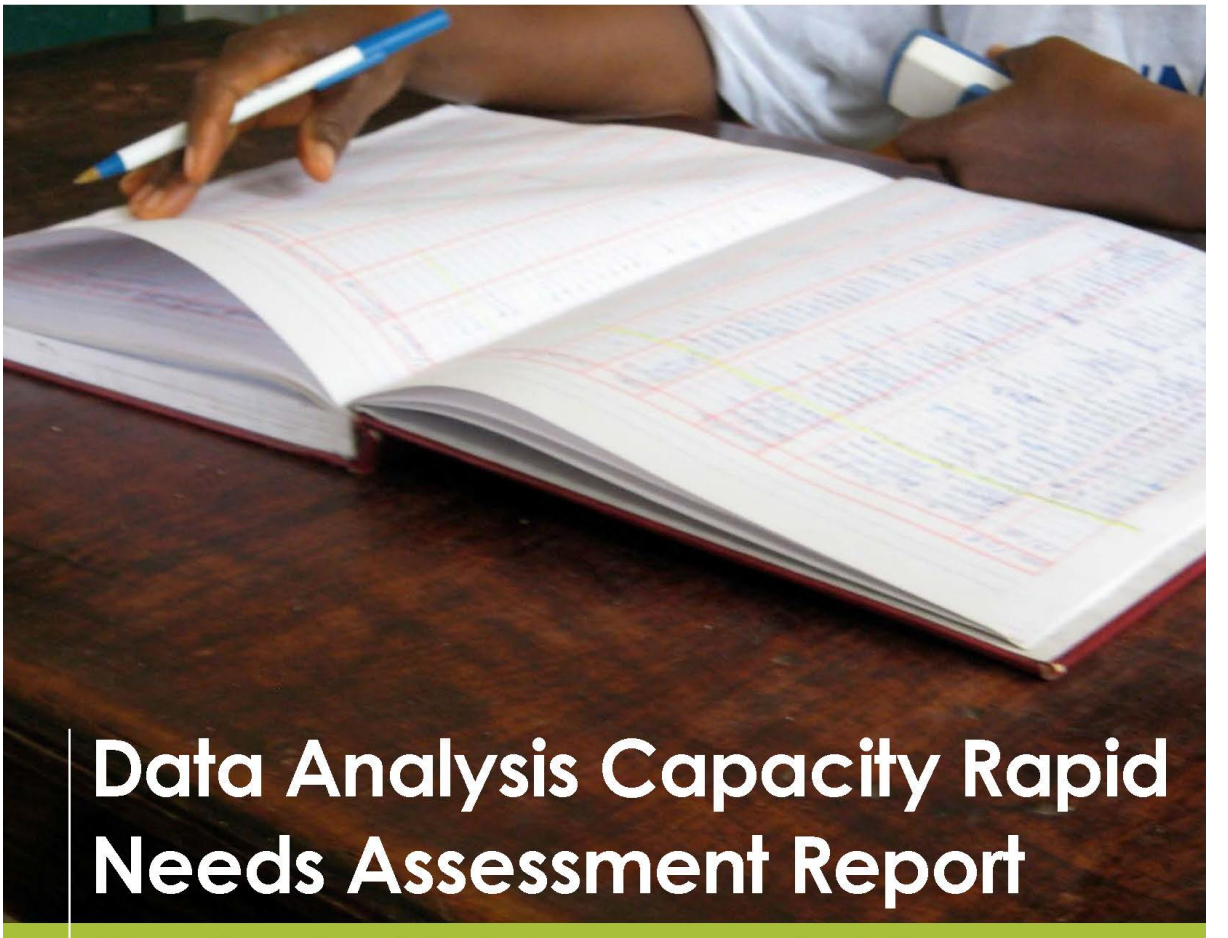

Data Analysis Capacity Rapid Needs Assessment Report

Results of a 2015 Assessment of the South African Department of Health's Capacity to Analyse Routine Health Data

April 2016

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Results of a 2015 Assessment of the South African Department of Health's Capacity to Analyse Routine Health Data

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Abbreviations

COP	Country operational plan
DHIS	District health information system
DHMIS	District Health Management Information System
DHMT	District Health Management Team
DoH	Department of Health
DPME	Department of Planning, Monitoring and Evaluation
FGD	Focus group discussion
M&E	Monitoring and evaluation
KII	Key informant interview
HIV	Human immunodeficiency virus
MEval-SIFSA	MEASURE Evaluation Strategic Information for South Africa
NIDS	National Indicator Data Set
PEPFAR	President's Emergency Fund for AIDS Relief
RHIS	Routine health information system
TIER.Net	Three Interlinked Electronic Registers

Executive Summary

Improving public health systems requires appropriate analyses of data to inform decision making. Public health data are used to monitor trends in the health and well-being of the population, establish the disease profile, prioritise interventions and resource allocation, and inform policies.

South African Department of Health (DoH) personnel continue to face challenges to analyse the data generated by the routine health information system (RHIS), whilst demand for data to use in decision and policy making increases. The Medium-Term Strategic Framework (2014-2019)[1] calls for the development and implementation of an efficient Health Management Information System for improved decision making. The District Health Management Information System (DHMIS) Policy of 2011 mandates improvement in data analysis and use "for decision making, planning, and monitoring in the health sector." Also according to this policy, a number of senior management and information personnel within DoH are responsible for data analysis.

MEASURE Evaluation Strategic Information for South Africa Project (MEval–SIFSA), is funded by the U.S. Agency for International Development (USAID) as an initiative of the President's Emergency Plan for AIDS Relief (PEPFAR) from 2013 to 2018. MEval-SIFSA focuses on sustainable capacity enhancement of government officials (DoH & DPME), and the PEPFAR implementers that support them, to identify data needs, collect and analyse good quality routine data, and use information for health decision making.

This report describes a rapid needs assessment conducted by MEval-SIFSA **to better understand the DoH personnel's capacity gap to analyse, interpret, and use routine health data**. The objectives were:

- Identify the data analysis capacity enhancement needs of DoH personnel who are required to analyse RHIS data at provinces and districts
- Determine current competence levels of DoH personnel within the continuum of data analysis
- Utilise the resulting information to inform the way forward for DoH and its development partners[2]

Based on NDoH recommendations and guided by the *PEPFAR South Africa Focusing for Impact*,[3] a sample of four provinces–Free State, Gauteng, KwaZulu-Natal, and North West Provinces–and two districts in each province participated in the rapid assessment. The study team conducted interviews with individuals and focus group discussions (FGDs) with 37 key-informants between September and October 2015.

Over half of those interviewed were women. Most of the key informants had at least a university degree and experience working in data or monitoring and evaluation (M&E) and in the health system. About two-thirds of the key informants were health information managers or officers and M&E managers. A relative minority were district managers, programme managers, planning managers, and facility managers. Only one participant was a statistician. None of the participants were a provincial head of department, subdistrict manager, epidemiologist, or GIS expert.

The results shed light on why DoH personnel have limited capacity to analyse and interpret RHIS data. Namely they:

- Lack the knowledge or skills to conduct basic descriptive analysis or to link trends with inputs, to manage poor quality data during analysis, treat outliers, and set targets based on historical data in part due to minimal in-service training
- Focus on reporting data that describes programme performance in reaching targets, with little or no data interpretation to identify the relevance, meaning, or implications of findings

[1] http://www.gov.za/documents/medium-term-strategic-framework-2014-2019

[2] The resulting information will not only inform provinces and districts that participated in the rapid assessment, but also other provinces and districts, and all levels of the health care system where routine data are analysed

[3] https://za.usembassy.gov/wp-content/uploads/sites/19/2015/12/PEPFAR-Focusing-for-Impact-1-pager-Dec-22-2015.pdf

- Function in a weak information culture in which a lot of collected data are not used, data quality is questionable, few programme managers understand data and feel confident to use data, colleagues and supervisors do not value data products, and those who manage and analyse data have no influence on decision makers
- Need a public health perspective that highlights basic M&E and approaches to respond to disease in populations
- Conduct data analysis without documented procedures to guide them
- Are not aware and/or convinced that data are useful in decision making

This rapid assessment contributes to the DoH having a better understanding of its data analysis challenges and the basic capacity of its staff to analyse and use routine health data.

MEval-SIFSA recommends that the DoH use this information to increase the capacity of the DHMIS Policy-listed senior management and information personnel (both data users and data producers) to analyse, interpret, and use data.

In response to the findings, MEval-SIFSA will develop a needs-based capacity-enhancement intervention for the DoH. This includes developing a data analysis curriculum and manual, facilitating training workshops, and providing technical assistance for DoH staff to:

- Conduct basic descriptive analysis of routine data
- Set baselines based on data from preceeding years
- Determine realistic targets against baselines
- Manage poor quality data during analysis
- Build capacity on data visualisation, interpretation, and communication

Collective efforts to enhance capacity in data analysis, interpretation, and use in decision and policy making are expected to contribute to improved monitoring and management of health programs, which in turn will lead to improved service delivery and programme performance. These will play a role in achieving South Africa's Vision 2030 of "a health system that works for everyone and produces positive health outcomes" and "A Long and Healthy Life for all South Africans."

