attrition processes, (b) incentives, rewards, and sanctions. The field assessment aims to highlight valuable insights for optimizing human resources and ultimately enhancing healthcare delivery.

6.5.2 Understudy of Data Collection & Reporting Platforms for HRH

6.5.2.1 Nominal Roll

82% (36) facilities reported having an updated nominal roll while 18% (8) facilities reported not having a nominal roll. All the nominal rolls are stored on paper. Out of these 36 facilities, 81% (29) of the facilities include staff and volunteers in their nominal roll 19% (7) only register formal staff without volunteers. Some of the further insights are provided below:

- Assessing the frequency of updates on the nominal roll, 41%(18) facilities reported updating their nominal rolls monthly, another 34% (15) of the facilities reported updating their nominal roll annually and 23% (10) of the facilities reported updating their nominal roll when need arises.

- Regarding the responsibility for updating staff lists, 58% (21/36) reported that the responsibility of updating staff list is vested on the facility in charge, while the facility itself undertakes this task, 25% (9) of cases. Local government authorities (LGAs) and other parties account for smaller percentages, with 6% (2) and 11% (4) respectively.

6.5.2.2 Retirement and Attrition

84% (37) facilities reported staff awareness of retirement. Regarding the providers of retirement notices, 49% (18/37) reported that retirements notice are sent from LGAs, while 19% (7) get retirement notice by the state and 8% (3) mentioned that staff themselves sent retirement notice to LGA and 14% reported on notices coming from the staff to the state directly.

- For staff voluntary withdrawal from service, 93% (41) of facilities do not have staff members who voluntarily withdraw from service and 7% (3) have experienced voluntary withdrawal. Out of the 3, 2 reported disengagement process from Zone/LGA while 1 facility disengaged the staff internally.

6.5.2.3 Staff Productivity and Leave Management

75% (33) of facilities confirmed that the staff of the facility are periodically required to submit current licenses, qualifications, and certifications.

- Regarding performance evaluation of staff, 56% (24) revealed conducting performance evaluations annually, while 18% (8) do so irregularly and 27% (12) of the facilities do not conduct performance evaluation.

- Facilities use different methods for staff appraisals. These include paper-based approaches such as cardboard paper, paper forms and exercise books. Facilities use tracking tools like **duty roasters, staff time books** and **attendance infraction charts**. Additionally, performance evaluations are conducted using **APER (Annual Performance Evaluation Report) form, OPD registers** and **unit record performance.**

- Regarding the operation of shifts, 61% (27) of the facilities assessed run shifts and all the 27 facilities maintain staff rosters to organize and manage these shifts efficiently.

- 70% (19) of the 27 facilities share their staff rosters with LGA, 89% (17 out of 19) do so monthly, with 11% (2) reported to do annually and other unspecified frequencies.

- Additionally, 50% (22 out of 44) confirmed to have leave schedules while the remaining 22 facilities do not have leave schedules. 55% (12 out of 22) develop leave schedules on a monthly basis, and 36% (8) on an annual basis. Additionally, 91% (20 out of 22) of the facilities share their leave schedules with the LGA with 45% (9) of the 20 facilities submitting on monthly basis and 35% (7) on annual basis.

6.5.3 Aligning Facility-based Reporting to State-Level Reporting

As part of the framing for understanding operational data flows between facility level and state level tools for aggregation and reporting on human resource for health, this section of the report tries to model the data flow process and map out how facility level reporting tools are transmitted into state reporting forms for evidence-based decision making.

Component	Facility Level Tools	State/National Level Tools
Nominal Roll	★ Nominal Roll List	★ HRHMIS

6.6 Performance Management Mapping for HRH Operational Data

6.6.1 Overview & Rationale for Performance Management

By establishing robust performance management frameworks, the KSPHCMB can ensure that the data being collected and analyzed is directly aligned with the specific operational questions and strategic decision-making needs of the system at all levels. Without this alignment, the wealth of available data may not be optimized to its full potential.

Collaboratively with leaders and stakeholders across the State healthcare ecosystem, we examined existing archetypes and data structures as well as considered new ones that can be adapted to directly address their performance-related questions, priorities, and concerns to provide meaningful insights into the operational landscape and support strategic workforce planning, talent management, and continuous improvement initiatives.

By mapping performance questions to the relevant data archetypes, the KSPHCMB can streamline the process of data collection, analysis, and reporting, ensuring that the right information is available at the right time to support decision-making. This performance management mapping exercise is a crucial step in bridging the gap between the wealth of operational data and the practical needs of healthcare leaders.

6.6.2 Performance Management Matrix for Operational Data

The key performance questions highlighted in the table below are derived directly from the strategic objectives outlined in the Kano State HRH Policy and Kano State Strategic Health Development Plan II. These questions have been presented to the relevant stakeholders, including the State Primary Health Care Development Board and the SMoH, for prioritization and mapping to appropriate operational archetypes that can effectively address them.

Some of the identified archetypes, such as admission and graduation rolls, may reside outside the direct purview of the public sector. Nonetheless, they have been deemed relevant and crucial to addressing the posed questions. Conversely, another set of archetypes, such as the State Approved Budget and Financial Report on Income, are available within the public sector, but are dispersed across various Ministries, Departments, and Agencies.

