FREQUENT ASSESSMENTS AND SYSTEMS TOOLS FOR RESILIENCE: 1ST ANALYTICAL AND LEARNING LAB IN GHANA

WORKSHOP REPORT

November 2024

FASTR

FREQUENT ASSESSMENTS & SYSTEMS TOOLS FOR RESILIENCE

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ACRONYMS

FASTR	Frequent Assessments, Systems, and Tools for Resilience
GHS	Ghana Health Service
NOP	Network of Practice
RMNCAH & N	Reproductive, Maternal, Newborn, Child, and Adolescent Health and Nutrition
R4D	Results for Development
GFF	Global Financing Facility for Women, Children, and Adolescents
PPME	Policy Planning, Monitoring and Evaluation
FHD	Family Health Division
RHDHSs	Regional Directors of Health Services
DQA	Data Quality Assessment
BEmONC	Basic Emergency Obstetric and Newborn Care
BMGF	Bill and Melinda Gates Foundation
USAID	United States Agency for International Development
PHC	Primary Health Care
DDHS	District of Directors of Health Services
DHMTs	District Health Management Teams
DHIMS2	District Health Information Management System 2
SORMAS	Surveillance Outbreak Response and Analysis System
GHILMIS	Ghana Integrated Logistics Management Information System
HHFA	Harmonized Health Facility Assessment
MCH	Maternal and Child Health

TABLE OF CONTENTS

Abbreviations ..... **Error! Bookmark not defined.**

Executive summary ..... **Error! Bookmark not defined.**

Lessons Learnt 10

Looking ahead 10

Introduction ..... **Error! Bookmark not defined.**

Workshop Highlights 12

Objective 1 - Reintroduce participants to FASTR approaches and introduce the program design 12

Objective 2 – Review the DHIMS2 extraction and analysis tools and processes 14

Objective 3: Examine, interpret and connect use of results to routine activities 15

Objective 4: Identify and select indicators for first round of analytics 27

Conclusion and next steps ..... **Error! Bookmark not defined.**

Next steps 34

ANNEXES ..... **Error! Bookmark not defined.**

Annex 1: Participants List ..... **Error! Bookmark not defined.**

Annex 2: Workshop Agenda ..... **Error! Bookmark not defined.**

Annex 3: Round 1 of Prioritized Indicators recommended by participants for FASTR **Error! Bookmark not defined.**

3. Presentations ..... **Error! Bookmark not defined.**

ACKNOWLEDMENT

This document summarizes discussions from the FASTR Analytical Workshop held from November 19–21, 2024, in Koforidua, Ghana, as part of a series to strengthen Ghana Health Service (GHS) staff capacity in using rapid-cycle data analytics to improve RMNCAH&N outcomes. FASTR is an approach to catalyzing continuous 'analyze, learn, strengthen, act cycles to drive the systematic use of timely data for decision making. More information is available at https://data.gffportal.org/key-theme/FASTR/resource-repository/index.php

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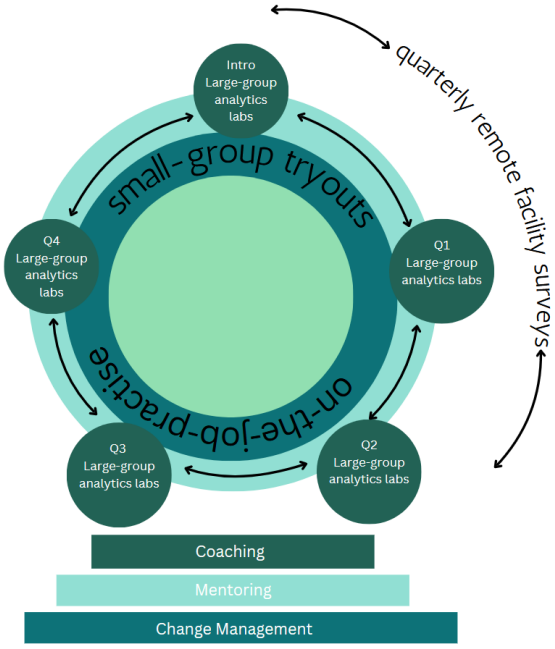
EXECUTIVE SUMMARY

The Introduction session to the FASTR Analytical Workshop series, held from November 19–21, 2024, in Koforidua, Ghana, kicked off a Ghana Health Service (GHS) workshop series to reinforce the capacity of staff in adopting FASTR's rapid-cycle approaches to analyze and utilize data to improving health outcomes. Aligned with Ghana's Universal Health Coverage (UHC) goals, the first workshop brought together key GHS technical and program staff from national and sub-national levels, Ministry of Health, and development partners[1]. The interactive and hands-on workshop was designed with the following objectives in mind[2]: a) to (re)introduce participants to the FASTR approaches and the program implementation design, (b) review of the district health information management system (DHIMS2) data extraction and analysis tools, (c) practice interpreting and presenting analysis findings, (d) identifying and prioritizing indicators for subsequent analytic workshops, and (e) developing action plans for national and regional level implementation.

Fig 1: FASTR Program Implementation Design



The workshop reintroduced participants to the FASTR tools and methodologies selected by GHS during an the June co-creation workshop. It was tools opportunity to dive deeply into these data and apply them to real-life DHIMS-2 sessions from the regions. Collectively, the FASTR guided participants through the and approaches to extracting, assessing, interpreting data from the DHIMS2, emphasizing how FASTR's rapid-cycle approaches complement existing DHIMS2 inbuilt methods.

[1] A detailed list of participants is in Annex 1.
[2] The complete 3-day agenda is in Annex 2

Participants were also introduced to the FASTR analysis platform, the main tool for analyzing and working with data in future workshops.

Session 1: Participants were introduced to using FASTR tools for conducting 'remote Data Quality Assessment' and the steps and processes for producing a quality-adjusted dataset. Participants were exposed to the methods for analyzing service utilization trends and coverage estimates and detecting significant changes in the data over time. In group work sessions, the teams practiced interpreting complex data visualizations to extract actionable insights and identifying key messages for stakeholders.

Session 2: The sessions focused on prioritizing and selecting indicators for measuring RMNCAH-N service areas and Networks of practice implementation. Participants were also introduced to gender-related indicators and approaches for integrating gender-sensitive indicators in line with Ghana's National Health Sector Gender Policy.

Session 3: The final part involved activities for participants to adapt the remote health facility survey tool to the Ghanaian context and begin discussions on the facilities that will be sampled for the remote surveys. The session also included a data use focus group discussion where groups at the national, regional, district and facility levels discussed their data analysis and use practices with the objective of identifying existing data use structures that can be strengthened with the addition of rapid-cycle analytics.

Workshop expectations: the main expectations for participants at the workshop were to:

1. Understand FASTR and the value-add from using FASTR tools
2. Understand different approaches to extracting, analyzing and utilizing DHIMS2 data to improve RMNCAH service delivery.
3. Be exposed to different approaches to improve data quality
4. Design action plans for data use at all levels
5. Improve data analytics skills

Whilst meeting expectations were high and some participants desired a deeper dive into the analytical tool and approaches, majority of participants reported that they were satisfied with their exposure to and understanding of FASTR approaches. They were enthusiastic about utilizing the tools to analyze and interpret their routine DHIMS2 data and requested for similar workshops with the same group of individuals.