Introduction

Effective decision making to improve public health systems requires appropriate analyses of data. Analysis of public health data plays a vital role in effective planning, monitoring, reporting, and decision and policy making to improve health outcomes. In this way, data analysis supports South Africa to achieve its Vision 2030 of "a health system that works for everyone and produces positive health outcomes" (The Presidency, 2012, p.330). The MEASURE Evaluation Strategic Information for South Africa project (MEval–SIFSA) supports The Department of Health (DoH) in South Africa to identify data needs, collect and analyse good quality routine data, and use information for health decision making by public health practitioners.

MEval-SIFSA focuses on sustainable capacity enhancement of government officials in the Department of Health (DoH) at national, provincial, and district levels, Department of Planning, Monitoring and Evaluation (DPME), and the PEPFAR implementers that support DoH, particularly in the management of HIV and AIDS and other health programs (MEval-SIFSA, 2014). This is in line with the Medium-Term Strategic Framework 2014-2019 (The Presidency, 2013), sub-outcome 10, that calls for the development and implementation of an efficient Health Management Information System for improved decision making (The Presidency, 2013); the PEPFAR Partnership Framework (2012-2017) objective to strengthen use of data to inform planning, policy, and decision making (PEPFAR, 2011); the latest PEPFAR Country Operational Plan (COP) 2015 that calls for increased sustainable high-impact activities to enhance the capacity of DoH (PEPFAR, 2015); and PEPFAR's Impact Action Agenda "to do the right things in the right places at the right time" (see http://www.pepfar.gov/about/agendas/impact/index.htm).

Background

DoH personnel continue to face challenges to analyse the data generated by the Routine Health Information System (RHIS). In 2011, the National Department of Health (NDoH) conducted a rapid assessment to inform health information system priorities and plans (DoH, 2011a). The assessment identified limited analysis and use of existing RHIS data for planning, resource allocation, and decision making, chiefly because managers do not *own* and use their data. The District Health Management Information System (DHMIS) Policy calls for improved data analysis and use "for decision making, planning, and monitoring in the health sector" (DHMIS, page 13, 2011) at the national, provincial, district, subdistrict, and facility levels of the health care system (DoH, 2011b). DoH personnel responsible for data analysis are senior management and information personnel. Senior management personnel are provincial heads of departments, district managers, subdistrict managers, and facility managers. Information personnel include information officers, M&E managers, health information managers, statisticians, demographers, biostatisticians, epidemiologists, and GIS experts with health sector experience (DoH, 2011b).

In 2010, MEval-SIFSA's predecessor, ESI (Enhancing Strategic Information), developed a data analysis manual. Participants described the curriculum as "too academic" and "too complicated" to address how to conduct analysis of RHIS data. MEval-SIFSA continued to receive requests from DoH for data analysis capacity enhancement during the delivery of a variety of training workshops including *Communicating Data for Decision Making*, *District Health Information System (DHIS)*, and *Evidence Based Health Management (EBHM)*.

Objectives of the Rapid Assessment

The rapid assessment sought **to identify the capacity of key DHMIS personnel in the DoH to analyse, interpret, and use RHIS data.** Specifically, the **objectives** of the rapid needs assessment were to:

- Identify the data analysis knowledge and skills capacity enhancement needs of DoH personnel who are required to analyse RHIS data at provinces and districts
- Determine current competence levels of DoH personnel within the continuum of data analysis (see ***Figure 11***)

- Utilise the resulting information to inform the way forward for DoH and its development partners

MEval–SIFSA is using the findings from this assessment to develop a tailored manual to enhance the capacity of DoH staff to conduct analyses of routinely collected health data. This curriculum will build on the introduction to data analysis contained in the MEval–SIFSA trainings:

- *Communicating Data for Decision Making:* pivot tables, data visualisation, performance analysis, interpretation, and communicating using data
- *DHIS:* data quality checks, validation rules, descriptive statistics, conditional formatting, dealing with missing values, pivot tables, and regression
- *EBHM:* detecting outliers, identifying data errors, pivot tables, decision analysis, types of data, consistency checks, producing and interpreting charts, absolute validation, trend analysis, and dealing with missing values

In line with its capacity enhancement approach, MEval–SIFSA intends to then offer facilitated data analysis training workshops, and provide ongoing needs-based technical assistance. By enhancing the capacity of DoH staff to conduct analysis through workshops and technical assistance, MEval-SIFSA will contribute to DHMIS Policy implementation.

The **intended audiences** for this report are:

- DoH, to understand the data analysis needs and its role in capacity enhancement to analyse and use RHIS data
- MEval-SIFSA technical staff, to develop a new data analysis curriculum and manual for DoH staff who conduct analysis of routine health data
- MEval-SIFSA's donor, USAID/PEPFAR

Data Analysis Defined

To guide our efforts to identify capacity gaps, the study team (see ***Annex I: Study Team Composition***) worked from an objective definition of data analysis: **Data analysis turns raw numbers or text into structured and organized information** (MEASURE Evaluation, 2011). All data are either qualitative or quantitative. **Qualitative data analysis uses non-numerical data to explain situations, classify information, and examine relationships** (Gebremedhin, Getachew, and Amha, 2010). **Quantitative data analysis uses numeric data to understand the size and scope of issues and problems and relationships.** RHIS produces quantitative data that the DoH could analyse to understand issues such as patient flow and provider patient burden, staffing needs, the need to build new facilities, or expand the scope of community health workers.

The act of transforming data into information involves statistical methods that describe, illustrate, condense, recap, and evaluate data (ORI, n.d.). Types of quantitative data analysis involve (Shamoo and Resnick, 2003; Roush, 2014):

- Describing a population's characteristics based on location, time, and demographics
- Assessing random distribution and independence of variables
- Conducting multi-variate and regression analyses

The study team also considered how the DHMIS Policy defines data analysis. The policy describes two data analysis foci: **(1) ensuring data quality (identifying gaps and outliers, assessing data quality issues**) and **(2) creating standardized performance reports to inform provincial and district performance and to develop legislative and strategic plans at all levels of the health system** (DoH, 2011b). This assessment focuses on exploring how DoH staff could improve their analyses so that decision makers would see the value of available routine data and seek it out during the decision making process.

Methods

MEval-SIFSA produced a concept note, data collection plan, and a key informant interview guide (KIIG). See ***Annex 2: Key Informant Interview Guide***. The study team developed the KIIG based on the UNAIDS framework for knowledge, skills, and competency capacity building, with a focus on two core competency dimensions: (1) data collection and data management, and (2) data analysis, dissemination, and use (UNAIDS, 2010; UNAIDS MERG, 2010).

Due to time constraints at all levels of DoH, face-to-face interviewing of each individual participant was not possible. The study team was able to organise focus group discussions (FGDs) and adapted an FGD guide from the key informant interview guide. See ***Annex 3: Focus Group Discussion Guide***.

Based on NDoH recommendations, and guided by the *PEPFAR South Africa Focusing for Impact*,[4] the study team, used convenience sampling to select four provinces and two districts per province. Where feasible, one district was urban and the other peri-urban. For PEPFAR priority districts, see ***Annex 4: PEPFAR South Africa Focus Districts***. Senior management at the provincial level identified DHMIS Policy priority staff and programme managers working in PEPFAR-relevant programs at both the provincial and district levels. The study team interviewed 37 individuals in Free State, Gauteng, KwaZulu-Natal, and North West provinces between September and October 2015. See ***Annex 5: Participants Register***.

One lead interviewer and at least one MEval-SIFSA capacity building coordinator conducted each FGD or interview. FGDs and interviews lasted no more than one hour each. The study team interviewed 33 participants in 11 separate focus groups, and four participants in face-to-face interviews using the key informant interview guide.

During data collection, interviewers asked all participants for verbal consent and gave them the opportunity to opt out and end the interview at any time. Each participant completed a register after providing verbal consent. All 37 participants agreed to participate, completed the register, and finished the entire interview process as facilitated by the interviewers.

The Lead Researcher entered all qualitative responses in MS Excel, reviewed each variable for themes, and developed categories. He generated new variables for the coded responses and explored transcribed responses for illustrative quotes.

Ethics

Prior to data collection, MEval-SIFSA colleagues conducted an internal research review process in consultation with DoH. After reviewing the concept note and key informant interview guide, MEval-SIFSA determined that this activity was exempt from ethical review in South Africa. The explanation for the exemption was that (1) this was an assessment of a capacity gap identified by DoH in 2011, and (2) all information that was to be gathered was already a part of participants' normal work-life.