The strategic alignment of these performance questions with the policy directives, as well as the careful selection of appropriate operational archetypes, reflects a comprehensive and coordinated approach to assessment of the state's HRH operational data landscape.

Components	**Performance Questions**	**Operational Archetypes**
KSSHDPII – Strategic Objectives		
Ensure coordination and partnership for aligning investment of current and future needs and institutional strengthening for HRH agenda		
Ensure the production of adequate numbers of qualified health workers		
Ensure the development of monitoring and evaluation for HRH including systems for HRHMIS and Registry		

Components	Performance Questions	Operational Archetypes
Ensure effective health workforce management through retention, deployment, work condition, motivation and performance management		
Strengthen Health workforce planning for effective management		
Analytics, Forecasting & Planning	Does the State regularly project annual workforce needs?	
	What percent of annual workforce needs was met?	
	Does the state deploy data analytics for decision support (workforce planning for demographic shift, disease burden, attrition etc)	
HRH Production	How many training institutions base their admissions on the state's annual workforce needs?	
	How many zones pool resources for HRH training?	
	What is the ratio of female to male student enrolment in training institutions?	Admission Roll*
	How many private healthcare experts participate in training programmes organized by the state?	
HRH Management and Administration	How many health workers were recruited in the last quarter?	HRHMIS
	What is the total number of voluntary/temporary Health workers?	HRHMIS
	What is the total number of Health workers employed by the state?	
	What is the total number of Health workers employed by private health facilities?	HRHMIS
	What proportion of Health workers practices in hybrid mode (public and private sectors)?	
	How many permanent health workers are non indigenes?	HRHMIS, Workforce Registry

Components	Performance Questions	Operational Archetypes
	What proportion of the health workforce in the State is made up of Youth Corp doctors?	
	What proportion of the health workforce in the State is made up of Youth Corp Nurses & Midwives?	
	What is the total number of health workers deployed to rural facilities?	HRHMIS
	What is the total number of health workers deployed to urban facilities?	HRHMIS
	What percentage of community clusters in LGAs have CHEWs providing health care services?	HRHMIS, Workforce Registry
	How many LGAs regularly update their staff information on HRHMIS?	HRHMIS
	How many facilities use the HRHMIS to access and/or update their staff records?	HRHMIS
	What percentage of health workers access and use the employee portal on HRHMIS?	HRHMIS
	How many PHCs meet the HRH minimum service package?	HRHMIS, Workforce Registry
	How many private facilities meet the HRH minimum service package?	HRHMIS, Workforce Registry
	How many Facilities have HRH Officers?	HRHMIS
	How many HRH Officers are competent in HRH management?	
Productivity and Performance Management	What is the average absenteeism rate of staff by cadre?	
	What is the average caseload per cadre per health worker?	
	How does average staff caseload compare to the state's benchmark?	

Components	Performance Questions	Operational Archetypes
	How do average quality of care metrics compare to the state's benchmark among regular and TSTS staff?	
	How do average productivity metrics compare to the state's benchmark among regular and TSTS staff?	
	How do average performance metrics compare to the state's benchmark among regular and TSTS staff?	
	What is the average patient satisfaction rate and trend by cadre among regular and TSTS staff?	
Talent Management	What percentage of the health workforce is on in-service training?	HRHMIS, Training Report
	What is the ratio of female to male staff that underwent in-service training?	HRHMIS, Training Report
	What proportion of staff that underwent in-service training is sponsored and bonded by local governments?	
	What percentage of health workers received training on gender mainstreaming?	HRHMIS, Training Report
	How many community midwives, nurses and CHEWs are trained in life saving skills?	HRHMIS, Training Report
	What is the total number of managers trained in gender-sensitivity skills?	HRHMIS, Training Report
	What is the total number of health workers trained in specific diseases (e.g. HIV, AIDS, Tuberculosis, Malaria etc)?	HRHMIS, Training Report
	What is the total number of health educators and counselors trained in health promoting behaviours?	HRHMIS, Training Report
	What proportion of the workforce by cadre is engaged in TSTS?	

Components	Performance Questions	Operational Archetypes
	What is the total number of tasks being carried out by lower level cadres through TSTS?	
	What percentage of the health workforce have training gaps identified?	Knowledge & Skill Assessment tool (KSAT)
Incentives/Rewards and (Sanctions)	What are the key drivers of employee satisfaction and morale?	ISS
	What recurring patterns of misconduct or performance problems are seen among health workers?	
Retirement and Attrition	What percentage of the health workforce are expected to retire in 1 year?	
	What proportion of those retiring within 1 year are females?	
	What is the overall turnover rate for different health worker cadres?	
	What is the average vacancy rate by cadre?	
	What are the reasons for turnover other than retirement?	
Compensation & HRH Financing	What percentage of total health budget is allocated to HRH	State Approved Budget**
	What percentage of total HRH budget is allocated to rural incentives?	
	What percentage of total HRH budget is allocated to training?	
	What is the average remuneration package of each health worker cadre?	Payroll Application
	How do salaries of health workers compare with benchmark?	Payroll Application, National salary & wage scales^

Components	Performance Questions	Operational Archetypes
	What percentage of the recurrent expenditure is spent on salaries?	Payroll Application, State Health Performance Report*
	How many times was salary paid on target date in the last quarter?	Payroll Application

* Archetypes present outside of the public sector

** Archetypes present outside of the health sector

^ New archetypes