Lessons Learnt - **What went well[3]?**

- Participants were enthusiastic about the group work sessions and the workshop's interactivity. The interactivity encouraged participation and helped to deepen understanding.
    - The varied expertise within each group contributed to reinforcing learning by introducing different perspectives to the analysis.
    - They also expressed the need to share the materials ahead of time.
- Time management was good, and the facilitators had in-depth knowledge about their specialty area.
- They appreciated the lessons in developing key messages from the data and want future workshops to incorporate similar sessions.

Lessons Learnt - Topics for deeper dive

- Rationale and method for downloading and extracting data.
    - Additional training on how to install the FASTR downloader, log in and analyze data.
- Improving and adjusting the data to examine changes in annual volumes
- Understanding surpluses and perturbations
- Practical demonstration of the FASTR analytical tool.
- Managing the security implications of connecting the downloader to DHIMS-2 via login credentials.

Looking ahead

Before the next analytics lab, the team will conduct a user test of the FASTR analytics platform with a smaller team from the GHS to get their feedback. The user test team will support the facilitation of the next lab as part of the "trainer-of-trainer" component of FASTR implementation. The team will also support the 'on-the-job'(OJT) coaching at the regional and sub-regional levels. OJT sessions will focus on addressing the challenges and requests for deeper dives that were surfaced during this introductory analytic lab, including advanced data visualization and analytics skills.

[3] The FASTR team conducted a quick poll to understand what worked, what should change, and what topics need a deeper dive.

To maintain leadership engagement and support, the facilitation team decided to include a high-level debrief and planning meetings with Senior Directors from the regions, Planning, Policy, Monitoring and Evaluation (PPME) and Family Health (FH) Divisions before or after each workshop. The meetings will report on progress, facilitate major decisions and ensure continuity in engagement and responsiveness to data analysis needs.

Finalizing the indicators for the routine DHIMS2 analysis and remote facility surveys to address relevant policy questions is an iterative process that may require several rounds of engagement with the technical team and senior leadership. The iteration will continue through the analytic labs and interspersed high-level convenings.

Subsequent labs in the series will build off the skills and topics introduced in the first workshop and incorporate the lessons to meet participants' and health managers' expectations for using robust data analytics for effective decision-making and improved RMNCAH-N outcomes

INTRODUCTION

The Global Financing Facility for Women, Children, and Adolescent's FASTR rapid-cycle analytics and data use initiative aims to support countries in generating and using rapid-cycle analytics to strengthen primary health care (PHC) and improve RMNCAH & N outcomes. FASTR has tools to address challenges associated with data analytics, interpretation, and use. It also supports countries with additional techniques for modeling and analysis of PHC and RMNCAH-N data and supports countries to regularly track PHC indicators over time.

In Ghana, the Ghana Health Service (GHS) is leading the introduction of FASTR with technical assistance and facilitation support from the Global Financing Facility for Women, Children, and Adolescents (the GFF) and Results for Development Institute (R4D). FASTR is anticipated to be implemented through existing Networks of Practice (NoP), helping to track the scale-up and provision of RMNCAH-N services in the networks and standalone facilities, and more broadly as an RMNCAH-N performance monitoring tool.

The GHS facilitated a co-creation workshop in June 2024 to adapt the FASTR approaches to the Ghanaian content and design the implementation plan, which includes a series of analytic labs and on-the-job (OJT) training to reinforce the data analytics and use approaches. The implementation design is built on adult learning principles which includes strong components of on-the-job learning, coaching and mentoring and change management to engage all levels of stakeholders in improving the data analysis and use culture.

The GHS and partners organized the 1st analytical workshop in this series from 19th November to 21st November 2024 at the Capital View Hotel in Koforidua. Workshop participants were from the GHS at the national, regional, district and facility levels, the Ministry of Health, the U.S. Agency for International Development (USAID) and its implementing partner, Project HOPE, the World Bank, GFF, and R4D[4].

The workshop was organized under the following objectives[5]:

- **Reintroduce participants to FASTR approaches and introduce the program design** – to (re) introduce participants to the FASTR approaches and the program design for the implementation phase of FASTR in Ghana
- **Review the DHIMS-2 extraction and analysis tools and processes** – introduce participants to the extraction and analytic tools designed to facilitate use of the FASTR approaches to data quality assessment, and data adjustments.
- **Examine, interpret and connect use of results to routine activities** – participants examined data visualizations from their work and practice interpretation and crafting key messages for stakeholders to draw attention to the findings from the data.
- **Identify and select indicators for first round of analytics** - review the list of indicators from DHIMS2 related to RMNCAH-N and NOPS to prioritize and select key ones to be tracked as part of FASTR implementation
  Collectively identify action plans for data use and support in between large group analytical lab workshops – understand the existing cycle of data analysis and use at different levels of the health systems and identify select gaps that will benefit from FASTR intervention.

This report summarizes the workshop activities, outputs and lessons which will be built upon during the subsequent workshops to reinforce learning and identify opportunities for using and disseminating findings.

Workshop Highlights

Objective 1 - Reintroduce participants to FASTR approaches and introduce the program design

The session (re)introduced participants to the FASTR tools and approaches and validated the final implementation design which was developed at the earlier co-creation workshop. The

[4] See annex for a detailed list of participants.
[5] See annex 1 for the agenda

GHS shared the key challenges with data within the health sector and the expectations for FASTR to help address them.

Welcome address by the Director of PPMED: GHS welcomed participants to the 3-day workshop and highlighted the critical role of data analytics and evidence-based decision-making in advancing health outcomes. They reiterated that the FASTR initiative aligns with Ghana's Universal Health Coverage (UHC) goals, including addressing challenges with data quality inconsistencies, limited routine integration of data, and capacity gaps across the health system. The address concluded with optimism for meaningful discussions and impactful outcomes from the workshop.

