



Republic of Zambia
Ministry of Health

***Data Quality Audit (DQA)
Guidelines
(Health Management Information System)***

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Foreword

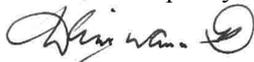
The Government of the Republic of Zambia with support from partners has continued to develop a strong health information management system (HMIS). Development of a strengthened HMIS is deemed pivotal in supporting evidence-based planning, resource allocation and policy implementation at all levels of health care delivery. An optimal HMIS system ensures that the data collected, reported and utilized by the health care delivery system are of unquestionable quality so as to effectively direct decision-making at patient/client, health care delivery system and health system management levels.

To strengthen Zambia's HMIS, the government has undertaken two major revisions and a number of minor reviews of the HMIS over the past 15 years in the quest to respond to the needs of the health care delivery system.

Despite these revisions, data in reports from several health facilities was alleged to be of low quality, which resulted in limited output of accurately generated key indicators. This perception of the quality of data remained unconfirmed over years due to lack of official standardized data assessment documentation. (Over the past years, data quality assessments have been undertaken but used variations in approaches, resulting into inconsistencies). As a result, it is difficult to tell the extent of the problem of data quality and whether this effort has contributed to improving data quality or not.

Against this background, the Ministry of Health (MOH) has developed this first edition of standardized *Data Quality Audit Guidelines* with the aim to provide clear guidance to programme managers on how to conduct data quality audits within and to their health institutions. These guidelines are therefore aimed at standardizing the process of conducting data quality assessments and further strengthening the systems for managing information in all our health institutions. This initiative will also provide a platform for documenting strengths and shortcomings in the systems (via monitoring) for consideration during major revisions of the system in the future.

I therefore urge all programme managers at all levels to use these guidelines each time they undertake data quality audits of their health institutions. This practice will not only improve data management and usage at all levels, but will also ensure that data being collected and presented is of good quality and can inform policy decisions.



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Permanent Secretary

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A number of people contributed to the successful production of this first edition of the *Data Quality Audit Guidelines* for use by the Ministry of Health (MOH) and its cooperating and/or implementing partners. The invariable dedication and input of personnel from the national, provincial and district level and cooperating partners was key in ensuring production of a timely and quality document.

The MOH would therefore like to thank the following individuals who were key in the development of the first edition of the guidelines: Mr. Calvin Kalombo (Senior M&E Officer), Mrs. Katongo Mumbi Silwizya (Health Information Analyst), Ms. Emily Moonze (Management Specialist Team Leader- ZISSP), Masauso Phiri (Data Management Officer- MOH-HQ), Peter Funsani (M&E Officer- MOH-HQ), Mr. Charles Kachaka (District Health Information Officer - Kasama), Mr. Darfy Willie Chaponda (District Health Information Officer - Chikankata), Ms. Chumary Munyinya (District Health Information Officer - Ndola), Mr. Mutale Mwango (Senior Health Information Officer - Western), Mr. Kingsley Kapemfu (Senior Health Information Officer - Copperbelt), Kawana Lisulo (Senior Health Information Officer - Chainama Hospital), Josephat Kunda (Senior Health Information Officer- Southern), Janet Phiri (District Health Information Officer –Sesheke), and Paul Munsanje (Health Information Officer - Lewanika General Hospital).

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
CHN	Child Health and Nutrition
CI	Confidence Interval
CL	Confidence Level
DE	Data Element
DHIS	District Health Information System
DHO	District Health Office
DMO	District Medical Office(r)
DQA	Data Quality Audit
GAVI	Global Alliance on Vaccines and Immunization
GFATM	Global Fund to Fight AIDS, TB, and Malaria
HIA	Health Information Aggregation
HIS	Health Information System
HIV	Human Immuno-deficiency Virus
HMIS	Health Management Information System
M&E	Monitoring and Evaluation
MCDMCH	Ministry of Community Development, Mother and Child Health
MDG	Millennium Development Goals
MOH	Ministry of Health
ND	Notifiable Disease
NHSP	National Health Strategic Plan
PA	Performance Assessment
PHO	Provincial Health Office
PMO	Provincial Medical Office(r)
PMTCT	Prevention of Mother To Child Transmission
PRISM	Performance of Routine Information System Management
RHIS	Routine Health Information System
SOP	Standard Operating Procedure
TB	Tuberculosis
TSS	Technical Supportive Supervision
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organisation
ZISSP	Zambia Integrated Systems Strengthening Program

Table of Contents

Foreword	ii
Acknowledgement.....	iii
Abbreviations	iv
Table of Contents	v
List of Tables	vii
List of Figures	vii
Introduction	1
Background	1
General Overview	2
Objectives Of Conducting Data Auditing	2
Conceptual Framework.....	2
Methodology	3
1. Data Quality Defined.....	3
2. What Data to Collect	5
Audit Outputs	9
Ethical Considerations	9
Implementation Overview	9
Stage 1: Preparing for the Audit	11
Step 1 – Selecting Data Elements.....	11
1.1 Sampling Data Elements on the Service Delivery Aggregation Form (HIA2).....	12
1.2 Open a blank Excel Spread sheet.	13
1.3 Use the sampling frame in Annex 4 to identify which data elements represent the sampled numbers in Table 5 from the CHN list.	13
1.4 Repeat 1 and 2 above for each programme to select the desired sample size under each area as stipulated in column (d) of Table 4.	14
1.5 Sampling Data Elements on the Disease Aggregation Form (HIA1).....	14
Step 2 – Selecting Data Audit Units and Forming Teams	15
2.1 Considerations in choosing sites	15
2.2 What to do if a site does not provide some services	15
2.3 Who Should Be on The Auditing Team.....	15
Step 3 – Review Relevant Documentation.....	15
3.1 Previous audit reports	15
3.2 Feedback reports/dispatches	16
3.3 Most recent PA/TSS report.....	16
3.4 Annual/Revised Action Plan	16
3.5 Additional Information from key informants.....	16
Step 4 – Prepare Data for the Audit	16
4.1 Auditing the Facility Level.....	16
4.2 Auditing the District Level	17
Step 5 – Prepare for Site Visits.....	17
5.1 Information for the District Medical Office.....	17
5.2 Information for the HEALTH Facility	17
Stage 2: Fieldwork - District Health Office	18

Step 6 – Assess Data Management Structures and Systems.....	18
Step 7 – Trace and Verify Data with Facility Reports.....	18
Stage 3: Fieldwork - Health Facility.....	19
Step 8 – Assess Data Collection, Storage and Reporting Systems.....	19
Step 9 – Trace and Verify Data with Primary Data Sources	19
Stage 4: Finalise the Audit.....	20
Step 10 – Preliminary Data Analysis and Presentation (Onsite).....	20
1. Health Facility 21	
2. District Health Office	21
Step 11 – Preparation of the Audit Report.....	22
Step 12 – Discuss Report and Formulate Recommendations	23
Step 13 – Develop a Data Quality Improvement Plan.....	23
References	24
Annex 1: Facility Assessment Tool.....	25
Annex 2: District Assessment Tool	34
Annex 3: Service Deliver Sampling Frame – HIA2	42
Annex 4: Diseases Sampling Frame – HIA1.....	50
Annex 5: Graphing Templates - Samples.....	52
Annex 6: Performance Assessment Guides.....	55