Once MEval-SIFSA determined the assessment was exempt from South African ethical review, the study team submitted study materials to Palladium's[5] Internal Research Review Committee (IRR) for preliminary ethical review. On September 9, 2015, IRR certified exemption for this activity from the United States Department of Health and Human Services (HHS) Policy for Protection of Human Research Subjects (45 CFR 46).

[4] https://za.usembassy.gov/wp-content/uploads/sites/19/2015/12/PEPFAR-Focusing-for-Impact-1-pager-Dec-22-2015.pdf
[5] Palladium is one of the six MEASURE Evaluation partners, which is led by the University of North Carolina. The other partners are John Snow Inc., ICF, Management Sciences for Health, and Tulane University.

Findings

Of the 37 study participants, 23 were women, 28 had at least a university degree (see ***Figure 1)***, 27 had worked in data or M&E for three (median) years, and 27 had prior experience in the health system. Those who reported number of years of previous experience in the health system (five participants) had a median of eight years.

Figure 1: Participants' Highest Qualifications

Of the 37 participants interviewed, the majority (16) were health information managers/officers and M&E managers (9). No one was a provincial head of department, subdistrict manager, epidemiologist, or GIS expert (see ***Figure 2).***

Figure 2: Participants' Job Categories

No participants had attended data analysis trainings in the previous 12 months. This absence of data analysis trainings, from any source, confirms it as an unmet need.

The following subsections describe findings based on individuals' perceptions of DoH's capacity to conduct data analysis, information culture, and management and processing of routine health data. These three categories help us understand the knowledge and skill level of potential beneficiaries of MEval-SIFSA's capacity enhancement. Because beneficiaries will need to apply their new knowledge and skills in their organisational contexts, we asked study participants to describe how they perceive the information culture of the DoH, and what they actually do when they manage and process data. This information will help MEval-SIFSA to tailor knowledge and skill-learning objectives in a manner that is relevant to the DoH institutional culture.

Capacity to Conduct Data Analysis

To understand the baseline capacity of DoH staff to conduct data analysis, interviewers asked them to describe their knowledge level. Interviewers asked the question without defining data analysis or probing (with a list of types of analyses) to avoid leading participants to desired answers (interviewer bias). The

assumption was that unaided response would provide a more accurate snapshot of DoH's knowledge about data analysis.

Four responded that they *"... just know how to use DHIS."* Two of these four participants stated, *"DHIS is formatted and automated so we just work on validation of errors. We don't need to know more."* One participant claimed strong skills in *"qualitative analysis of graphs,"* which, to the study team, meant the participant believed (s)he could accurately describe how far performance was from target, and interpret data reflecting the relevance, meaning, and implication of a performance status. A final participant stated, *"I am not trained, I am just using my experience. I have an M&E background."*

When asked what skills they needed to conduct analysis as part of their current job duties, participants listed multiple areas as ***Figure 3*** displays.

Figure 3: Analysis Skills DoH Staff Say They Need (n = 21)

Importantly, 11 of the 21 participants responding noted they need skills to conduct descriptive statistical analysis and to understand how the findings apply to programme management through better understanding of basic M&E concepts and trend analyses.

Motivation to Conduct Data Analysis

Of the participants who described their level of motivation to conduct data analyses, most (24/31) stated that they are motivated to conduct data analysis (see ***Figure 4***). The statements they made about their motivation reflect the limited capacity of DoH staff to conduct data analysis outside of DHIS. For example, one participant stated, *"We'd like to do it. We've reached the limits of DHIS and want to move beyond it. We may not know what it is but we want to go beyond where we currently are."* Another participant conceded that *"[I am] definitely motivated but I need skills to do it."*

Figure 4: Participants' Self-Reported Motivation to Conduct Data Analysis (n = 31)

Information Culture

When asked to describe DoH's information culture, interviewers used this probe with all participants: "*Information culture* refers to the values, norms, and practices around managing and using data and information." Of 19 responding participants, 17 described the information culture of DoH as weak. Only two said it was improving.

Participants also described how they perceived the strengths and weaknesses of DoH's information culture. On strengths, participants reported:

- Reporting requirements – *"We are able to produce monthly and quarterly reports, which helps maintain analysis and use."*
- Strong staff capacity – *"Programme managers' knowledge base gives analysts understanding of how to develop analyses."*

On weaknesses, participants reported:

- No strengths – *"The culture is autocratic. There is a lack of trust in people's abilities to manage and use information. There is a lack of routine executive committee meetings to share information."*
- Low accountability – *"We all understand that the work is influenced by accuracy… but only a handful of programme managers understand reports and feel figures are good enough to use for planning. This is an issue of accountability—people don't take ownership for quality and use."*
- Work load – *"People are bombarded with reports [to complete] which just builds resistance to anything to do with data. They just feel it is a must-do."*
- Weak staff capacity – *"We collect a lot of information but we don't use it and we don't talk about it. We just work on routine processes. We are not understanding why this indicator and what the story it tells is."*

Seven participants provided their perceptions of staff available to conduct data analysis. They highlighted limited organisational and individual capacity:

> *"We haven't had very technical people who are equipped to do it as a nature of work. We have data capturers with no idea of what analysis is and managers who analyse because it is their job but don't have the skill to do it."*
>
> *"They don't understand how to link trends with budgets, which contributes to what can be done. So, if budget is cut, then targets will necessarily decrease."*
>
> *"We need people to be able to do trend analysis, people don't understand it. They say 85% for this year and think next year must be 90%, even if the 85% was not achieved, they still think they have to increase it."*

Interviewers asked participants if staff had a clear mandate that included defined roles and responsibilities for data analysis. Seven said that staff did not have clearly defined roles and responsibilities for data analysis. Four of those who said there were clear definitions referred to the DHMIS Policy, while three said they tacitly understood it as part of their job.

Finally, staff discussed data producers' ability to influence decision makers to use analysed data as part of their decision-making process. As ***Figure 5*** shows, 11 stated that those who manage and analyse data have no influence on decision makers.

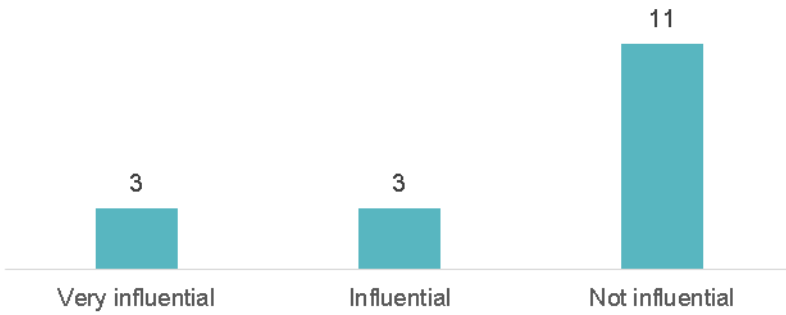

Figure 5: DHMIS Priority Staff's Ability to Influence Decision Makers to Use Data (n = 17)

Data Management and Analyses

All but one of the 37 participants reported that they conduct data analysis as part of their job (see ***Figure 6*** for how they describe uses of data analysis) and use Microsoft Excel to do so, whether they called it "MS Excel," "pivot tables," or "DHIS". Participants reported they access RHIS data from the DHIS through pivot tables. But when asked directly, participants said they do not construct pivot tables themselves but use the ones integrated into DHIS. This indicates a lower MS Excel skill level than if participants actually constructed their own pivot tables.

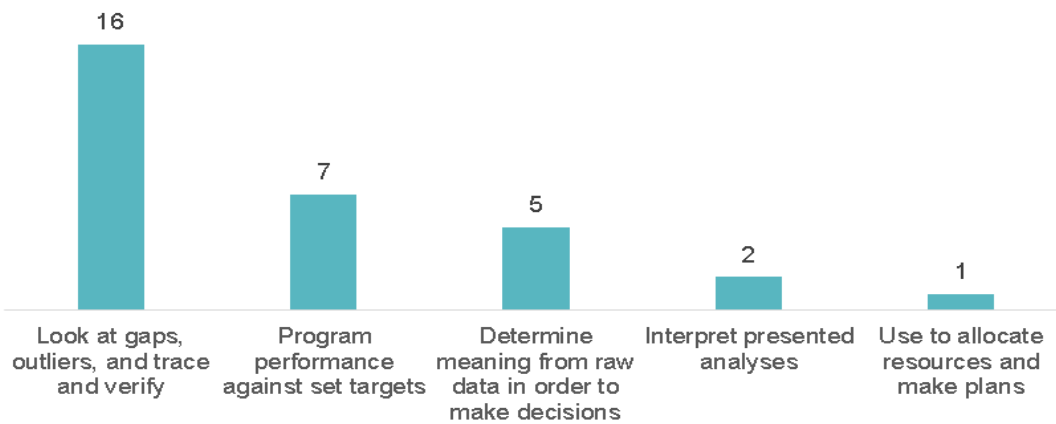

Figure 6: How Participants Define Data Analysis (n = 31)

The study team asked participants to define data analysis. The majority of those who responded (23/31) defined data analysis in terms of programme performance in reaching targets, as expected from the DHMIS Policy definition of data analysis.