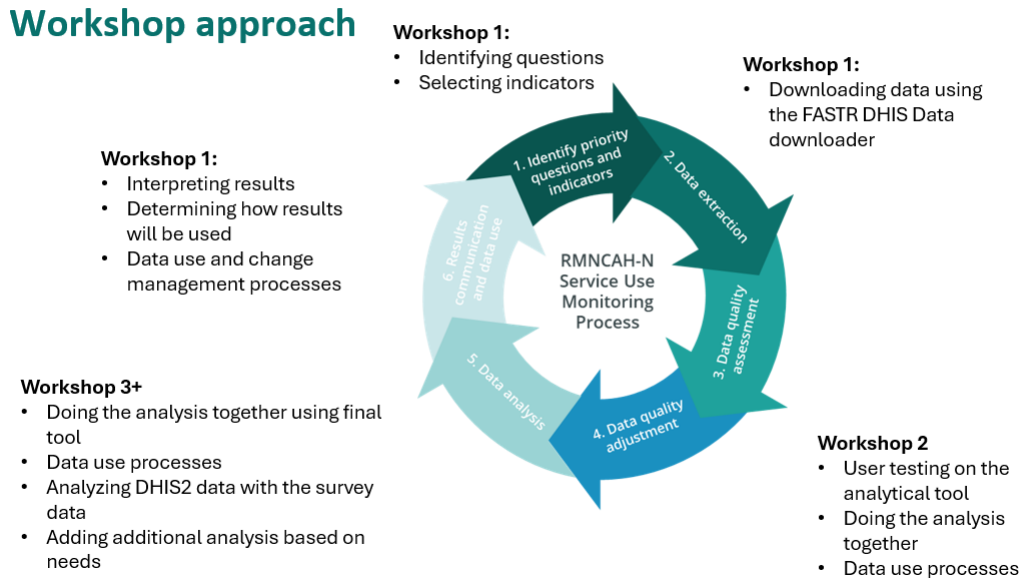
Understanding the gaps and challenges with data analysis and data use within the health sector: The GHS used the first presentation of the workshop to highlight critical challenges in data management within the health. The key challenges highlighted include data quality inconsistencies, skills gaps, resource limitations, and the complexity of DHIMS2 usage. Proposed solutions centered on standardized training, integrating DHIMS2 into routine decision-making processes, and strengthening stakeholder collaboration to develop actionable insights.

FASTR overview, approaches, program design elements and analytical lab series: This session (re)introduced participants to the program's approaches and implementation strategies in Ghana. It highlighted FASTR's approach which offers timely, rigorous, and cost-effective methods for monitoring primary healthcare (PHC) systems. The final design, emanating from a collective design process, is context-specific to strengthen the capacity for data utilization and foster sustainability and engagement through change management principles and coaching techniques.

A key feature is the inclusion of quarterly learning labs interwoven with small-group activities to enhance skills and data use. The approach for monitoring RMNCAH-N service use focuses on analyzing DHIMS-2 data to identify gaps and prioritize actionable strategies, aligned with national initiatives like the Networks of Practice reform and the Primary Health Care Investment Project.

Additionally, quarterly remote facility surveys will assess service readiness and facility operations to monitor reforms for improvement.

Fig 2: Summary of quarterly lab activities for DHIMS-2 approaches.



Objective 2 – Review the DHIMS2 extraction and analysis tools and processes

The session introduced participants to extracting DHIMS2 data using an external data downloader tool, and an overview of the HMIS analysis platform for subsequent workshops.

Data extraction: Participants were introduced to the FASTR DHIS2 Data Downloader and API script, two tools which enable efficient bulk data extraction. The facilitators provided guidelines for extracting at least five years of historical data at the facility level, organized by month and specific indicators to enable robust trend analysis. Historical data will establish a trend to measure future service delivery performance. Participants were excited about the capacity of the downloader to improve efficiency and access to additional information in DHIMS2. Others were concerned about the security of accessing data via a 3rd party application. The group agreed to install and test the downloader in the next analytic workshop.

Objective 3: Examine, interpret and connect use of results to routine activities

The session introduced participants to performing remote Data Quality Assessments (DQA), adjusting data for outliers before analysis, and methods for monitoring essential health services through quantifying changes in volume of priority services.

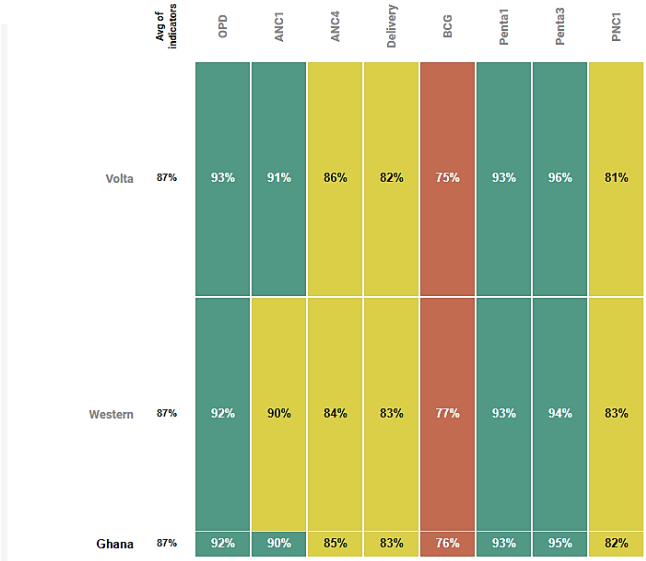
Data Quality assessment, adjustment and analysis: The workshop delved deeply into FASTR approaches to data quality assessment and adjustment methods. Facilitators discussed general measures of quality (Accuracy, Consistency, Timeliness and Completeness) and compared them to the FASTR measures (**Indicator completeness**, **presence of outliers**, and **consistency between related indicators**, all compiled into a composite DQ score) to provide a comprehensive overview of the dataset's strengths and weaknesses. Facilitators highlighted the value-add of FASTR DQA. While existing DHIS-2 functions use DQA to strengthen data quality over time, FASTR aims to assess data quality to inform the immediate use of the data for analysis to answer a pressing policy question. Participants learnt about the Median Absolute Deviation (MAD) method for detecting outliers, which was presented as a robust approach to address anomalies that could skew an analysis. The groups then had the opportunity to practice the concepts with DQA results from the Volta and Western Regions. Small group teams reviewed data completeness, presence of outliers, and internal consistency from 2020 to 2024 and developed key messages on the findings.

Fig 3: Example graphs for interpretation during the exercise on measures of data quality in DHIMS2

Reporting Completeness

Percentage of facilities reporting complete data

Reporting Completeness Oct 2023 and Sep 2024, Ghana, DHIS2



Higher completeness improves reliability of the data, especially when completeness is stable over time. Completeness here is defined as the percentage of reporting facilities each month out of the total number of facilities expected to report. A facility is expected to report if it has reported any volume for each indicator anytime within a year. A high completeness does not indicate that the HMIS is representative of all service delivery in the country, as some services may not be delivered in facilities, or some facilities may not report. Color code: low (red) is les than 80%; medium (yellow) is between 80% and 89%, and, high (green) is > 90%.