List of Tables

Table 1: Data Needs - Dimensions of Data Quality and HIS Processes	4
Table 2: Description of the data quality assessment tool - health facility.....	6
Table 3: Description of the data quality assessment tool – District.....	8
Table 4: Sample Distribution Table for Data Elements on HIA2.....	12
Table 5: Example of Sampled Numbers - Child Health and Nutrition	13
Table 6: Example - Matching Sampled Numbers with Data Elements.....	13
Table 7: Sample Distribution Table for Data Elements on HIA1	14
Table 8: Facility Audit - Things to Prepare	16
Table 9: District Audit - Things to Prepare.....	17
Table 10: Example on how to complete the questionnaires and score each section	20
Table 11: Facility Performance Assessment Guide	21
Table 12: District Performance Assessment Guide	21
Table 13: Problem Analysis Matrix	23

List of Figures

Figure 1: Performance of Routine Information System Management Framework (Annotated)	3
Figure 2: The Zambia Information Cycle	10

Introduction

Background

The Government of the Republic of Zambia through its line ministry, the Ministry of Health (MOH) has as a vision of : “...providing Zambians with equity and cost effective, quality health care as close to the family as possible”, by enhancing service delivery efficiency through decentralisation. Due to resource constraints, the need to use resources efficiently and the demand for good governance and transparency, the need for evidence-based decision-making cannot be over-emphasised.

As MOH is in the process of implementing its National Health Strategic Plan (NHSP)(2011-15) and its counterpart ministry, the Ministry of Community Development, Mother and Child Health (MCDMCH), having recently (July 2013) launched its Strategic Plan for 2013-16, and with the international community being in its last 18 months of the Millennium Development Goals (MDG) era, the current focus is on conceptualising the post-MDG period that places emphasis on Universal Health Coverage. All these factors place a responsibility on the country for the development and management of an information system capable of meeting the data needs of these aspirations.

This like many other developing countries, Zambia has been exposed to the practice of performance-based release of programme funding that is requested by international funding agencies, such as the Global Alliance on Vaccines and Immunization (GAVI) and the Global Fund to Fight AIDS, TB, and Malaria (GFATM). This condition, coupled with emerging health challenges such as Non-communicable Diseases, requires increasingly higher amounts of quality information.

In reforming the health sector, the government (with support from its partners) has placed information for decision-making at the centre of all forms of planning at each level of health care delivery. In the past 15 years, the government has undertaken two major revisions and a number of minor reviews to the health management information system (HMIS) in the quest to respond to the needs of the health care delivery system. Despite these revisions, data in the reports from several districts was perceived to be of low quality, which resulted in limited output of accurately-generated key indicators. This perception on the quality of data remained unconfirmed over years due to lack of official documentation (although possible reasons leading to compromised data quality has been known for many years).

Literature has also cited quality of data as one of the major contributors to post-implementation failures of many systems (Mutemwa, 2006; Odhiambo-Otieno, 2005) due to its circular relationship with data utilisation – data are not used due to poor quality, which leads to deteriorating data quality and subsequently reduced confidence in the data. Efforts towards ensuring HMIS data quality are as old the 1990s health reforms.

The MOH has come up with various initiatives that are intended to ensure that the data collected, reported and utilised by the health care delivery system are of unquestionable quality so as to effectively direct decision-making at patient/client, health care delivery system and health system management levels. These initiatives, among others, include the following:

- i. Revising the minimum dataset (to lessen the data handling burden);
- ii. Revising data collection and collation forms (to simplify recording);
- iii. Producing protocols and guidelines for data collection, collation and reporting (to standardize data management);
- iv. Integrating data quality and consistent checks in the electronic databases (to trap errors at data entry) and;
- v. Instituting routine quarterly/semi-annual quality checks on the data that have already been collected and reported (data quality audits or assessments).

Although data quality audits have been going on (with varying intentions) for over five years, it is difficult to tell the extent of the problem of data quality and whether this effort has contributed to improving data quality. This gap is partly due to the absence of standards and protocols for conducting these assessments and guidance on how to use accompanying results in improving data quality.

It is against this background that the MOH has decided to develop a standardised approach to assessing the quality of the HMIS data to provide a basis for identifying underlying weaknesses for possible interventions. This initiative will also provide a platform for documenting strengths and shortcomings in the system (via monitoring) for consideration during major revisions of the system in the future.

General Overview

Every data collection system is prone to errors resulting from design oversights or “people-based” mistakes during data collection, processing and transmission. Therefore, before data are transformed into a state useful for decision making, all inherent errors should be removed (data processing). Data errors associated with the collection stage (in the information cycle) are the most difficult to remedy. It is important therefore that as much as possible, errors are reduced to the minimum levels possible, starting with individual patient data. This is only achievable through adequate training and consistent use of standardised guidelines at each stage.

Objectives of Conducting Data Auditing

Data audit is one of the stopgap measures used to enhance data integrity once data have been collected and before they can be put to use. The objectives of conducting data quality auditing are as follows:

1. To quickly CONFIRM:
 - a. the authenticity of data that have been reported through the district by service delivery points
 - b. whether the system adequately addresses basic determinants of data quality at each stage of routine health information processes.
2. To USE THE RESULTS from the audit as input in identifying activities for improving quality of data (and indirectly quality of services) through targeted decision-making informed by data.
3. To provide a standardised quantity that can be compared between or across time points and places as way of MONITORING the performance of the HMIS in producing quality data.