Interviewers then asked participants to describe the types of analyses they conduct (see ***Figure 7***).

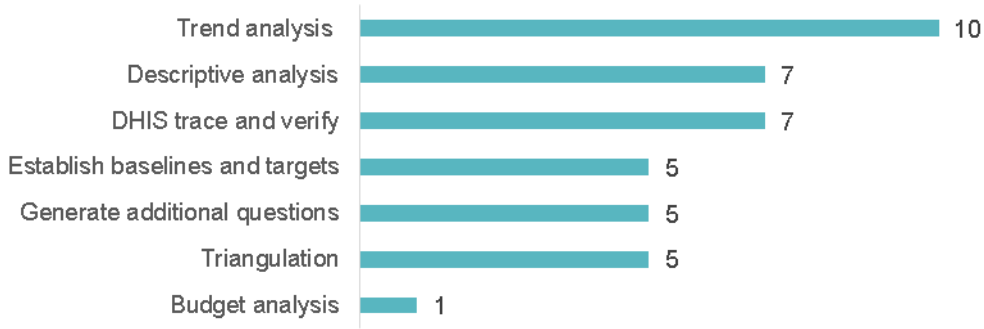

Figure 7: Participants' Responses on the Type of Analyses Currently Conducted (n = 37)

These responses mirrored how participants define data analysis, namely that the majority of analyses are descriptive trend analyses to compare programme performance against targets. Respondents also indicated they use analyses to plan and allocate resources.

Twenty-eight participants stated they do not have documented procedures to guide them in their data analysis. Of those stating they had such procedures, six reported using DHIS' standard operating procedures. Two reported, *"What is standard in the DHIS"* as available procedures. These DHIS procedures were also described as a *"robot system (a dashboard system), but it's not documented. It shows us red when we are not achieving our targets."*

Five participants said they have access to tools to guide them in their data analysis, *"... such as one that picks violations in reports from districts."*

Participants listed the types of data they have available for analyses (see ***Figure 8***). Of those responding, most reported using DHIS, which also includes population data from StatsSA (or Statistics South Africa), 27 ETR.net, and 26 TIER.net.

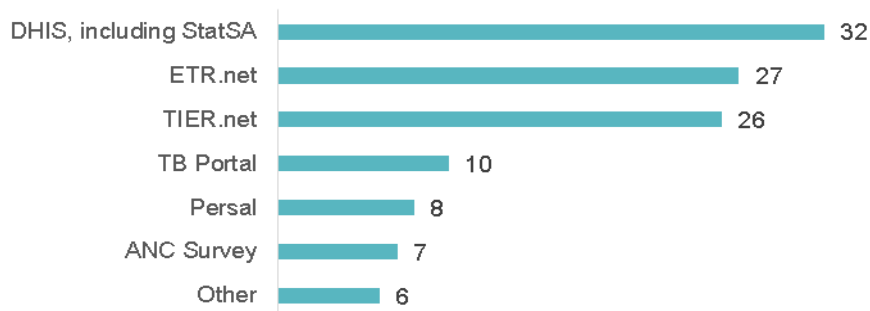

Figure 8: Participants' Response on Types of Data Available for Analyses (n = 33)

We also asked participants to describe how they accessed available data. Sixteen said they do so through pivot tables, five are custodians of the data themselves, and three have to request data from health information manager and/or a data manager. Participants also reported that data are accessible by anyone with a legitimate use for them.

Only seven participants described the steps they take to analyse programme performance data. All responses described extracting indicator data using DHIS pivot tables. They reported health information management (HIM) staff always exclude outliers, whether they are actual observations or data entry errors. Programme managers are then contacted to *"fix the data,"* that is, to follow up with facilities to collect missing data. Participants said that they then produce graphs in MS Excel to compare the count against the target.

Ten participants described what they thought was missing in their programme performance analyses. The participant responses below highlight respondents' awareness of the parochial focus on processing data for reporting progress towards targets without taking into account disease burden, patient flow, resource allocation, or other basic programme management uses of routine data:

> *"We need a larger focus than just whether or not we are reaching our targets this year—it is too narrow and meaningless."*
>
> *"We can still do a lot with trend analysis. We are merely scratching the surface. We don't evaluate the trends. We don't look at what is really influencing them and then plan interventions."*
>
> *"We only look at actual data but not resources; we look at only trend but don't consider inputs. This is because there is a lack of basic M&E. That is a huge challenge."*

Nine participants discussed their struggles to analyse data. Of these, six said they struggled with poor data quality. One participant observed, *"When data quality is compromised, then it creates problems in coming to a conclusion of what the data is telling us."* Three said they lack basic data analysis capacity. Illustratively, one participant said, *"I'm not yet skilled enough to analyse data. I don't even do rates and ratios."*

Eighteen participants said they produced graphs, charts, and tables based on their analyses. Of these, nine said that DHIS automatically produces such products for them, though one participant added, *"I need more skill to identify which data elements and indicators to highlight beyond just normally generated graphs."*

Bar, line, and pie charts are the most popular products. When probed to describe the charts and explain the process used to select specific data to present, participants said that they used past reports or responded to *ad hoc* requests from NDoH: *"How we decide what to produce is based on what Ministers and Directors state as their priority. We follow NDoH lead."*

Only two of sixteen respondents definitively said that that they thought their colleagues and supervisors value the charts and tables they produced (see ***Figure 9***). *"Programme managers understand programs but not what numbers say. Nurses don't value data. There is no communication between analysts and programme managers who are not aware of what data analysts do and know."*

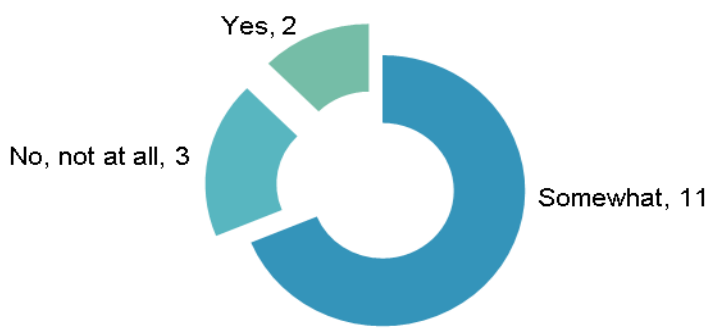

Figure 9: Do Colleagues and Supervisors Value Information Products? (n = 16)

Sixteen participants said they produce narratives based on their analyses. Of these, six said they summarise what the graph shows, five provide their personal perspective, and another five attempt to explain under- or over-performance. Participants described their narratives as:

- *"… a thumb suck. We don't link data with rapid research. It's a gut feeling, not scientific evidence."*
- *"Everything is assumptions and opinion versus fact."*

- *"I need to be trained on how to draw context to explain number[s]. Our narratives lack this."*

These testimonials show that participants struggle to interpret data, and the narratives provided are not valued. Only four participants stated that supervisors and colleagues value the narratives they produce.

Eight participants said they currently analyse the quality of routine data, noting, *"This is all that data capturers do."* All reported that they *"just follow the DHIS."* According to participants, this involves removing all outliers (whether they are valid or not), trace and verification, and ensuring completeness and timeliness. None of the respondents thought anything was missing in how they manage and clean data to improve its quality.

When asked how they manage poor quality data during analyses, nine participants described a trace and verification process, noting, *"It doesn't help us to analyse corrupted data."* Only one respondent described managing poor quality data during analyses by replacing missing values with zeroes.

Finally, interviewers asked participants to provide examples of data use when making decisions. As ***Figure 10*** shows, 22 of the 29 who responded said that they had no specific examples of data use.

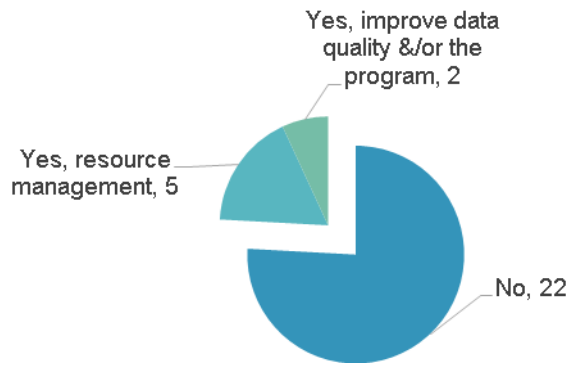

Figure 10: How Data Are Used to Make Decisions (n = 29)

Limitations of the Assessment

The study team developed the key informant interview guide (KIIG) to assess two core competency dimensions: (1) data collection and data management, and (2) data analysis, dissemination, and use (UNAIDS, 2010; UNAIDS MERG, 2010). In the interviews and focus group discussions (FGD), we were unable to observe any participants conducting analyses or the outputs of those analyses. Hence, we relied on participants' self-reports of their knowledge, skills, and experience in conducting data analyses, without verifying these objectively. Further, specific job descriptions for individual participants that outlined what data analyses they were supposed to do did not exist. Through interviewing participants, we could only compare the two core competencies against a generic list in the DHMIS Policy.