FINDING

BCG is the least complete priority indicator (76%)

FINDING

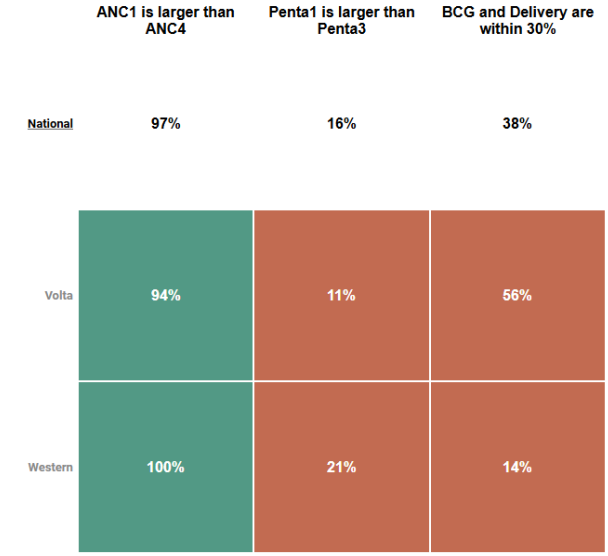
Western (54%) has the lowest completeness in the past year. Across all indicators in the past three months, the areas with the lowest completeness are:

Province	District	Average completeness
Volta	Ho	79%
Western	Sekondi-Takoradi	79%

Internal Consistency between indicators

Percent of districts meeting consistency benchmarks

for selected indicators in 2024, Ghana, DHIS2



Internal consistency assesses the plausibility of reported data based on related indicators. Consistency metrics are approximate - depending on timing and seasonality, indicator definitions, and the nature of service delivery and reporting, values may be expected to sit outside plausible ranges. Indicators which are similar are expected to have roughly the same volume over the year (within a 30% margin). The data in this analysis is adjusted for outliers.

FINDING

Examples of districts with inconsistent data include:

District	Province	Consistency Metric	Indicator Name	Reported Volume
Ahanta West	Western	BCG and Delivery are within 30%	BCG	182
			Delivery	174
Akatsi North	Volta	BCG and Delivery are within 30%	BCG	66
			Delivery	49
Ho West	Volta	BCG and Delivery are within 30%	BCG	124
			Delivery	54
Prestea-Huni Valley	Western	BCG and Delivery are within 30%	BCG	276
			Delivery	214
Wassa Amenfi East	Western	BCG and Delivery are within 30%	BCG	179
			Delivery	188

Presence of Outliers

Volume increase due to outliers

for selected indicators between Oct 2023 and Sep 2024, Ghana, DHIS2

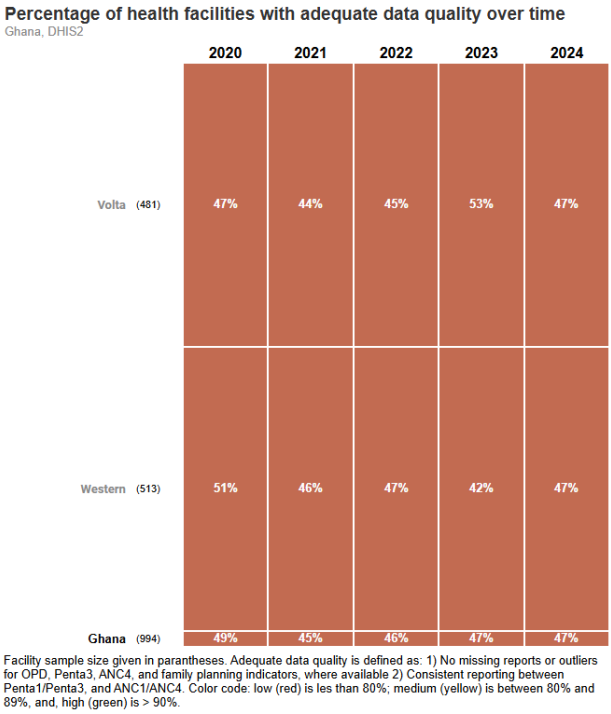
	Avg of Indicators	OPD	ANC1	ANC4	Delivery	BCG	Penta1	Penta3	PNC1
Volta	0%	0%	0%	0%	0%	0%	0%	0%	0%
Western	0%	1%	0%	1%	0%	1%	0%	0%	0%
Ghana	0%	0%	0%	1%	0%	1%	0%	0%	0%

Outliers are reports which are suspiciously high compared to the usual level of volume reported by the facility in other months. The deviance is the difference in volume after removing the outlier. High levels of deviance can affect the plausibility of the data. Outliers are identified by assessing the within-facility variation in monthly reporting for each indicator. Outliers are defined observations which are more than 10 median average deviations from the expected positive deviance, and are volumes larger than 100 clients. Deviance is measured by comparing the observed volume with outliers to a distribution which replaces the outliers with the average volume the same facility reported in previous months.

FINDING

BCG volume was most impacted by outliers. In the past year, volume was **1%** larger than expected.

Trends in data quality



FINDING

In 2024, 47% of facilities in Ghana reported priority indicators at high quality.

FINDING

Volta has the lowest percentage of facilities reporting at sufficient quality, at 47%.

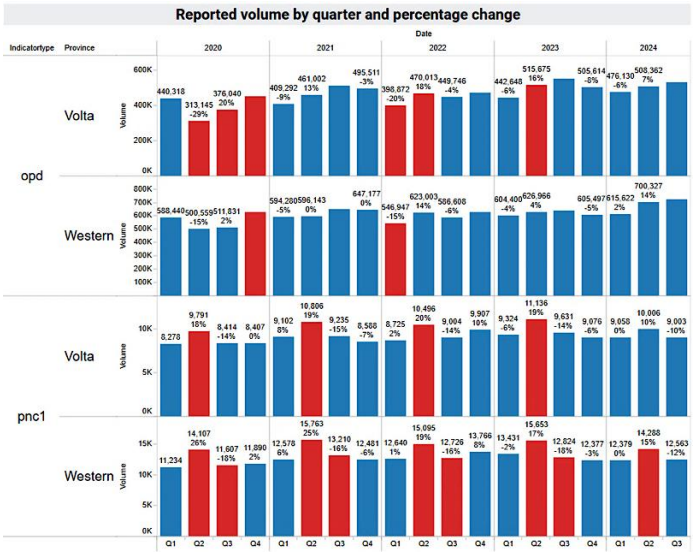
Table 1: Summary of interpretation results from participants during the group work on Data Quality Measures:

Quality area	Interpretation from participants
Volume increases due to outliers (Observation from Participants):	There is no volume increase due to outliers in Volta region. Western region had outliers for OPD, ANC4, and BCG, but these outliers were very small in terms of impact.
Presence of outliers	All indicators were within the acceptable range except for OPD for the year 2024 which was 1.9% (above the acceptable of less than 1%). The group observed that more data is needed to confirm the outliers and recommended a quick follow-up facility survey. The group suspected the outliers could be due to data entry error.
Presence of outliers across all indicators	The group observed that both Western and Volta recorded outliers, but the outliers are high in Volta region. OPD data recorded the highest level of outliers among the indicators of interest. There is the need for sensitization of data collectors and record officers at the facility level.