Conceptual Framework

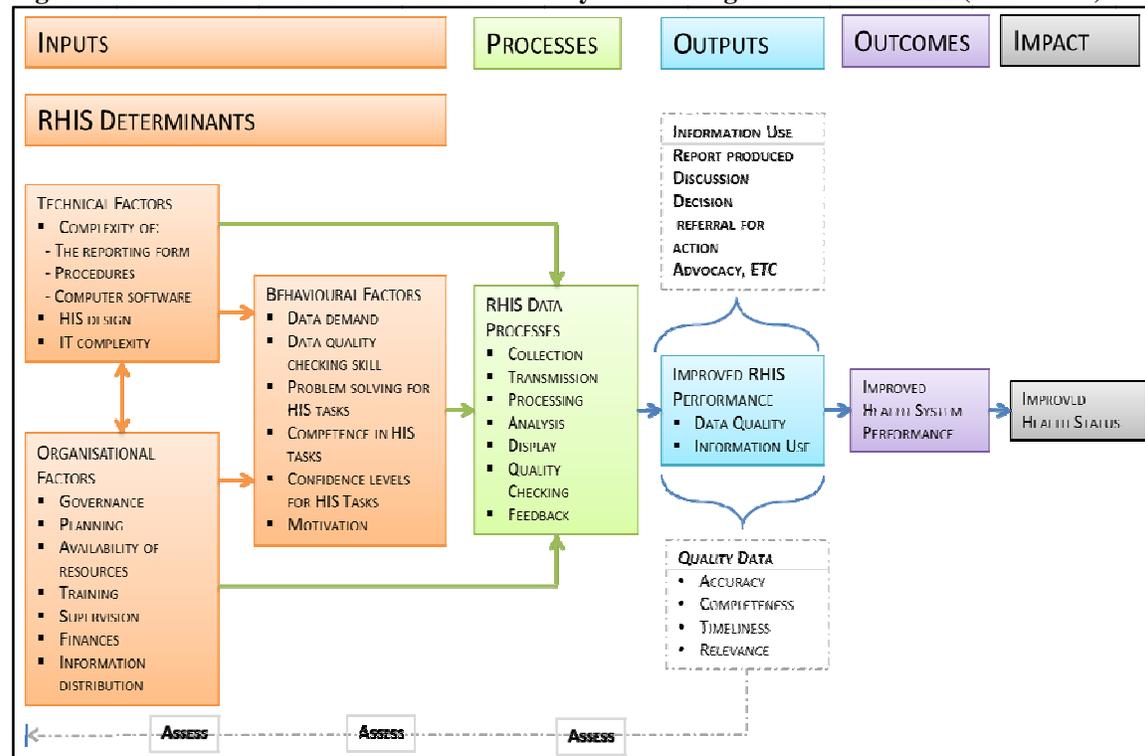
The PRISM (Performance of Routine Information System Management) Framework is one of the most recent innovations to guide the designing, strengthening and evaluating routine health information systems (RHIS) (Aqil, A., 2009). It identifies **good quality data** and **continuous information use** as the two desired outputs of a health information system (HIS) pipeline. The framework emphasises that the performance of any HIS is affected by three categories of determinants namely: organisational, technical and behavioural. These determinants have been identified as those responsible for influencing the successful execution of the HIS processes (collection, transmission, processing, analysis, display, quality checking and feedback).

The hierarchical presentation of processes in the framework is drawn from the common practice in most HIS, whereby data are **collected** routinely in the course of providing a service (through provider-patient/client interactions), and once satisfied with quality, these data are then summarised monthly/quarterly and **transmitted** to the district for computer data entry, where **processing, analysis** and **presentation** is done. During processing, analysis and presentation, data are checked for quality. It is then on this basis that feedback is provided to the source facilities.

Good quality data is one of the two outputs of HIS processes. For the HIS processes to produce quality data, the PRISM framework suggests that a proper mix of inputs (RHIS determinants) should

be attained for optimal execution of HIS processes. Good quality data therefore is influenced directly by HIS processes and indirectly by HIS determinants (Figure 1).

Figure 1: Performance of Routine Information System Management Framework (Annotated)



The Data Quality Audit (DQA) procedures and tools presented in this document are therefore meant to:

1. Validate the quality of the data,
2. Assess the processes and associated determinants that produces that data, and
3. Develop action plans to improve both.

Methodology

1. Data Quality Defined

Data quality is defined through four dimensions: relevance, completeness, timeliness and accuracy (Lippeveld et al., 2000). “Data auditing” is defined as a process of verifying the quality of reported aggregate HMIS data. This typically requires field visits to institutions that reported the data in order to check these data against client or other individual records (UNAIDS 2008).

- **Completeness** is measured at two levels: At facility level, completeness is measured by reviewing the forms to check whether all the data elements that should have been reported are reported during a reporting period. At subnational and national levels, completeness is assessed in terms of completeness of reports on data elements and reporting units.
- **Timeliness** is assessed in terms of submission of the reports by an accepted deadline at each level.
- **Accuracy** is measured by comparing data that has been reported or compiled against the primary source documents at the point of collection and triangulation of the reported data with other data sources, if available.
- **Relevance** is assessed through the usefulness of data collected against the information requirements of management functions. Since this manual focuses on routine assessment of

quality of the HIS data, this attribute is not discussed in detail as it is a system design issue. (This dimension can be reviewed in a major evaluation of the HMIS).

Some frameworks extend the space to include the following dimensions: reliability, precision, integrity and confidentiality (Measure Evaluation, 2008). Although these are defined here, they are not discussed as standard attributes of data quality because these properties border on the design of the system rather than practice. However, when conducting a full system evaluation the following dimensions may be considered:

- **Reliability** is assessed by checking whether the data generated by an information system are based on protocols and procedures that do not change according to who is using them and when or how often they are used. The data are reliable because they are measured and collected consistently.
- **Precision** means that the data have sufficient detail. For example, if an indicator requires “the number of individuals who received HIV counselling& testing and received their test results, by sex of the individual,” then the information system would lack precision if it is not designed to record the sex of the individual who received counselling and testing
- **Integrity** of data is when the system used to generate them is protected from deliberate bias or manipulation for political or personal reasons.
- **Confidentiality** means that clients are assured that their data will be maintained according to standards for data. Personal data should not be inappropriately disclosed or left unsecured.

Recognising the indisputable role that HIS processes play in realising the desired quality of data, Table 1 identifies tracers of data quality at each stage of data handling and shows which dimension of data quality is likely to be affected at each administrative level.

Table 1: Data Needs - Dimensions of Data Quality and HIS Processes

HIS Process	Data Quality Tracer	Dimension of Data Quality			Level		
		Accuracy	Completeness	Timeliness	Facility	District	Sub/National
Data Collection	1. Designated staff to collect data from clients/patients exist	✓	✓	✓	●		
	2. Staff collecting data from patients trained in HMIS	✓	✓	✓	●		
	3. Standard Operating Procedure (SOP) for data collection exist	✓	✓	✓	●	●	●
	4. Indications of use of the SOPs	✓	✓	✓	●		
	5. Correct versions of cards/forms and registers used	✓	✓		●		
	6. Appropriate timing of updating tally/activity sheets and registers	✓	✓	✓	●		
Data Processing	1. Designated staff to collate/aggregate data exist	✓	✓	✓	●		
	2. Staff responsible for data collation/aggregation trained in HMIS	✓	✓	✓	●		
	3. SOPs exist for collation/aggregation	✓	✓	✓	●	●	●
	4. Correct versions of collation and aggregation forms used	✓	✓	✓	●		
	5. Aggregation form bears details on who prepared/ approved and dates	✓	✓	✓	●		
	6. A log sheet exists to indicate when each form was entered by the district			✓		●	
Data Transmission	1. Facility In-charge/Director is aware of the data flow policy (dates).			✓	●	●	
	2. A log sheet exists to indicate when each form was sent to the district			✓	●	●	
	3. A log sheet exists to show when the dataset was sent to the next level			✓		●	●