Initially, the study team decided to conduct face-to-face interviews with individual participants. However, because this was not possible due to scheduling constraints within DoH, the study team opted at the last minute to add FGDs. Although the FGD guide and key informant interview guide covered the same domains, KIIG questions had to be adapted to suit the FGD format. Focus groups tend towards agreement on topics, and this may have masked other findings that might have emerged had we been able to implement the assessment as initially planned.

The number of people interviewed (37) may be seen as a third limitation. Nonetheless, in line with good practices, we conducted 12 interviews, with a wide range of different personnel responsible for data analysis. Further, key themes that emerged from the interviews and FGDs were consistent, reflecting that the information obtained is representative of ongoing practices and experiences within the DoH.

Interpreting the Findings to Build a Data Analysis Curriculum

Producing information requires the use of statistical methods that describe, illustrate, condense, recap, and evaluate raw data. Part of data analysis involves ensuring data quality and creating standardised performance reports. This assessment confirms the NDoH rapid assessment findings that the DoH has limited capacity to conduct analysis and use the information produced to inform decisions (DoH, 2011a).

During the assessment, the study team began to think of how best to approach enhancing DoH's capacity to assess and use its data. The study team decided to plot DoH's capacity on a continuum of data analysis skills ranging from basic, to intermediate, to advanced *(*see ***Figure 11)***.

Advanced		- Build models and conduct regression analyses - Construct a Kaplan-Meier estimate of the survival function - Understand and interpret results from Analysis of Variance (ANOVA)
Intermediate		- Select an appropriate test for comparing two populations on a continuous measure when the two sample t-test is not appropriate - Perform a two-sample t-test and interpret the results - Calculate and interpret a p-value - Calculate and interpret confidence intervals for population means and proportions - Calculate standard normal scores and resulting probabilities - Understand and interpret relative risks and odds ratios - Construct pivot tables in MS Excel - Describe different kinds of data sources and appropriate analyses for each
Basic	**Basic-Advanced**	- Understand the role of bias and confounders - Display findings using graphs and charts - Conduct descriptive analysis
	Basic-Intermediate	- Understand and calculate Measures of Central Tendency - Know how to clean data by appropriately managing missing values and outliers, and conducting univariate analysis
	Basic-Basic	- Recognize and give examples of different types of data generated by routine health services - Understand definitions of data and data analysis

Source: adapted from Johns Hopkins Bloomberg School of Public Health "Introduction to Biostatistics Course Syllabus" available at http://ocw.jhsph.edu/courses/introbiostats/syllabus.cfm

Figure 11: Continuum of Data Analysis Skills

Based on this continuum, the study team determined that DoH staff need basic data analysis skills to answer questions about service coverage, trends, and characteristics of beneficiary populations. The study team further unpacked what we mean by "basic" into three sub-categories: *basic-basic*, *basic-intermediate*, and *basic-advanced*. Based on the findings of this assessment and the continuum of data analysis, MEval-SIFSA will develop a training workshop to enhance capacity of DoH staff at the three "basic" levels.

Prospective Curriculum to Strengthen DoH Analytical Capacity

This section describes the curriculum and manual MEval-SIFSA will produce to address **key gaps in DoH's capacity** to analyse and use its data.

The primary gap identified is that without the automation inherent in DHIS (an MS Access based application) participants would struggle to understand how to produce the basic trend analyses they currently do. MEval-SIFSA will work to enhance the capacity of DoH data users and data producers required to analyse RHIS data.

Staff know how to process data through DHIS but do not have the knowledge or skills to conduct basic descriptive analysis or to link trends with inputs. We will enhance participants' capacity to conduct a basic descriptive analysis of a dummy routine dataset without DHIS. The curriculum will start with review of measures of central tendency. Next, it will delve into how to set baselines based on data from preceding years and how to determine realistic targets against those baselines. We will also guide participants to think about different types of routine data—financial, human resource, facility operations (patient flow), commodity, and disease burden—and analyse them to set targets more realistically, describe factors that affect achieving those targets, and provide programmatically relevant analyses, such as calculating service coverage. Participants will also review the importance of carefully selecting *correct* denominators for their analyses. Finally, the curriculum will guide participants to explore the difference between meeting targets as a function of *high quality data* versus *good programme performance*. Part of this effort will review data quality (such as completeness, timeliness, and correctness).

DoH staff need to improve their understanding of how to manage poor quality data during analysis. Participants talked about struggles with poor quality data, automatically replacing missing values with zeroes, and excluding all outliers, whether valid or not. The training workshops will provide a forum for participants to discuss better strategies to manage data quality during analysis. The workshops will also allow participants to explore different aspects of completeness (all elements reported from all sites that should report those elements) and timeliness (all data are submitted, processed, reported, and used in a timeframe that facilitates adaptation to real-world circumstances).

The majority of DoH staff said they need to understand basic M&E and public health approaches to respond to disease in populations. The curriculum will devote a brief session to exploring results chains and their relationship to programme design and data analysis. We will revisit basic concepts such as frequency, ratios, comparing frequencies of disease, and prevalence and incidence.

DoH staff need to produce better graphs, charts, tables, and narratives to communicate information. The curriculum will devote time for participants to build their knowledge and skills in selecting indicators to analyse, how to display them, and how to produce narratives that explain the findings. During this session, participants will learn to interpret the information they have produced and share this with supervisors, programme managers, and other colleagues in a manner that sparks discussion about use to improve programme implementation and/or management.

DoH staff said they are motivated to analyse data, but that it is difficult to develop data analysis skills in an environment tied to DHIS with a weak culture of information use. The training will indirectly address this by highlighting that *data analysis and use is everyone's responsibility*. The curriculum will also devote time to lead participants to understand that *quality analyses can help health professionals at all levels do their jobs more efficiently and effectively* by encouraging participants to think about their own personal professional development *vis-à-vis* data analysis. The curriculum will tailor specific sessions for specific job categories as described in DHMIS standard operation procedures. These sessions will guide participants to learn about their expected functions and explore how performing these functions can benefit them professionally. Through this, MEval-SIFSA will support DoH in implementation of the DHMIS Policy.

DoH staff said they do not have job aides (procedures and tools) to guide them when they conduct analyses. We will produce job aides that DoH personnel can hang in their workstations. We will also build the technical assistance site visits around these job aides. Similarly, job aides will address specific functions per job category, as outlined in the DHMIS Policy. During the breakout session described above, participants will explore and understand the job aides and make a plan to use them in their work. The curriculum will tailor job aides to specific job categories and related tasks. Through these job aides, MEval-SIFSA will support implementation of DoH's mandate for key positions to perform key functions.

Conclusion

Collective efforts to enhance capacity in data analysis, interpretation, and use in decision and policy making are expected to contribute to improved monitoring and management of health programmes, including HIV and AIDS programmes, as well as improved service delivery and programme performance. These capacities will play a role in achieving South Africa's Vision 2030 of "a health system that works for everyone and produces positive health outcomes" and "a long and healthy life for all South Africans."

This rapid assessment contributes to the DoH having a better understanding of its data analysis challenges so that it can address them and progress in its efforts to produce the necessary information to support Vision 2030. The findings from this rapid assessment will help the DoH to:

- Increase the capacity of senior management and information personnel (both data users and data producers) to analyse, interpret, and use data
- Revise the DHMIS Policy listing current personnel who conduct data analysis such as planning managers
- Review key data analysis positions, such as epidemiologists, that remain vacant in provinces and districts

The **DoH has the opportunity to harness support offered by development partners to implement the findings of this assessment and should do so**. Its **development partners have a crucial role** to play in contributing to addressing the identified gaps. In addition to the support MEval-SIFSA provides to enhance the DoH's capacity to analyse and use its routine health data, USAID/ PEPFAR and other development partners need to continue supporting and allocating resources to support DoH's capacity enahancment efforts.

Next Steps with Timeline

Below is the proposed timeline of necessary tasks to commence rollout of data analysis training and technical assistance, by June 2016, to assist the DoH address findings of this assessment.