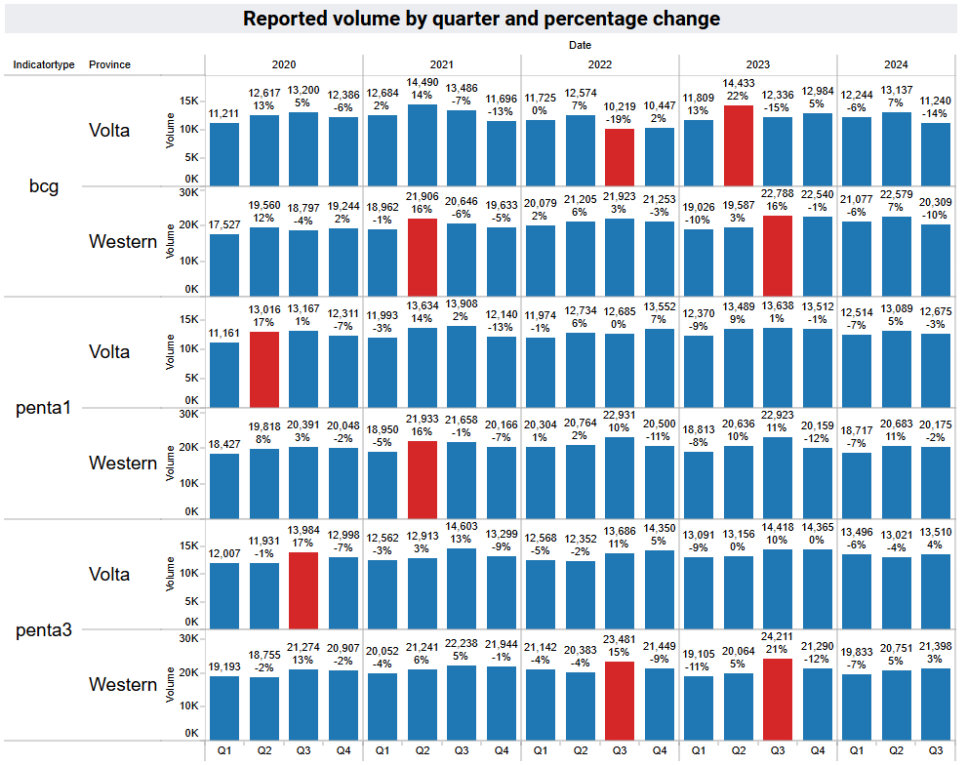
Reporting Completeness	Volta and Western recorded high completeness across the selected indicators. Data was lost or not captured in Volta region in Q1 in 2021 and Q3 in 2022. OPD, ANC1, Penta1 and Penta 3 had high reporting completeness. ANC4, delivery and PNC1 had medium reporting completeness, whilst BCG had low reporting completeness.
Trends in data Quality	The combined trends in data quality were similar across both regions. Facilities in both regions recorded low quality scores between 45% and 49% from 2020 to 2024 (September). The results may indicate inconsistencies in data collection or changes in regional metrics

Service utilization for Essential Health Service monitoring: Workshop participants reviewed service utilization trends, focusing on the volume of service change, patterns, and trends over time to detect meaningful shifts in service delivery that could be linked to disruptions or reforms. Interrupted time-series regression was introduced as a statistical approach to account for historical and seasonal trends, enabling participants to identify disruptions or surpluses in service provision with greater accuracy.

Fig 4: Example graphs from the group exercise on assessing EHS annual trends.




Reported volume by quarter and percentage change
Date
Indicatortype
Province
2020
2021
2022
2023
2024
anc1
Volta
Volume
11,014 10,298 -7% 10,986 7% 12,513 14% 11,506 -8% 10,602 -8% 10,754 1% 11,296 5% 10,886 -4% 11,024 1% 10,935 -1% 11,822 8% 11,330 -4% 10,473 -8% 10,351 -1% 10,640 3% 10,332 -3% 9,695 -6% 10,301 6%
Western
16,469 16,106 -2% 17,397 8% 21,294 22% 18,205 -15% 16,864 -7% 18,075 7% 19,513 8% 17,313 -11% 17,633 2% 18,650 6% 19,648 5% 18,404 -6% 16,624 -10% 16,883 2% 17,253 2% 16,409 -5% 15,489 -6% 16,622 7%
anc4
Volta
7,906 7,399 -6% 7,533 2% 8,346 11% 8,905 7% 8,673 -3% 7,726 -11% 7,300 -6% 8,083 11% 7,776 -4% 7,829 1% 7,904 1% 8,484 7% 8,229 -3% 7,947 -3% 7,534 -5% 8,453 12% 8,434 0% 8,012 -5%
Western
12,818 11,201 -13% 11,603 4% 13,105 13% 14,109 8% 13,483 -4% 12,384 -8% 12,367 0% 13,284 7% 14,316 8% 13,338 -7% 13,542 2% 14,554 7% 13,870 -5% 12,686 -9% 12,460 -2% 13,221 6% 12,567 -5% 12,202 -3%
delivery
Volta
8,476 10,222 21% 8,650 -15% 8,817 2% 9,437 7% 11,218 19% 9,627 -14% 9,006 -6% 8,992 0% 10,838 21% 9,074 -16% 9,914 9% 9,539 -4% 11,227 18% 9,682 -14% 9,434 -3% 9,133 -3% 10,233 12% 9,078 -11%
Western
11,662 14,390 23% 12,016 -16% 12,051 0% 12,731 6% 15,832 24% 13,404 -15% 12,488 -7% 12,677 2% 15,206 20% 12,903 -15% 13,790 7% 13,318 -3% 15,624 17% 13,010 -17% 12,291 -6% 12,177 -1% 14,018 15% 12,389 -12%
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3



Surplus and disruption analysis: Participants also reviewed graphs of trends in annual volume changes for essential health services (ANC 1 and 4, Delivery, BCG, Penta 1 and 3, OPD and PNC 1) to identify disruptions and surpluses, using contextual knowledge to explain the changes. Participants interpretation of the graphs are captured in the tables below.

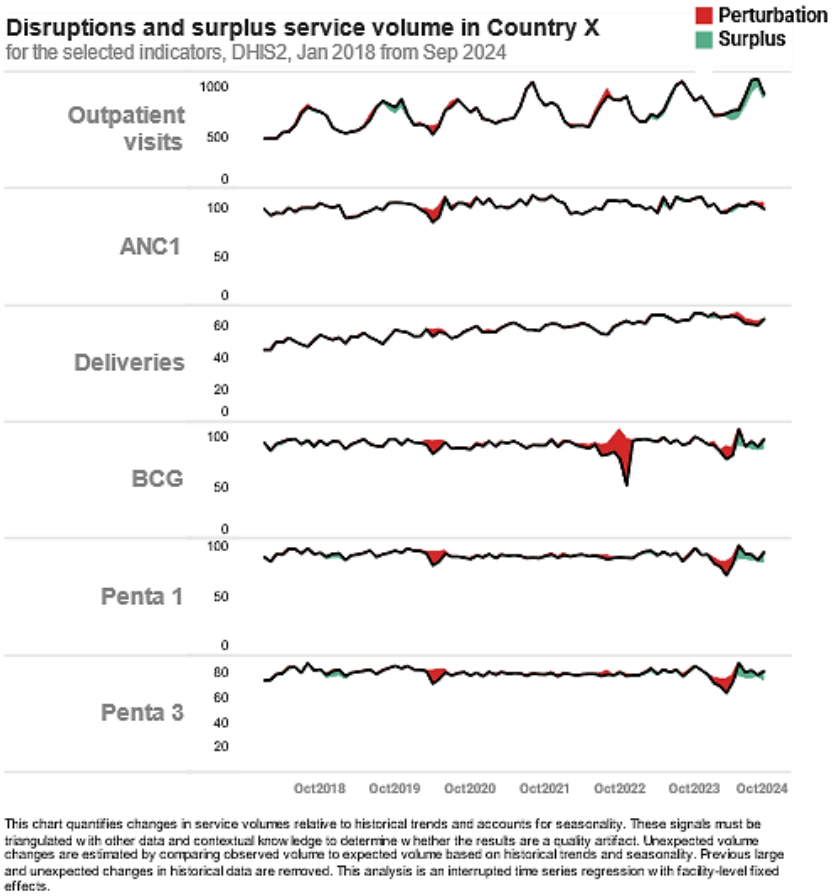


Table 2: Summary of interpretation results from participants during the group work on Essential Health Service Monitoring.