HIS Process	Data Quality Tracer	Dimension of Data Quality			Level		
		Accuracy	Completeness	Timeliness	Facility	District	Sub/National
	4. A log sheet exists to indicate when each form/dataset was received			✓		●	●
	5. A record of staff members who receive the reports at district exists		✓	✓	●	●	
Data Quality Checking	1. Only one version of the same report(s) for the same period exist	✓	✓		●	●	
	2. Data on Health Information Aggregation (HIA) form is traceable to a tally/activity/collation sheet or register	✓	✓		●		
	3. Hard copy report at the district is the same as the one at facility	✓	✓		●	●	
	4. Data on hard copies the same as entries on the computer	✓	✓			●	●
	5. Hand-summed facility totals are the same as the totals on the database	✓				●	●
	6. Record exists to show that HMIS problems are reported to the next higher level	✓	✓		●	●	
Feedback	1. Proof of feedback from the higher level exists	✓	✓	✓	●	●	
	2. Dates of communication on feedback documented			✓	●	●	●
	3. If feedback requested a change in the data, a record of that change exists	✓	✓		●	●	

2. What Data to Collect

Using **Table 1** as a basis, two questionnaires (**Annexes 1 & 2**) have been formulated – one for the facility and the other for the district. Since the intention of this manual is to provide guidance on how each administrative level can be assessed for data quality (as opposed to assessing all the levels at once), procedures have been presented according to the two key levels: health facility and district levels.

Although the national data flow procedures include the provincial level in data handling, no alterations to the data are made at this level. It is against this background that the two data collection instruments presented in this document are meant for use at facility and district levels. This is intended to strengthen routine data quality monitoring as opposed to the traditional reliance on external evaluations.

A. Health Facility Data Quality Assessment Tool

This instrument is intended to provide a comprehensive data quality picture about a given facility – covering both the determinants and dimensions of data quality. This tool is intended for use at any level of health facilities as long as the selection of data elements for audit takes cognisance of varying bouquet of services provided by each health facility. If the data auditing team has prior¹ information on the sources of data errors, the audit can focus on only those weak aspects.

This assessment tool covers two sections: Determinants of Data Quality and Dimensions of Data Quality. A summary description of the tool can be found in **Table 2** (below). The tool itself can be found in **Annex 1: Routine Data Quality Audit - Health Facility Assessment Form**.

¹ Prior knowledge may be based on information from the previous performance assessments and technical support supervisions

B. District Data Quality Assessment Tool

Like the facility form, this instrument is intended to assess the core functions of the district medical office in data management. It covers selected determinants of quality (human and material resources); reporting timeliness (knowledge and practice); reporting completeness (availability of data and data entry coverage); and data accuracy (data entry and data consistency). For the summary description, see **Error! Reference source not found.** below. The tool itself can be found in **Annex 2: Routine Data Quality Audit - District Assessment Form.**

Table 2: Description of the data quality assessment tool - health facility²

Focus Area		Summary Description	Application frequency
Section 1: Determinants of Data Quality			
A	Availability of trained staff to collect data from patients/clients during delivery of services	This section should be administered through direct observation of the practice or by asking the facility/ward in-charge.	- Routinely twice per year - When there is a need to follow up on training or planning for refresher training.
B	Availability of reference and data collection materials	This subsection is meant to assess availability of essential (correct) materials at health facility level. Questions for this section always should be administered.	Due to high staff turnover rates, questions for this section should be asked at every opportunity during PA.
C	HMIS Feedback	A working feedback system provides a live loop – an avenue to exchanging experiences and resolving problems between each administrative layer. Questions in this section look at practice and how this may impact on data quality through data revision and record keeping.	Every Assessment
Section 2: Dimensions of Data Quality			
2.1 Report Timeliness			
A	Knowledge of the HMIS Data Handling Deadlines	These questions should be asked to the facility in-charges. The subsection measures knowledge and practice towards meeting submission deadlines.	Once per year or anytime during PA when a new in-charge is encountered.
B	Practice in meeting reporting deadlines		Every Assessment
2.2 Report Completeness			
C	Availability of completed cards, registers, tally/activity sheets and HIA forms	Questions under this section are intended to assess whether health facility has a record to show that a service was provided and documented, before reporting to the districts. They are proxy measures for record keeping and filling.	Every assessment visit
D	Data Completeness: Assess whether all required data elements have been entered on the form	This section provides a composite summary of missing data elements, in part or the entire form.	Every assessment visit
2.3 Data Accuracy			
E	Collation Accuracy: Verifying whether aggregated data on HIA1/2 match the primary data sources	This information is collected by comparing aggregated data on the reports sent to the district with the source documents. This is done backwards thus: HIA1 → Tally sheets → Registers HIA2 → Activity sheet/Registers	Every assessment visit
F	Internal data consistency: Whether expected relationships in the dataset are not violated	This section validates 2.3E in that even when aggregated data and sources match, at times the data are still not correct because the errors were introduced at data collection.	Every assessment visit

² The tool can be found in **Annex 1: Routine Data Quality Audit - Health Facility Assessment Form.**

Table 3: Description of the data quality assessment tool – District³

Focus Area		Summary Description	Application frequency
Section 1: Determinants of Data Quality			
A	A-Availability of trained staff to perform management functions	The set of questions under this section provides a profile on the value the district office has attached to HMIS processes – which if not properly handled affect quality of data.	- Routinely twice per year - When there is a need to follow up on training or planning for refresher training.
B	B-Availability of Resources: Equipment, Materials and Space	This subsection is meant to assess availability of working space, technology and materials.	Routinely, during every PA visit
Section 2: Dimensions of Data Quality			
2.1 Report Timeliness			
A	Knowledge of the HMIS Data Handling Deadlines	These questions should be asked to the district in-charges. The subsection measures knowledge and practice towards meeting submission deadlines.	Once per year or anytime during PA when a new DMO is encountered
B	Practice in meeting reporting deadlines		Every Assessment
2.2 Report Completeness			
C	Availability of completed HIA forms	Questions under this section are intended to assess whether the data reported were actually submitted to the district by their health facilities, and that a record exists. They are proxy measures for record keeping, filling and data entry completeness.	Every assessment visit
D	Data Entry Completeness: Assess whether all reported data have been entered on the computer	This section assesses whether data that was actually submitted by the facilities have been entered into the computer. To shorten the time spent at the district, the audit team should preview the data before visiting the district. SEE IMPLEMENTATION STEPS.	Every assessment visit
2.3 Data Accuracy			
E	Data Entry Accuracy: Verifying whether aggregated data on HIA1/2 match the data on computer	This information is collected by comparing aggregated data on the reports received by the district with the data on the DHIS.	Every assessment visit
F	Internal data consistency: Whether expected relationships in the dataset are not violated	These section validates 2,2C, 2.2D, 2.3E in that even when aggregated data and sources match, at times the data are still not correct because the errors were introduced at data collection or entry	Every assessment visit
3 Feedback			
Although the provincial and national levels cannot correct the data, because of higher skill concentration the two levels should provide oversight of the data from the district by ensuring that those errors that manage to slip through the districts can be quickly brought to their attention. This is important for data quality improvement and enhanced usage.			