Task	Jan	Feb	Mar	Apr	May	Jun
Complete and disseminate the Data Analysis Rapid Needs Assessment Report to the DoH National, Provincial and Districts, USAID/PEPFAR, and other stakeholders		X	X	X	X	
Develop and collaborate with the DoH on an appropriate curriculum and manual, and pilot	X	X	X	X	X	
Finalise manual and get endorsement from DoH						X
Facilitate the first training workshop and plan for follow-up technical assistance site visits						X

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Annex 1: Study Team Composition

Member	Study Role	Job Title	Organisation
Tara Nutley	Technical Oversight	Data Use Technical Advisor	MEASURE Evaluation, Palladium
Roselyn Marandu-Kareithi	Technical Oversight	Data Use Advisor	MEval-SIFSA, Palladium
Verne Kemerer	Lead Researcher	Research Utilization Advisor	MEval-SIFSA, Palladium
Nosipho Mbanjwa	Research Assistant – in Gauteng Province	Provincial Capacity Building Coordinator	MEval-SIFSA, JSI
Zamandwandwe Nxumalo	Research Assistant – in North West Province	Provincial Capacity Building Coordinator	MEval-SIFSA, JSI
Rentia Voormolen	Research Assistant – in Free State Province	Provincial Capacity Building Coordinator	MEval-SIFSA, JSI
Sam Thela	Research Assistant – in KwaZulu-Natal Province	Provincial Capacity Building Coordinator	MEval-SIFSA, JSI
Elvis Ganyaupfu	Research Assistant – literature review	Data Analyst	MEval-SIFSA, JSI
Olina Ngwenya	Research Assistant – literature review	Data Analyst	MEval-SIFSA, Palladium

Annex 2: Key Informant Interview Guide

MEASURE EVALUATION SIFSA DATA ANALYSIS NEEDS ASSESSMENT TOOL

PARTICIPANT INFORMATION AND INTRODUCTION

Date of Interview:	__/__/____
Start time:	
End time:	
Key Informant Interview Guide ID:	
Name of Interviewer (s):	
Name of Participant:	
Job title/Designation of Participant:	
Department:	
Province:	
District:	
Participant's Work Address:	
Participant's Mobile Number:	
Participant's e-mail:	

Notes to Interviewer:

- Assure respondents that the information collected is confidential and people will not be quoted by name.
- The questions that follow are open-ended and require you to probe. It is imperative you are well-acquainted with the questions so you can probe where appropriate. *PROBING questions are noted in italics.*
- Where respondents have answered a question previously, do not ask again but note that the question was answered.
- Be sure to **NOTE** any good **QUOTATIONS (word-for-word)** given by the person.

Welcome

Thank you for agreeing to participate in this interview. My name is [**NAME OF INTERVIEWER**]. I am with MEASURE Evaluation Strategic Information for South Africa (MEval-SIFSA) project and I will be talking with you today. MEval-SIFSA is a project in cooperative agreement with The United States Agency for International Development, or USAID. We have been commissioned by the National Department of Health (NDoH) to conduct a rapid needs assessment which aims to:

1) Identify data analysis needs of DoH at national, provincial and district levels that MEval-SIFSA can provide through training and technical assistance

2) Establish the data analysis baseline of DoH at national, provincial and district levels, before MEval-SIFSA begins to enhance DoH's capacity

3) Inform curriculum development of the Data Analysis training workshop manual

Ground Rules

We will keep confidential everything you say during this interview. To protect your privacy, we will not connect your name directly to statements in the final report. At any time during the interview, please feel free to let me know if you have questions or if you would rather not answer any specific questions. You are under no obligation. You may stop the interview at any time for any reason. There are no *right* or *wrong* answers – we are attempting to understand how to enhance the capacity of the department of health to conduct analyses of routine HIV data. Your opinion will support us to do so.

This interview should take approximately 45-60 minutes to complete. Thank you for meeting with us today.

#	Question	Response
1. Participant Characteristics		
101	***Observe*** the gender of the participant.	1–Female 2–Male
Enumerator to read to participant: *I am going to start by asking you about your work*.		
102	What is your current position/title?	
103	How long have you been working in your current position?	__ __ Number of Years (Round to nearest year; 00 = Less than six months) 77-Don't know 88-Refuse to Answer 99-Doesn't understand the question
104	Have you had any experience in the health system before you started your current position?	1-Yes 2-No 77- Don't know 88-Refuse to answer 99-Doesn't understand the question
105	What is the highest level of education you completed?	1-Primary 2-Secondary 3-High school 3-Vocational School (Qualification/Diploma) 4-University 5-Post-Graduate 77-Don't know 88-Refuse to Answer

#	Question	Response
		99-Doesn't Understand the Question
Enumerator to read to participant: ***Now I want to ask you a few questions about any data analysis trainings you attended in the past year.***		
201	Did you attend any data analysis in-service trainings during the past year?	1-Yes 2-No **(GO TO➔301)** 77-Don't know **(GO TO➔301)** 88-Refuse to Answer **(GO TO➔301)** 99-Doesn't Understand the Question **(GO TO➔301)**
202	What was the title of the training?	
203	What organisation facilitated the training?	
204	What was the most important thing you learnt about data analysis during this training?	
205	Have you been able to put what you learnt about data analysis during this training to use in your current job?	1-Yes 2-No **(GO TO➔301)** 77-Don't know **(GO TO➔301)** 88-Refuse to Answer **(GO TO➔301)** 99-Doesn't Understand the Question **(GO TO➔301)**
206	How specifically have you been able to put it to use?	
Enumerator to read to participant: ***Now I want to ask you a few questions about the data systems you use, and any norms and standards that guide your work.***		
301	How do you define data analysis? What do you do when you analyse data?	
302	Do you conduct data analysis for your job?	1-Yes 2-No **(GO TO➔401)** 77-Don't know **(GO TO➔401)** 88-Refuse to Answer **(GO TO➔401)** 99-Doesn't Understand the Question **(GO TO➔401)**
303	What statistical analysis software do you use in your job (such as MS Excel, Stata, SPSS, SAS)?	
304	Do you have ***procedures*** to guide your data analysis at your disposal?	1-Yes 2-No **(GO TO➔306)** 77-Don't know **(GO TO➔306)** 88-Refuse to Answer **(GO TO➔306)** 99-Doesn't Understand the Question **(GO TO➔306)**

#	Question	Response
305	What are those procedures? [**COLLECT ANY DOCUMENT FOR SYNTHESIS IN THE REPORT AND AS A SOURCE TO DEVELOP THE CURRICULUM**]	
306	Do you have ***tools*** to guide your data analysis at your disposal?	1-Yes 2-No **(GO TO➔401)** 77-Don't know **(GO TO➔401)** 88-Refuse to Answer **(GO TO➔401)** 99-Doesn't Understand the Question **(GO TO➔401)**
307	What are those tools? [**COLLECT ANY AVAILABLE TOOLS FOR SYNTHESIS IN THE REPORT AND AS A SOURCE TO DEVELOP THE CURRICULUM**]	
Enumerator to read to participant: ***Now I am going to ask about the motivation, attitudes, and values you have about data analysis.***		
401	Describe your knowledge level to conduct data analyses.	
402	Does your terms of reference include a mandate for you to conduct data analyses?	1-Yes 2-No 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
403	What skills do you have to conduct data analyses? [**PROBE–STATISTICAL BACKGROUND, SOFTWARE SKILLS, ETC**]	
404	What skills do you need to conduct analyses that are more advanced?	
405	What skills do you need to conduct data analyses more efficiently?	
406	How motivated are you to conduct data analyses?	
407	What type of data analyses do you conduct? [**CHECK ALL THAT APPLY**]	1-Descriptive data analysis 2-Triangulation [**PROBE–FOR EXAMPLE, USE SERVICE DELIVERY COUNT DATA WITH CENSUS DATA**] 3-Generate additional questions for further analyses 4-Establishing Baselines and Target Setting 5-Trend analyses for programme performance monitoring 6-Other, please specify:

#	Question	Response
		77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
Enumerator to read to participant: ***Now I am going to ask about the routine data you have available to analyse.***		
501	What type of data do you have available for analyses? [**CHECK ALL THAT APPLY**]	1-DHIS data 2-ETR.net 3-TIER.net 4-Other routine health service data, please specify: 5-Surveillance data, please specify: 6-Survey data, please specify: 7-Other population-based data, please specify: 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
502	How do you access routine data, such as data in the DHIS **[PROBE: Do you use pivot tables]**?	
503	How do you use routine data, such as data in the DHIS, in your job?	
504	Are there things you struggle to do when analysing routine data?	
Enumerator to read to participant: ***Now I am going to ask about what specifically you do when you conduct analyses for programme managers and other decision makers.***		
601	Do you analyse data for programme performance?	1-Yes 2-No **(GO TO➔701)** 77-Don't know **(GO TO➔701)** 88-Refuse to Answer **(GO TO➔701)** 99-Doesn't Understand the Question **(GO TO➔701)**
602	What specific steps do you take to analyse data for programme performance?	
603	What would you say is missing in your programme performance analyses?	