Service area	Group Interpretation
Trends in annual volume	• For BCG, the Volta region recorded a drop in 2022 Q3 (-19%), but there was a rebound in the year 2023 Q2 (22%) and Q3 (13%), respectively. • For the Western region, performance was consistent compared to Volta, but it dropped in Q2 2022.

	• For Penta1 (Volta region), we observed a notable peak in 2021 Q3(14%) and Q3 (13%), while in Western region there was relatively stable with slight variation peaking in 2021 Q3 (16%) due to service delivery. • For Penta3 (Volta region), there were fluctuations like Penta1 with significant increase in 2021 Q3 (15%) AND 2023 Q3 (13%), but there was a decline in 2022 Q3 (-9%). For Western region, there was a steady improvement peaking in 2021 Q3 (15%) and 2023 Q3 (21%). • The team identified key the primary reasons for this variation as operational challenges, COVID-19 pandemic and data reporting issues • OPD trends of 15% was more in Volta than in Western • More disruptions occurred in 2020 and 2022 • For PNC, more disruption was seen in Western compared to Volta • ANC1 visit had surplus of 22% and this could be due to the peak of the COVID-19 in 2020
Utilization time trends	• The time trends were okay over the periods, but in 2020 all the indicators saw a disruption which could be due to national issues • For OPD, the population is dynamic, and attendance is also dependent on the health seeking behaviour of the population. • In April 2020, that was a drop in all indicators which could be attributable to the outbreak of the COVID-19 pandemic in 2020. • BCG had a drop in October 2023, and it could have been as a result of vaccine stock out in the country • Between October 2023 and October 2024, there was also a drop in BCG, Penta1 and 3, and this could been attributed to stock out in the country. • However, there was surplus in October 2024 in OPD visit

Coverage analysis: Coverage analysis was another key focus area, emphasizing the use of adjusted denominators derived from DHIS-2 data and external surveys like the Demographic and Health Survey (DHS) and UNICEF's Multiple Indicator Cluster Survey (MICS). The facilitator outlined methods for deriving denominators and selecting the most reliable estimates to ensure alignment with survey data.

Estimating ANC1 coverage

SERVICE COVERAGE | Ghana

FINDING

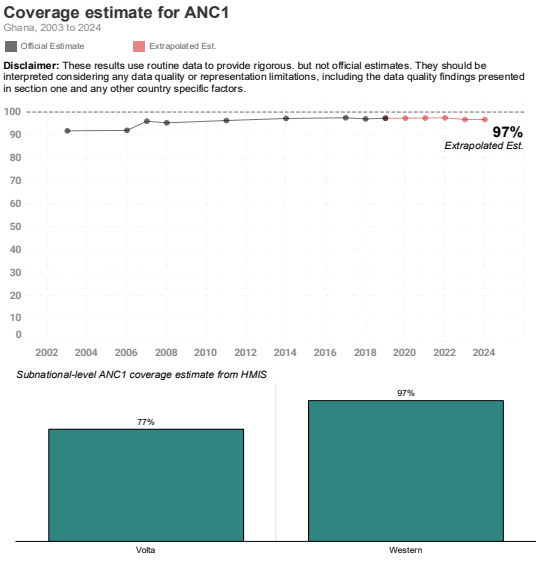
Analysis of HMIS service utilization data suggests a **negligible change in ANC1 coverage** in the last 5 years since previous official estimate by Ghana MIS 2019.

FINDING

Extrapolating the HMIS trendline to the most recent survey estimate, the estimated ANC1 coverage as of 2024 is 97%, an negligible change of -0.6 percentage points. This estimate assumes that non-reporting facilities have similar trends as reporting facilities.

FINDING

The Ghana HMIS estimates a 12% ANC1 coverage in 2023. The number of livebirths is estimated from World Population Prospects projections.



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Estimating Penta3 Coverage

SERVICE COVERAGE | Ghana

FINDING
Analysis of HMIS service utilization data suggests a negligible change in Penta 3 coverage in the last 3 years since previous official estimate by WUENIC.

FINDING
Extrapolating the HMIS trendline to the most recent survey estimate, the estimated Penta 3 coverage as of 2024 is 98%, an negligible change of 0.0 percentage points. This estimate assumes that non-reporting facilities have similar trends as reporting facilities.

FINDING
The Ghana HMIS estimates a 16% Penta 3 coverage in 2023. The number of children under 1 is estimated from World Population Prospects projections.

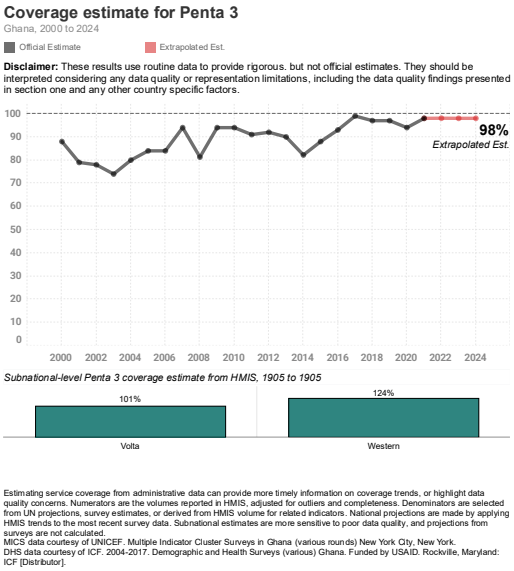

Table 3: Summary of interpretation results from participants during the group work on Service Coverage

Indicator	Interpretation from participants
ANC 1	• From 2003-2019, there was a consistent increase in ANC 1 coverage, between 2003-2006, we observed a stability near 90% and there was a dip in coverage from 2019-2024. Volta region recorded ANC 1 coverage of 77% which is below the extrapolated national value of 97%, while Western region recorded same extrapolated national estimate of 97% • Messages: Difference between regions suggest disparities in healthcare service delivery. The significant gap between Volta and Western region highlights the need for targeted interventions
Penta 3	• Both regions had coverage percentages higher than the national average, Western had 120% and Volta had 107%, both coverage is quite good • From the graph, around 2007-2009 there was a decrease in the uptake of Penta 3.

	• er, there was a steady rise from 2009 to 2011. From 2013 there was a significant dip

Objective 4: Identify and select indicators for first round of analytics

Participants prioritized indicators for both the routine DHIMS2 analysis and remote facility surveys and adapted the standard remote facility survey tool to the Ghanaian context.