³ The tool can be found in **Annex 2: Routine Data Quality Audit - District Assessment Form.**

Audit Outputs

The DQA process is meant to gather and document the status of selected determinants of data quality and the results on the dimensions of data quality by:

- Completing the **facility data quality assessment form** (at facility level) and the **district assessment form** at the district health office.
- **Documenting observations, additional submissions** (voluntary or probed) from staff responsible for ensuring quality of data at facility or district levels.
- Making **onsite presentations** of summary findings as a way of providing immediate feedback.
- Preparing an Audit Report that includes and documents findings as gathered by the audit team, conclusions arising from those findings and recommendations following the interpretations. Narratives in the report will be augmented by the summary statistics collected through the assessment forms, covering the following core areas:
 1. **Determinants of data quality** focusing on availability of trained HMIS staff; availability of materials, space and equipment; and adequacy of the feedback mechanism.
 2. **Availability, Completeness and Timeliness of Reports** through the computation of percentage scores on sections and direct comparisons of counts were necessary
 3. **Accuracy** of reported data through calculated ratios (reported to recounted numbers).
- Dissemination of findings and recommendations to the national, provincial, district and facilities for quality improvement follow-ups.

Ethical Considerations

The DQA process should strictly adhere to existing Zambian protocols on privacy and confidentiality of data from individual patient/client records. This DQA protocol will not be the first to expose health workers and officers from the health ministry to patient files. As such the requirement to audit the data should not supersede the demand for respecting existing procedures and protocol on data privacy and confidentiality.

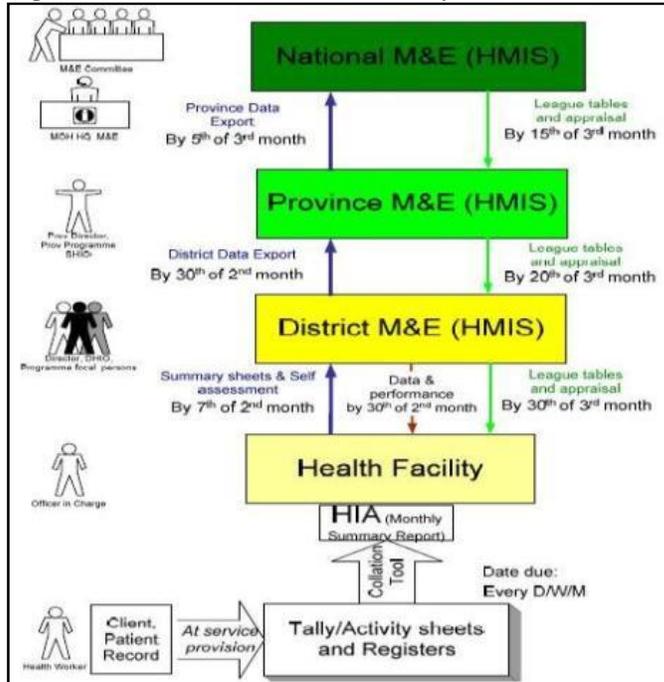
Implementation Overview

The approach presented in this document is premised on the fact that sometimes HIS have design oversights and that, even when they are properly designed, things can go wrong during data handling processes thereby affecting the quality of the intended outputs (data quality and continuous use of data for decision-making).

As shown in **Figure 2**, in the Zambia HMIS, data collection starts with recording of interactions between the provider and the client/patient. Data are recorded onto individual patient/client cards or entered into registers. Then a predefined set of key data elements are either recorded directly or transferred onto activity sheets or tally sheets and later summarised onto aggregation forms. Once the aggregation form has been completed by the facility it is sent to the district medical office for data entry into the computer. Beyond this point, there are no permissible data changes that can be done unless in consultation with the district or the source facility. It is for this reason that this DQA package focuses on routine assessment of data at facility and district levels only.

Note: This approach is based on the understanding that the health ministry or with support from partners, commission major evaluations of the data systems. Examples of such major evaluations include those that were done under the Health Metrics Network or before a major revision of the HMIS.

Figure 2: The Zambia Information Cycle



This manual recommends that two approaches be considered when planning for the audit: sequential or standalone. Each of these approaches is described below:

1. **Duo-level (Sequential):** This approach applies to instances whereby an administrative level higher than the district (e.g. provincial or national) commissions an audit throughout the country or in a given province or a district. In such a case, the audit should start with the district health office and then onto health facilities of interest. The two data collection forms will be administered appropriately.
2. **Single-level (Stand-alone):** This approach is when the district health office decides to undertake an audit of selected facilities or data elements as a local level initiative, supported by themselves or through a partner. This can either be a planned activity or an adhoc one. Adhoc audits include those activities undertaken because a problem has been identified and an audit is ordered.

Following the two approaches described above, the two data collection tools can be administered in the following way:

1. **Routine Data Quality Audit - Health Facility Assessment Form:** This tool can be used for a single-level (facility) or a duo-level (sequential) audit. In a duo-level audit, results from this tool are used in conjunction with those from the District Data Audit Tool.
2. **Routine Data Quality Audit - District Assessment Form:** This tool should be used in conjunction with the facility tool by first assessing the district and proceeding with the facilities.

The steps presented in the next sections are designed for implementation in a duo-level data audit approach. If implementing a single-level audit, Step 2 may optional depending on the nature of the problem being investigated.

Stage 1: Preparing for the Audit

Preparations are done at the level commissioning the audit (district, province/national). To ensure transparency, selecting of data elements and facilities for inclusion during the audit should be done in a team and all programme managers responsible for the programmes whose data elements are targeted for audit should be present in that meeting. The preparatory stage is made up of five compulsory steps:

1	Selecting Data Elements	One audit is rarely able to cover all the data elements from the service delivery and disease forms. Therefore, it is necessary to select data elements before the audit, while taking care to avoid biases arising from individual audit team member preferences. Guidelines have been provided on how to proceed with the selection so that each data element is given an equal chance of being included in the audit (refer to next page, “Step 1”)
2	Selecting Auditing Units and Forming Teams	The administrative level commissioning an audit should receive in advance the list of facilities and districts that are targeted by the audit. This essential step is the precursor to all other preparations (logistics, review of relevant documentation and data, etc.)
3	Review Relevant Documents	Documentation for review may include: <ul style="list-style-type: none"> • Previous audit report(s) (if any), • HMIS feedback reports/dispatch, • Most recent performance assessment/technical support report, • Annual/quarterly action plans, and • Any other relevant information. Obtaining as much detail as possible about the targeted unit in advance may reduce the amount of time spent on site.
4	Packaging Information For Onsite Audit	This step may be done concurrently with the review of documentation, depending on the diversity of skills in the audit team. Preparing data will include: <ul style="list-style-type: none"> • Packaging hard copies of the aggregation forms; • Retrieving the electronic copy of the dataset for the period and site under consideration; and • Pre-populating the following assessment forms: <i>Data Completeness, Collation Accuracy, Data Entry Accuracy and the Internal Consistency.</i>
5	Notify The Target Audit Site	Preparing for site visits includes drawing up a field schedule, forming teams and notifying the target sites.

Each of these five steps is discussed in detail below.