#	Question	Response
604	Are there additional analyses for programme performance you would like to do but are unsure of how to do it?	1-Yes 2-No **(GO TO➔701)** 77-Don't know **(GO TO➔701)** 88-Refuse to Answer **(GO TO➔701)** 99-Doesn't Understand the Question **(GO TO➔701)**
605	What specifically would you like to do but are unsure of how to do for programme performance data analyses?	
Enumerator to read to participant: ***Now I am going to ask about the types of products you produce based on your analyses.***		
701	Do you produce any graphs, charts, and/or tables based on your data analyses?	1-Yes 2-No **(GO TO➔704)** 77-Don't know **(GO TO➔ 704)** 88-Refuse to Answer **(GO TO➔ 704)** 99-Doesn't Understand the Question **(GO TO➔ 704)**
702	Please describe the types of graphs, charts, and/or tables you produce based on your data analyses.	
703	Do supervisors and colleagues value the graphs, charts, and/or tables you produce based on your data analyses?	1-Yes, completely 2-Yes, mostly 3-Yes, somewhat 4-Yes, a little 5-No, not at all 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
704	Do you produce any narratives based on your data analyses?	1-Yes 2-No **(GO TO➔801)** 77-Don't know **(GO TO➔801)** 88-Refuse to Answer **(GO TO➔801)** 99-Doesn't Understand the Question **(GO TO➔801)**
705	Please describe the narratives you produce based on your data analyses.	
706	What specific steps do you take to produce these narratives?	
707	Do supervisors and colleagues value the narratives you produce based on your data analyses?	1-Yes, completely 2-Yes, mostly

#	Question	Response
		3-Yes, somewhat 4-Yes, a little 5-No, not at all 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
Enumerator to read to participant: ***Now I am going to ask about what specifically you do when you conduct analyses to assess the quality of data.***		
801	Do you currently analyse the quality of routine data?	1-Yes 2-No **(GO TO➔901)** 77-Don't know **(GO TO➔901)** 88-Refuse to Answer **(GO TO➔901)** 99-Doesn't Understand the Question **(GO TO➔901)**
802	What specific steps do you take to analyse data quality?	
803	Is anything missing in your data quality analysis?	1-Yes 2-No **(GO TO➔901)** 77-Don't know **(GO TO➔901)** 88-Refuse to Answer **(GO TO➔901)** 99-Doesn't Understand the Question **(GO TO➔901)**
804	What is missing in your data quality analysis?	
805	Do you analyse routine data for completeness?	1-Yes 2-No 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
806	Do you analyse routine data for timeliness?	1-Yes 2-No 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
807	How do you manage poor quality data when conducting analyses for programme performance?	

#	Question	Response
Enumerator to read to participant: ***Now I am going to ask you about how your organisation manages staff and resources for data analyses and the level of influence data analysis staff may have.***		
901	What type of staff are available to conduct data analyses?	
902	Are there clearly defined roles and responsibilities for staff who are to conduct data analyses?	1-Yes 2-No 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
903	At what level are staff who are responsible for data analyses	1-Senior 2-Middle 3-Junior 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
904	What is their level of influence on decision-makers?	1-High 2-Moderate 3-Low 4-None 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question
Enumerator to read to participant: ***Now I am going to ask about how your work environment supports analyses and use of routine data.***		
1001	Please describe the information culture of your organisation. [**PROBE–*Information Culture* refers to the values, norms, and practices around managing and using data and information.**]	
1002	Are data easily accessible by anyone with a legitimate use of those data?	1-Yes 2-No 77-Don't know 88-Refuse to Answer 99-Doesn't Understand the Question

#	Question	Response
1003	What would you say is the main strength in the standard functions your department to support analyses of routine data?	
1004	What would you say is the main challenge in the standard functions of your department to support analyses of routine data?	
1005	Do you have any examples of when the data you have analysed has been used in decision making?	

We are finished with our questions. Thank you for your time.

Annex 3: Focus Group Discussion Guide

- *Please note that each focus group discussion (FGD) participant must complete an individual consent form and the FGD Register before discussions can begin.*
- *Please collect any available Monthly, Quarterly, and POA reports produced by participants.*

§2: We are going to start by discussing any data analysis trainings you attended in the past year.

QNR#	Discussion Question
201	In the past year, what data analysis trainings did you attend?
	PROBE: What organisation facilitated this training?
204	What was the most important thing you learnt about data analysis during this training?
205 206	How specifically have you been able to put what you learnt about data analysis during this training to use in your current job?

§3: Now let's talk about the data systems you use, and any norms and standards that guide your work.

QNR#	Discussion Question
301	What statistical analysis software do you use in your job (such as MS Excel, Stata, SPSS, SAS)?
302	Do you have ***procedures*** to guide your data analysis at your disposal?
	PROBE: Collect any document for synthesis in the report and as a source to develop the curriculum
304	Do you have ***tools*** to guide your data analysis at your disposal?
	PROBE: Collect any tools for synthesis in the report and as a source to develop the curriculum

§4: Now let's explore your motivation, attitudes, and values about data analysis.

QNR#	Discussion Question
407	How do you define data analysis? That is, what do you do when you analyse data?
408	What type of data analyses do you conduct?
	PROBE: • Descriptive data analysis • Triangulation, for example, do you use service delivery count data with census data? • Generate additional questions for further analyses • Establishing Baselines and Target Setting • Trend analyses for programme performance monitoring • Other, please specify:

405	What skills do you need to conduct data analyses more efficiently?
404	What skills do you need to conduct analyses that are more advanced?
406	How motivated are you to conduct data analyses?
	PROBE: Does your Terms of References include a mandate for you to conduct data analyses?

§5: Now let's chat about the routine data you have available to analyse.

QNR#	Discussion Question
501	What type of data do you have available for analyses?
	PROBE: • DHIS data • ETR.net • TIER.net • Other routine health service data, please specify: • Surveillance data, please specify: • Survey data, please specify: • Other population-based data, please specify:
502	How do you access routine data?
	PROBE: Do you use pivot tables?
504	Are there things you struggle to do when analysing routine data?
503	How do you use routine data in your job?

§6: Let's explore what specifically you do when you conduct analyses for programme managers and other decision-makers.

QNR#	Discussion Question
602	What specific steps do you take to analyse data for programme performance?
603	What would you say is missing in your programme performance analyses?
604	Are there additional analyses for programme performance you would like to conduct but are unsure how to carry them out?

§7: Let's explore what specifically you do when you conduct analyses to assess the quality of data.

QNR#	Discussion Question
702	What specific steps do you take to analyse data quality?
	PROBE (707 / 708): Do you analyse routine data for completeness? Do you analyse routine data for timeliness?
703	Is anything missing in your data quality analysis?
705	Are there additional data quality analyses you would like to conduct but are unsure how to carry them out?
709	How do you manage poor quality data when conducting analyses for programme performance?

§8: I would like to learn from you about the types of products that you produce based on your analyses.

QNR#	Discussion Question
802 803	Please describe the types of graphs, charts, and/or tables; you produce based on your data analyses. What specific steps do you take to produce these graphs, charts, and/or tables?
804	Do supervisors and colleagues value the graphs, charts, and/or tables you produce based on your data analyses?
806 807	Please describe the narratives you produce based on your data analyses. What specific steps do you take to produce these narratives?
808	Do supervisors and colleagues value the narratives you produce based on your data analyses?

§9: In order for you to use any skills that you may acquire to analyse data, your organisation must have the means for you to implement them. Let us now discuss how your organisation manages staff and resources for data analyses. We will also explore the level of influence data analysis staff may have with their supervisors and other decision-makers.

QNR#	Discussion Question
902	Are there clearly defined roles and responsibilities for staff who are to conduct data analyses?
904	What is their level of influence on decision-makers?
1001	Please describe the information culture of your organisation.
	PROBE: *Information culture* refers to the values, norms, and practices in managing and using data and information.
1002	Are data easily accessible by anyone with a legitimate use of those data?
1003	What would you say is the <u>main strength</u> of your department to support analyses of routine data?
1004	What would you say is the <u>main challenge</u> of your department to support analyses of routine data?
1005	Do you have any examples of when the data you have analysed has been used in decision making?

We are finished with our discussion. Thank you for your time.