What Makes a Good Indicator for the FASTR Analysis?

The selection of indicators for FASTR analysis is guided by several criteria to ensure relevance, accuracy, and reliability to meet one of the key purposes of FASTR – to **improve data quality for an analysis to address a pressing policy question.** The final set of indicators must be:

- Relevant – it must align with the priority (policy) questions and objectives of the analysis.
- Completeness – indicators with high completeness rates across reporting facilities improve data quality and reliability, reduce biases, and enables more accurate, timely, and actionable insights, ultimately facilitating better-informed public health decisions.
- Frequency – indicators with high reporting frequency, such as monthly, are valuable for supporting rapid-cycle analysis and tracking trends effectively. Higher volume indicators reported more frequently are more appropriate for data quality adjustment.

The FASTR approach focuses on a core set of RMNCAH-N (Reproductive, Maternal, Neonatal, Child, and Adolescent Health and Nutrition) indicators that reflect key service delivery events, have higher completeness and volume, and serve as proxies for other interventions delivered at the same service contact. For example, outpatient consultations (OPDs) act as a proxy for the general use of health services.

Incorporating Gender Equality into Indicator Selection and Analysis for Decision-Making

The session also highlighted the importance of selecting and analyzing gender-sensitive indicators and integrating gender equality into health systems reforms and tracking progress toward achieving equitable health outcomes. Participants were introduced to the Ghana National Health Sector Gender Policy (NHSGP) 2024 which provides a roadmap for achieving gender equity in health. The session concluded with discussions on the implementation of gender-responsive health policies and practical steps for achieving the NHSGP's objectives

Selecting indicators for DHIMS-2 analysis moving forward

Participants reviewed five (5) sources of indicators for the first round of indicator prioritization exercise[6]:

- Holistic Health Assessment Indicators
- Gender Action Plan Indicators
- Network of Practice Disbursement Linked Indicators
- Network of Practice Checklist
- National RMNCAH-N Indicators

Adapting the remote health facility survey to Ghana

Participants were introduced to the remote facility survey tool and worked in groups of five to review the tool. Each group was assigned specific sections (blocks) of the tool to review, refine, and tailor to the Ghanaian context.

Group Assignments and Responsibilities

Group 1 focused on: Block A: Health Facility and Respondent Information and Block B: Shocks and resilience to Shocks.

Group 2 was responsible for: Block C: Services and Block D: Infrastructure. This group refined questions on the availability and scope of health services.

Group 3 worked on: Block E: Financing and Block F: Workforce and Staffing. They focused on financial sustainability, revenue sources, and funding gaps, as well as staffing levels.

Group 4 adapted: Block G: Supplies and Block H: Leadership and Coordination. Their primary focus was ensuring that the tool effectively captured data on medical supply chains, and stock availability.

Group 5 worked on: Block I: Community Engagement, Block J: Quality Improvement Processes, and Block K: Emergency Preparedness and Response.

The groups reviewed their assigned blocks, discussed gaps, and proposed modifications to improve data collection and usability. The key changes made included tailoring the language

[6] See the recommended indicators in Annex 3

to the Ghanaian context, including country-specific indicators, and refining response options to improve data consistency.

Focus group discussion on data use[7]

Participants were divided into National, regional, district and facility level to discuss data use and its peculiar challenges at various levels of the health systems. The focus group discussions focused on routine data use for decision-making, barriers and facilitators to data use, example of recent use of data and competency needs.

Across levels of GHS, participants described routine processes to disseminate and use routine data sources for decision making. However, key gaps and challenges were identified …. Across levels of GHS, opportunities and competency needs focused on …

Table 4: Key findings from the focus group discussion at each level of GHS are summarized below.

Level	Summary of findings
National level	**Routine Data Use** - Participants frequently utilize data in their roles including for performance reviews, health assessments, and resource allocation. - Data on neonatal and stillbirth rates, for example, was instrumental in identifying regions and facilities with poor health outcomes, prompting targeted interventions. - Community scorecards highlight underperforming indicators, supporting advocacy efforts and resource mobilization. Forecasting and budgeting processes are informed by data to prioritize needs and optimize resource distribution. **Barriers and Facilitators to Data Use** - Key barriers to effective data use include limited data visibility, system fragmentation, and cultural resistance to data sharing. - Infrastructure issues like poor network connectivity further hinder timely data access. - Conversely, institutional changes such as health facility maturity assessments and regular performance reviews act as facilitators, enhancing data visibility and advocacy efforts.

[7] A full report of the data use assessment will be developed separately

	- Empowering participants to access and utilize data more effectively can bridge these gaps. **Opportunities and Competency Needs** - Participants expressed the potential for small-scale, immediate decisions within their roles, but larger-scale actions often required higher-level approvals. - Regular collaboration with directors during weekly meetings provides an avenue to influence decisions through quality data. - Competency needs include fostering research collaborations with academic partners and improving the utility of GHS data for decision-making. - Incorporating data use into daily tasks through better research dissemination and partner activity mapping could enhance alignment and reduce fragmentation. **Examples of Data-Driven Decision Making** - Addressing contraceptive stock-outs through interregional redistribution and prioritizing newborn follow-up programs based on admission trends. - Scorecard analyses uncovered service gaps, such as low antenatal care (ANC4) visits, leading to policy adjustments to improve provider-client relationships. During the COVID-19 pandemic, pharmacy-based vaccination data spurred scaling up training for wider accessibility.
Regional level	**Routine Data Use** - Both the Volta and Western regions emphasize the critical role of data in program development, monitoring performance, and improving service delivery. - Data dissemination through quarterly bulletins is a vital practice for engaging stakeholders in both regions. Weekly Monday health unit meetings are another forum to regularly review data and discuss progress. Finally, both regions print posters with key indicators as part of the annual and mid-year review process. - In the Western region, data is used to identify gaps, such as incomplete reporting and disparities in service delivery. Western has developed district-level key performance indicators (KPIs) that are used to monitor performance of specific programs. Results are used to direct supportive supervision to districts with poor performance on KPIs. **Examples of Data-Driven Decision Making**

	- In the Volta region, correlations between low birthweight and severe acute malnutrition prompted the creation of a reporting system and interventions to manage newborns effectively - Low Vitamin A coverage led to strategies to increase supplementation and address DPT2 vaccine gaps. - The Western region used equity indices to distribute healthcare professionals equitably and addressed maternal mortality concerns by auditing causes and retraining staff on conditions like eclampsia and haemorrhage. **Barriers to Data Use and Potential Solutions** - Lack of detailed analytical and interpretation skills was cited as the principal barrier at the regional level. Specific barriers cited included challenges connecting general trends in DHIMS-2 to specific use cases, linking and triangulating multiple data sources, and feeling confident in interpreting and using analysis findings. - Additionally, data availability barriers include incomplete datasets, limited access to DHIMS-2 at facility levels which prevents facilities from using their own data, and inadequate data analysis capacity - Attrition of health information officers to donor funded programs was described - Western region efforts, such as ranking districts on data quality and providing on-site supportive supervision, have shown some success. Western region also emphasized the importance of on-the-job coaching and supportive supervision, compared to classroom training programs, as the most impactful. - In the Volta region, integrating feedback mechanisms and regular training sessions help improve data completeness and accuracy. **Opportunities and Competency Needs** - Role-specific capacity building can institutionalize a culture of data use. - Focusing on managers' ability to use data for decision-making and improving data management at lower levels. - Advanced training in data analysis, interpretation, and advocacy, to enable staff derive actionable insights and communicate them effectively. Specific requests were made on building competencies across the data analysis-interpretation-use cycle and using multiple data sources to tell a story and make meaningful interpretation - Addressing staff shortages, particularly among health information officers, and fostering ownership of data processes at the facility level