Step 1 – Selecting Data Elements

The audit team will use the following two Health Information Aggregation (HIA) frameworks to select data elements: “Service Delivery Sampling Frame” (HIA2), found in **Annex 4**, and “Disease Sampling Frame” (HIA1), found in **Annex 5**.

Although it is desirable to select all the data elements on both HIA1 and HIA2 for inclusion in the audit, this practice proved to be highly inefficient in the earlier attempts at conducting audits due to the large number of data elements. For this reason, this document outlines procedures for selecting a

sample of data elements that can be included in the audit for a detailed review. The selection of data elements should be done as transparently as possible to avoid any levels of biasness.

1.1 Sampling Data Elements on the Service Delivery Aggregation Form (HIA2).

The HIA2 has seven programme areas namely: Child Health and Nutrition; Reproductive Health and Family Planning; HIV/AIDS Services; General Curative Care; Medicines and Medical Supplies; Environmental Health; and Finance, supportive supervision and HMIS Quality Assurance. Using the September 2012 B ver. 2 HIA2 dataset, Table 4 summarises the number of reportable⁴ data elements within each programme area from which the sample should be drawn for each session of the audit.

Table 4: Sample Distribution Table for Data Elements on HIA2

Programme Area	Total # of Data Elements	Proportionate to the total	Target Sample CL=95; CI=10	Ms Excel Formula for selecting each subsample	# of times to refresh results [F9]
	(a)	(b)	(c)	(d)	(e)
Child Health and Nutrition	37	0.114551084	8	=RANDBETWEEN(1,7)	7
Reproductive Health- Antenatal and Postnatal Care	21	0.06501548	5	=RANDBETWEEN(1,5)	4
Reproductive Health- Obstetrics	29	0.089783282	7	=RANDBETWEEN(1,7)	6
Reproductive Health- Family Planning	13	0.040247678	3	=RANDBETWEEN(1,3)	2
HIV Testing and Counselling	18	0.055727554	4	=RANDBETWEEN(1,4)	3
PMTCT	35	0.108359133	8	=RANDBETWEEN(1,8)	7
HIV Care and Treatment	52	0.160990712	12	=RANDBETWEEN(1,12)	11
Voluntary Medical Male Circumcision	11	0.034055728	3	=RANDBETWEEN(1,3)	2
Curative Care-OPD	31	0.095975232	7	=RANDBETWEEN(1,7)	6
Cancer Screening and Diagnosis	6	0.018575851	1	=RANDBETWEEN(1,1)	0
Curative Care- IPD	17	0.052631579	4	=RANDBETWEEN(1,4)	3
Medicines and Supplies	18	0.055727554	4	=RANDBETWEEN(1,4)	3
Environment Health	30	0.092879257	7	=RANDBETWEEN(1,7)	6
Finance, supportive supervision and HMIS QA	5	0.015479876	1	=RANDBETWEEN(1,1)	0
Total	323	1	74		

CL=Confidence Level; CI=Confidence Interval

As shown in Table 4, there 323 reportable data elements for the seven selected programmes. The proportion to the total contributed by each programme is shown in column (b). The calculated minimum target sample from 323 at 95 per cent confidence level and 10 per cent margin of error is 73 data elements. This sample is distributed across the six programmes proportionate to size as shown in column (c). Columns (d) and (e) are meant to assist in picking the actual data elements from Annex 4 (see explanation below). To do so, *Child Health and Nutrition (CHN)* has been used as an example shown below:

⁴ These are data elements collected directly from source documents and not derived from other data summaries on the HIA2 – calculated data elements are therefore excluded.

1.2 Open a blank Excel Spread sheet.

- Anywhere on the worksheet enter the formula: =RANDBETWEEN (1, 37). Where 1 stands for the bottom number and 37 for the upper number from which to pick a number randomly on the Child Health and Nutrition (CHN) data elements list in Annex 4.
- Copy or drag the formula to an extra eight cells to give you nine random numbers.

Immediately copy the numbers that appear on your screen the first time you copy the formula. Delaying doing so may refresh the list. Your list may look like the sample in **Table 5**.

Table 5: Example of Sampled Numbers - Child Health and Nutrition

Programme Area	Sampled Numbers
Child Health and Nutrition	24, 15, 4, 37, 30, 1, 28, 20, 26
Reproductive Health- Antenatal & Postnatal Care	
Reproductive Health- Obstetrics	
Reproductive Health-Family Planning	
HIV Testing and Counselling	
PMTCT	
HIV Care and Treatment	
Voluntary Medical Male Circumcision	
Curative Care-OPD	
Cancer Screening and Diagnosis	
Curative Care- IPD	
Medicines and Supplies	
Environment Health	
Finances, Supportive Supervision and HMIS quality assurance	

1.3 Use the sampling frame in Annex 4 to identify which data elements represent the sampled numbers in Table 5 from the CHN list.

Proceed and produce a table as shown in the example in Table 6 (below).

Table 6: Example - Matching Sampled Numbers with Data Elements

Programme Area	Sampled Numbers	Corresponding Data Elements
Child Health and Nutrition	24, 15, 4, 37, 30, 1, 28, 20, 26	CHN3-025, CHN2-060, CHN1-020, CHN3-090, CHN3-055, CHN1-005, CHN3-045, CHN3-005, CHN3-035
Reproductive Health- Antenatal and Postnatal Care		
Reproductive Health- Obstetrics		
Reproductive Health-Family Planning		
HIV Testing and Counselling		
PMTCT		
HIV Care and Treatment		
Voluntary Medical Male Circumcision		
Curative Care-OPD		
Cancer Screening and Diagnosis		

Programme Area	Sampled Numbers	Corresponding Data Elements
Curative Care- IPD		
Medicines and Supplies		
Environment Health		
Finances, Supportive Supervision and HMIS quality assurance		

1.4 Repeat 1 and 2 above for each programme to select the desired sample size under each area as stipulated in column (d) of Table 4.

1.5 Sampling Data Elements on the Disease Aggregation Form (HIA1)

The 2013 edition of the Disease Aggregation Form (HIA1) categorises diagnosis/conditions as follows: Notifiable diseases; Selected diseases; Other diseases; Obstetric complications; and Sexually Transmitted Diseases, Screening and Neonatal (**Annex 5**). Obstetric complications, screening and neonatal have been clustered into one category for purposes of generating a sampling list.

Table 7: Sample Distribution Table for Data Elements on HIA1

Disease/Diagnosis Category	# of Data Elements	Proportionate to the total	Target Sample CL=95;CI=10	Ms Excel Formula for selecting each subsample	# of times to refresh results [F9]
	(a)	(b)	(c)	(d)	(e)
Notifiable Diseases	14	0.1772152	8	=RANDBETWEEN(1,14)	13
Selected Diseases	19	0.2405063	11	=RANDBETWEEN(1,19)	18
Other Diseases	32	0.4050633	18	=RANDBETWEEN(1,32)	31
Obstetric Complications	6	0.0759494	3	=RANDBETWEEN(1,6)	5
Sexually Transmitted Diseases	8	0.1012658	4	=RANDBETWEEN(1,8)	7
Total	79	1	44		

Note: Replicate instructions 1 to 3 under-sampling data elements on HIA2(Annex 4) and match the data elements with the sampling list in HIA1 (Annex 5).