Annex 4: PEPFAR South Africa Focus Districts

Summary Table: PEPFAR South Africa Focusing for Impact August 2015			
	Focus for Impact / Scale Up Districts	**Sustained Districts (Long Term Transition**)**	**National**
Number of Districts	**27**	**9**	**52**
Number of PLHIV	5.3 million	710,888	6.4 million
Epidemic Control (81% of PLHIV)	4.3 million		5.2 million
*Number of sites**	1,957	187	5,037

*Sites include high-volume health facilities reporting data in the national DHIS

**Health facilities outside of Scale Up districts were included for Sustained Support (Longer Term Transition) if they contributed to 80% of national "on ART" AND if these high volume sites accounted for at least 25,000 patients on ART in the district

Province	District	PLHIV HSRC		
Gauteng	City of Johannesburg	533,959	Scale Up	Scale Up Districts: Full Package of Care, Treatment, Prevention, and Health Systems Strengthening Support
Kwa-Zulu Natal	eThekwini	516,166	Scale Up	
Gauteng	Ekhuruleni	468,520	Scale Up	
Gauteng	City of Tshwane	352,181	Scale Up	
Mpumalanga	Ehlanzeni	286,245	Scale Up	
Kwa-Zulu Natal	Umgungundlovu	225,284	Scale Up	
North West	Bojanala Platinum	211,338	Scale Up	
Mpumalanga	Gert Sibande	211,235	Scale Up	
Gauteng	Sedibeng	205,035	Scale Up	
Western Cape	City of Cape Town	177,587	Scale Up	
Kwa-Zulu Natal	Zululand	176,355	Scale Up	
Kwa-Zulu Natal	uThungulu	166,927	Scale Up	
Eastern Cape	O R Tambo	163,070	Scale Up	
Kwa-Zulu Natal	Ugu	147,378	Scale Up	
Limpopo	Mopani	132,068	Scale Up	
Mpumalanga	Nkangala	128,985	Scale Up	
Free State	Lejweleputswa	122,037	Scale Up	
Limpopo	Capricorn	121,410	Scale Up	
Kwa-Zulu Natal	Uthukela	116,758	Scale Up	
North West	Ngaka Modiri Molema	115,102	Scale Up	
Free State	Thabo Mofutsanyane	114,282	Scale Up	
Eastern Cape	Chris Hani	110,030	Scale Up	
Eastern Cape	Buffalo City	103,943	Scale Up	
Eastern Cape	Alfred Nzo	102,719	Scale Up	
North West	Dr Kenneth Kaunda	101,876	Scale Up	
Eastern Cape	Amatole	98,884	Scale Up	
Kwa-Zulu Natal	Harry Gwala	97,684	Scale Up	
	Sub Total	***5,307,058***		
Kwa-Zulu Natal	Umzinyathi	93,587	Sustained (Longer term	Sustained support: longer term transition of support for 170 high-volume health facilities for care and treatment services
Eastern Cape	Nelson Mandela	90,413	Sustained (Longer term	
Kwa-Zulu Natal	Umkhanyakude	89,321	Sustained (Longer term	
Kwa-Zulu Natal	Amajuba	84,239	Sustained (Longer term	
Kwa-Zulu Natal	iLembe	83,851	Sustained (Longer term	
Gauteng	West Rand	59,460	Sustained (Longer term	
Free State	Mangaung	58,645	Sustained (Longer term	
	Sub Total	***559,516***		
Limpopo	Greater Sekhukhune	81,917	Sustained (Targeted TA in at-risk areas - Long Term Transition)	Sustained support: Longer term transition of Targeted Care, Treatment and Prevention support in districts with peri-mining and industrial hot spots
Limpopo	Waterberg	69,450	Sustained (Targeted TA in at-risk areas - Long Term Transition)	
	Sub Total	***151,367***		
Limpopo	Vhembe	67,717	Transition	Short Term Transition
North West	Dr Ruth Segomotsi Mompati	50,034	Transition	Short Term Transition
Northern Cape	Frances Baard	45,522	Transition	Short Term Transition
Free State	Fezile Dabi	45,043	Transition	Short Term Transition
Eastern Cape	Joe Gqabi	37,413	Transition	Short Term Transition
Eastern Cape	Cacadu	34,274	Transition	Short Term Transition
Western Cape	Cape Winelands	28,281	Transition	Short Term Transition
Western Cape	Eden	24,019	Transition	Short Term Transition
Northern Cape	John Talole Gaetsewe	21,246	Transition	Short Term Transition
Northern Cape	ZF Mgcawu	12,940	Transition	Short Term Transition
Western Cape	West Coast	12,140	Transition	Short Term Transition
Free State	Xhariep	11,777	Transition	Short Term Transition
Northern Cape	Pixley Ka Seme	9,121	Transition	Short Term Transition
Western Cape	Overberg	5,394	Transition	Short Term Transition
Northern Cape	Namakwa	3,198	Transition	Short Term Transition
Western Cape	Central Karoo	712	Transition	Short Term Transition
	Sub Total	***408,832***		
	Total	**6,426,773**		

Approved by bi-lateral PEPFAR Steering Committee

Annex 5: Participant Register

Participant	Job Title	Organisation	Province	District
CHIKOBVU, Perpetual	Director, Information Management and Research	Free State DoH	Free State	N/A
KHAOJANE, Andreis	Assistant Director, Information Management and Research	Free State DoH	Free State	N/A
MASESI, Nophole	Clinical Programme Coordinator	Free State DoH	Free State	N/A
RAMETSI, Ouma	Manager, Strategic Information and Planning	Free State DoH	Free State	N/A
BATES, Gina	District Information Officer	Lejweleputswa DoH	Free State	Lejweleputswa
LESUPI, Khotso	Data Analyst	Lejweleputswa DoH	Free State	Lejweleputswa
MORIGIHLANE, Lebo	Data Analyst	Lejweleputswa DoH	Free State	Lejweleputswa
MOSENOGI, Mmatsie	HCT Coordinator	Lejweleputswa DoH	Free State	Lejweleputswa
NONYANE, Liemiso	MNCWH &PMTCT Coordinator	Lejweleputswa DoH	Free State	Lejweleputswa
SEGALO, Baakile	Data Capturer	Lejweleputswa DoH	Free State	Lejweleputswa
SELEVU, Thelma	Tuberculosis Programme Coordinator	Lejweleputswa DoH	Free State	Lejweleputswa
THULO, Lebo	Data Analyst	Lejweleputswa DoH	Free State	Lejweleputswa
KALAOTE, Mpho	Acting Primary Health Care Manager	Mangaung Metro PHC	Free State	Mangaund Metro
MALETE	Acting HAST Manager	Mangaung Metro PHC	Free State	Mangaund Metro
SIBIZO, Lerato	M&E Specialist	Mangaung Metro PHC	Free State	Mangaund Metro
SONDIYAZI, Nozipo	District Manager	Mangaung Metro PHC	Free State	Mangaund Metro
ABRAHAMS, Fiona	Data Manager	Gauteng DoH	Gauteng	N/A
NGKO, Kgalebi	Deputy Director, M&E	Gauteng DoH	Gauteng	N/A
TSHABALALA, M	Data Manager	Gauteng DoH	Gauteng	N/A
VALASHIYA, Andy	Data Manager	Gauteng DoH	Gauteng	N/A
SIKHAKHANE, Benny	Deputy Director, M&E	City of Johannesburg DoH	Gauteng	City of Johannesburg
GOVENDER, Jack	General Manager, Planning, M&E	KZN DoH	Kwa-Zulu Natal	N/A

Participant	Job Title	Organisation	Province	District
MOODLEY, Nirvasha	Manager, Data Management	KZN DoH	Kwa-Zulu Natal	N/A
SNYMAN, Ester	Manager, Planning	KZN DoH	Kwa-Zulu Natal	N/A
GOVENDER, Sally	Deputy District Manager, Planning, M&E	Ugu District DoH	Kwa-Zulu Natal	Ugu
PRINS, Marlien	Health Informatics Team Lead	Ugu District DoH	Kwa-Zulu Natal	Ugu
GREEN, Mark	DDM, Planning, M&E	Umgungundlovu DoH	Kwa-Zulu Natal	Umgungundlovu
SHOWE, Petro	Manager, NHI M&E	Umgungundlovu DoH	Kwa-Zulu Natal	Umgungundlovu
METSILENG, Lebotsa	Director, Statistics	NW DoH	Northwest	N/A
MOTLHABANE, Kgosi	Deputy Director General, Health Services	NW DoH	Northwest	N/A
REICHEL, Frikkie	Director, Head Office	NW DoH	Northwest	N/A
SHADI, Clifford	District Information Officer	Bojanala DoH	Northwest	Bojanala
TLHOWE, Lawrence	SDM	Bojanala DoH	Northwest	Bojanala
CENGE, Bongiswa	Stakeholder Coordinator	NMM DoH	Northwest	Ngaka Modiri Molema
MOALOSI, Derrick	District Information Officer	NMM DoH	Northwest	Ngaka Modiri Molema
MOGAPI, Glen	Director, DHS	NMM DoH	Northwest	Ngaka Modiri Molema
RAPHEPE, Kefilwe	Assistant Director, M&E	NMM DoH	Northwest	Ngaka Modiri Molema

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