District level	**Example of data Use for Decision-Making** - *Use data to allocate resources, ensuring staff distribution aligns with workload demands in service delivery.* - Districts track their performance with data and provide feedback to their stakeholders including chiefs and opinion leaders, who are involved in data sharing and health decision-making. - Data is used in engaging community members about their opinion in service delivery and as a form of feedback to community leaders **Barriers to data use** ***Capacity and Skills Gaps*** - A lack of technical know-how limits staff ability to analyze and use data. Staff may have challenges with extracting data from DHIMS2 for the relevant analysis. ***Poor Infrastructure and Tools*** - Inadequate infrastructure, such as computers and internet connectivity. - Lack of adequate tools affects data accuracy and completeness, and the inadequacy of data collection tools/register limits the capturing of data **High Workload** - Overburdened staff struggle to prioritize data collection, analysis and use. For example, a service provider is dealing with a lot of things, and he/she will not have time to look at the data and use it for decision making ***Staff Attrition and Turnover*** - Frequent transfer of trained staff disrupts data processes. When staff trained on specific data collection and processing are transferred, it lives a gap at their original station. **Facilitators of data use** ***Capacity Building*** - Training and skills development enhance staff ability to manage and utilize data. For example, if we build capacity, train them on how to use Excel to analyze data, to segregate data... they will have the skill and the motivation to use their own data. **Recognition and Incentives** - Acknowledging staff efforts motivates data collection and usage. For instance, recognizing high performing facilities in data capture and use will motivate other facilities to increase efforts to use data. Recognition

	and awards can motivate people and facilities to take charge of their own data. ***Availability of Resources*** - Access to tools, internet, and infrastructure supports data use. For example, availability of resources, like internet and computers is very key. Without it, you cannot do much with data.
Facility level	**Data Collection and Reporting Practices** - Patient data is collected at the facility level at the CHPS compounds, health centres and other facility levels with PHC - Staff collect data using the form A and B registers - Data is consolidated at the sub-district and district levels - Some facilities enter data directly into DHIMS2 for example, in the Ketu South District in Volta, all facilities collect and enter data into DHIMS; others consolidate and report to the district HIO for entry into DHIMS2. - There are routine validation meetings at sub-district and district levels to ensure data accuracy and facilitate discussions on achieving targets. **Routine Use of Data for Decision-Making** - Data is primarily used to monitor performance against targets and identify gaps, - In the Volta Region, facilities have leveraged data to address challenges such as high teenage pregnancy rates, low service coverage, and insufficient outreach services. - In the Western Region, they have used it to enhance community engagement, such as organizing durbars and setting up outreach points. - Facility staff have also used data in lobbying for additional resources, such as personnel or commodities, to meet community needs, for example, in the Western Region, when the district facility had a gynaecologist, the prescription rate for family planning commodities increased and staff used the data to request for stock increase in the commodity. **Barriers and Facilitators to Data Use** - Barriers for facility level staff include internet connectivity issues, a lack of IT skills to access DHIMS-2 for data analysis, inadequate documentation practices, and limited access to functional equipment like laptops.

	- Volta gave the example that expectations from management and communities to achieve targets could facilitate the use of data to monitor and report on targets - Both participants recommended that routine validation meetings could be used at as platforms to train staff and improve their data analytics capabilities. **Improving Data Use and Decision-Making** - Enhancing skills of facility level staff to access and download DHIMS2 data, converting absolute numbers into charts and graphs to identify trends and deviations. - Both facilities suggested adopting the holistic assessment review process between the regions and districts with the districts as reviewers, using the tool to score and discuss with the facilities.

CONCLUSION AND NEXT STEPS

Key achievements of the workshop included:

Reintroduction to FASTR Tools and Approaches: Participants gained a deeper understanding of the tools and methodologies designed to address gaps in data quality, capacity, and integration into routine healthcare activities.

Enhanced Capacity in Data Analytics: Sessions focused on data extraction, quality assessment, and interpretation, equipping participants with practical skills to interpret and use FASTR analysis effectively.

Indicator Selection and Gender Integration: Participants identified the first round of priority indicators and integrated gender-sensitive measures aligning with the Ghana National Health Sector Gender Policy objectives.

Next steps

1. **Review FHD Annual Performance Review Slides to gather insights from the 2023** regional slides as a concrete example of how to apply new analytics approaches to routine health planning and data use processes.

- Collect and compile the annual performance review slides from each region and work with regional teams to review them, identifying where improvements in data analysis and interpretation can be had in future years leveraging FASTR approaches

2. **Debrief with GHS Senior Directors and align on the use case for FASTR analytics, finalize the next steps for the remote facility surveys and the user testing workshop.**
   - Debrief with GHS Senior Leadership to address the following:
     - Prepare for a small user testing workshop in February 2025 to test the HMIS analysis platform to provide feedback before the next large group workshop.
     - Understand the expectations for the remote facility survey, align with the adaptation of the tool and plan for recruiting the firm to conduct the quarterly phone interviews
3. **Prepare for the next analysis lab and align dates with DHIMS2 validation timelines.**
   - Focus on a prioritized set of indicators, validated by Senior Leadership, for the first round of analysis.
   - Ensure monthly facility-level data is available nationwide for these indicators.
   - Identify dissemination platforms for using outputs from the analysis.
4. **Capacity Building**

Incorporate additional facilitation and coaching training for subsequent workshops.

- Include facilitation and coaching training during analytic sessions for technical team to manage workshop facilitation.
- Finalize the action planning for regional sessions.

ABOUT THE GFF's FREQUENT ASSESSMENTS AND SYSTEMS TOOLS FOR RESILIENCE (FASTR) RAPID-CYCLE ANALYTICS AND DATA USE INITIATIVE

The GFF supports country-led efforts to improve the timely use of data for decision-making, ultimately leading to stronger primary healthcare (PHC) systems and better reproductive, maternal, newborn, child, and adolescent health and nutrition (RMNCAH-N) outcomes. This set of initiatives and technical support is referred to as Frequent Assessments and System Tools for Resilience (FASTR). FASTR's technical approaches enable countries to use rapid-cycle analytics for strengthening PHC systems and improving RMNCAH-N outcomes through the timely and high-frequency analysis and use of data. For more information on the GFF's FASTR initiative, visit our website and the FASTR Resource Repository.

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