Step 2 – Selecting Data Audit Units and Forming Teams

2.1 Considerations in choosing sites

Although all facilities are eligible for data audit, it is neither possible for the province to cover all the districts nor for the district to cover all facilities in one round of an audit. The level commissioning the audit should select sites to include in each round of the audit.

Note: By the end of the year, each district and each facility should have undergone at least one data audit.

In choosing health facilities to include in the audit, consider the following aspects:

1. Conduct a preliminary assessment of reporting completeness and timeliness for all the sites within the period under review. The auditing team may consider prioritising those sites that appear to be struggling so that a detailed review can be done through data auditing with the view of making improvements.
2. Review the previous audits conducted and the data improvement activity plans arising from those audits. The level commissioning the audit may choose to make follow ups on those sites that should have implemented remedial measures, so as to assess the progress.

Note: Although prior knowledge of the quality of data can be a factor in choosing a site for inclusion in the audit; it should not be the only reason. The audit team may explore other factors to select sites.

2.2 What to do if a site does not provide some services

If some of the sites selected do not provide services for the data elements selected in Step 1, you should create a special list for such facilities. For each facility that does not provide a service for the data element selected in Step 1:

1. List down all the data elements in question.
2. Replace the data elements by repeating the random selection.
3. Note down each number that appears for the first time and matches a service provided by this facility.

Note: Since this is sampling with replacement, if a number that already has been selected or rejected later reappears, then skip all such numbers and repeat the selection.

2.3 Who Should Be on The Auditing Team

Before an audit can take place, the level commissioning the audit should ensure the following minimum requirements for team composition:

- **Programme Evaluation** (e.g., District Medical Officers or Planners);
- **Programme Management** (officers vested with protocols/guidelines for targeted services)
- **Data Management** (e.g., District/Senior Health Information Officers). This is the technical person who should facilitate the Data Quality Audit.

Step 3 – Review Relevant Documentation

Among the documents that should be reviewed may include previous audit report (if any); HMIS feedback reports/dispatch; most recent performance assessment/technical support report; annual/quarterly action plans; and any relevant information hosted by individual programme managers that may not be in the listed documents. Obtaining as much detail as possible about the targeted unit may reduce the amount of time spent on site.

3.1 Previous audit reports

If the target site has been audited before, it is advised that all outputs from the previous audit be reviewed. The review should focus on those areas that were identified as weak points and on which feedback was provided or remedial measures were implemented. It may be necessary to communicate

directly with the target site on those issues that were raised in previous audit if the audit team does not have any fresh information about what followed the assessment.

3.2 Feedback reports/dispatches

If systems are functioning well, it is expected that before an audit is commissioned, all the data at each transmission level will have been processed for quality before transmission to the next administrative level. If there were any issues with the data, preliminary observations would have been made and communicated to the originating unit. Reviewing this documentation will alert the audit team on any pending issues on either ends of the correspondence.

3.3 Most recent PA/TSS report

Performance Assessment (PA) and Technical Support Supervisions (TSS) are two supervisory systems that are institutionalised in the health sector at each administrative level. Although these activities are general in nature, their reports can bring out issues that may have direct impact on the quality of data. Such issues may include availability of staff, adequacy of infrastructure and issues with equipment, among others. Prior knowledge of this information will prepare the audit team on how to proceed with the audit when onsite.

3.4 Annual/Revised Action Plan

The preparation of these guidelines is a step towards discouraging adhoc data audits that have been taking place over years. Results from past audits have not been translated into action in most instances. To domesticate recommendations arising from data audits, each level will be expected to plan and budget for data audits with a focus on remedying areas already identified through previous supervisory activities. Data Quality Audit should be taken as a routine exercise and therefore should be included in the Action Plan.

3.5 Additional Information from key informants

The audit team should also seek out other reports produced by programme managers when they visit or meet with districts or facilities. These trip/event reports contain valuable information that would be useful to the audit.

Step 4 – Prepare Data for the Audit

Once the data elements for the audit have been selected, the audit team should now prepare the data for audit. This MUST be done before the actual field work commences. Depending on which level is targeted for the audit, items to prepare beforehand may vary.

4.1 Auditing the Facility Level

For each of the facilities to be audited, the District Medical Office should have the following information at hand before travelling to the field (**Table 8**). This will shorten the time spent with each facility.

Table 8: Facility Audit - Things to Prepare

#	What to prepare
1	✓ Copies of the most updated version of the Procedures and Indicators Manuals.
2	✓ A record of when the facility submitted its reports during the past 3 months
3	✓ Unused printed (single leafs) or soft copies of registers, activity sheets, tally sheets and aggregation forms. These copies should be of the same version as the ones facilities are expected to have been using during the period in reference.
4	✓ Completed hardcopies of HIA1/2 submitted by the facility covering the last 12 months
5	✓ Printed copy of data validation rules
6	✓ Copies of any HMIS feedback between the district office and the facility
7	✓ Copy of updated Action Plan

4.2 Auditing the District Level

If the district health office is targeted for the audit, the auditors should prepare the items in Table before visiting the district.

Table 9: District Audit - Things to Prepare

	What to prepare
1	✓ Copies of the most updated version of the Procedures and Indicators Manuals.
2	✓ DQA Guidelines
3	✓ Approved District Action Plan for the current period
4	✓ Copies of approved versions of the HIA1/2 for the period under review
5	✓ Printed copy of data validation rules
6	✓ Previous two Performance Assessment Reports
7	✓ Copy of the database submitted by the district
8	✓ A copy of correspondence to indicate data has been submitted (e.g. email)
9	✓ Copies of any HMIS feedback between the district office and the facility

Step 5 – Prepare for Site Visits

It is recommended that target health units for the audit are informed in advanced about the planned visit to the facility. However, if not well handled, this advance notice can threaten the overall outcome of the audit. Since the audit is meant to identify laxity so as to improve practice, target units should not be prepared to the point that they mask their daily practice thereby concealing their weaknesses. Sites targeted for the audit should be informed about the upcoming data audit at least **a month** before visiting the site. It is therefore recommended that the notice to the sites focuses on the following information:

5.1 Information for the District Medical Office

- The District Medical Officer should be present and guarantee accesses to his/her office.
- The officer in-charge of the HMIS and the DHIS should be present. Access to the computer hosting the DHIS database must be assured.
- Programme officers to be available for the audit.
- The DMO should make available all HMIS forms submitted by health facilities.
- Date and time the audit will take place.
- Anticipated duration of the audit.

5.2 Information for the Health Facility

- The in-charge of the facility should be present or delegate to relevant staff available. For the hospitals, the Director and the departmental or ward in-charges should equally be available for the audit.
- Representation from staff who complete registers, activity sheets, tally sheets.
- Availability of staff that are responsible for preparing the HIA1/2
- Guaranteed access to patients cards, registers, activity sheets, tally sheets and where available the SmartCare database.
- Date and time the audit will take place.
- Anticipated duration of the audit.

Stage 2: Fieldwork - District Health Office

Unlike at a facility, once notice has been sent to the District Medical Office and the proposed schedule is agreed, the audit team is likely to find the district team ready. Below is the proposed sequence of events:

Step 6 – Assess Data Management Structures and Systems

- 1- Meet with the District Medical Officer and explain what is expected and confirm the availability of key staff, materials and equipment.
- 2- Request for a meeting place (such as a conference room) where the audit team and the district team can hold the meeting. The audit team should proceed to administer the District Assessment Form(**Annex 2**) to the host in this order:
 - a. Availability of trained staff to perform management functions (1A)
 - b. Availability of Resources: Equipment, Materials and Space (1B)
 - c. HMIS Feedback (1C)
 - d. Knowledge of the HMIS Data Handling Deadlines (2.1A)
 - e. Practice in meeting reporting deadlines (2.1B)
 - f. Availability of completed HIA forms (2.2C)

Note: It is important that all programme managers understand the implications of the questions.

Step 7 – Trace and Verify Data with Facility Reports

Tracing and verification requires more time and concentration. These aspects of the data audit are covered by the following sections on the district data audit tool:

- Data Entry Completeness: Assess whether all reported data have been entered on the computer (2.2D).
- Data Entry Accuracy: Verifying whether aggregated data on HIA1/2 match the data on computer (2.3E).
- Internal data consistency: Whether expected relationships in the dataset are not violated (2.3F).

Note: It is recommended that the Team Lead allocates two persons to complete the three sections. Assessing these sections should be done in collaboration with a selected team from the district office.

After completing sections 2.2D, 2.3E and 2.3F, consolidate your finding and transfer the responses to the three corresponding Excel Sheets provided with the tool. Go over the preliminary findings with the district team, using Table 12: District Performance Assessment Guide (Step 10) as a guide for summarising your findings (also refer to Annex 7).

Stage 3: Fieldwork - Health Facility

Once at the facility, the Team Lead should explain the objectives of the audit and how the exercise will benefit the facility, the patients and clients. It is a common occurrence that even if prior notice is given, health workers are always busy when visited. Do not disrupt normal patient care. If the registers and cards included in the review are currently in use, exclude those records until they are free - mostly in the afternoon. Although the order of tasks may vary from one facility to the other, below is the proposed sequence:

Step 8 – Assess Data Collection, Storage and Reporting Systems

- 1- Meet with the facility in-charge and explain the mission. Confirm whether the notice sent about this visit was received and if all the things requested have been prepared in readiness for the audit.
- 2- If there is shortage of staff and the in-charge cannot sit through the entire audit process, it is proposed that the Health Facility Assessment Form (Annex 1) be administered in this order of sections:
 - a. Availability of trained staff to collect data from patients/clients during delivery of services (1A).
 - b. Availability of reference and training materials (1B).
 - c. HMIS Feedback (2C).
 - d. Knowledge of the HMIS Data Handling Deadlines (2.1A).
 - e. Practice in meeting reporting deadlines (2.1B).
 - f. Availability of completed cards, registers, tally/activity sheets and HIA forms (2.2C).

Step 9 – Trace and Verify Data with Primary Data Sources

- 1- Once Step 8 has been completed, the audit team can request for space from which to go over sections 2.2D, 2.3E and 2.3D. These three sections demand more time and attentiveness.
Note: To reduce on time, while sitting together, the audit team may decide to tackle the three sections simultaneously. Note down any observation that may require clarification with the facility in-charge.
- 2- After completing sections 2.2D, 2.3E and 2.3D:
 - a. Consolidate and transfer responses onto the Excel Sheets (if computer is available),
 - b. Complete **Table 11: Facility Performance Assessment Guide** (also refer to **Annex 7**),
 - c. Go over the preliminary findings with the in-charge and his/her staff.

Stage 4: Finalise the Audit

Step 10 – Preliminary Data Analysis and Presentation (Onsite)

The two data instruments presented in Annexes 1 and 2 combine data collection and processing content onto the same form. Each instrument has 2 sections, and under each section there are sub-sections. Immediately after completing that section or subsection, there are summary statistics that should be completed, which are found at the end of a subsection or the main section. Below is the sample description of each of these summaries, using Section 1A from the Facility Assessment Tool as an example:

Table 10: Example on how to complete the questionnaires and score each section

A-Availability of trained staff to collect data from patients/clients during delivery of services			
Read out each question carefully; depending on the response, make a circle around either 1 or 0		RESPONSE	
		Yes	No
101	Service Providers are responsible for opening and updating patient cards/files?	1	0
102	Service Providers are responsible for completing activity/tally sheets?	1	0
103	Clerks (if available) fill up registers/sheets from patient files at end of the day	1	0
104	Have all the clinicians been trained in HMIS data collection procedures?	1	0
105	Have all the staff members received training in the last 2 years	1	0
106	Did all the training session last up to five days?	1	0
Sum of all circled responses [A]= 4		Total Score Max=(1 x 6) [B]= 6	Sect1a=[A/Bx100] =4/6 X 100 =66.7%

- **Sum of All Circled Responses:** This is the number of circles for the sub/section. Add the codes for the circled responses. From the example in **Table 10**, this would be: 1+0+1+1+1+0 = 4.
- **Total Score:** Provides the denominator for calculating the score for the section. Count and sum the entries of all questions that have been responded to. Some questions may not apply to some health units (**for example question # 103**). In situations such as this, there will be no circle on either of the two responses and consequently, the entry will be omitted from the Total Score. “Max” is just a reminder that the “Total Score” cannot be larger than a maximum possible score for the section.
- **Sect1a=[A/B x 100]:** Is the percentage scored out of all the responses that apply.

Note: The letters in the brackets []: A, B and C, are meant to uniquely identify each answer and vary from section to section.

As discussed in Stages 2 and 3, at the end of data collection the audit team should present summary findings from the audit to the host unit, bearing in mind that detailed analysis will follow later with an assessment report. Preparing of summary findings can be done in two ways:

Manual – At the end of the interview, calculate summaries for each sub/section, copy, the results to either **Table 11** or **Table 12** (also refer to Annex 6) depending on whether it is a health facility or the district office that is being assessed. Discuss the performance of this facility with the facility staff, bearing in mind that these are preliminary results.

Electronically – If the assessment team has access to a computer, summary results in Tables 11 and 12 can be automatically computed using an automated Excel Spread sheet that has been preformatted and released with these guidelines. Once all the relevant questions have been answered and entered onto the spread sheet, data similar to that requested through Tables 11 and 12, respectively, will be automatically presented in MS Excel Chart format. These charts are on the second worksheet labelled “charts”. Copy each chart to either a word processor or presentation software.

Regardless of whether manual or electronic processing is done, when presenting the findings, these can be phrased in terms of questions as shown in Tables 11 and 12 below. Since national targets have not yet been formulated, each district should set annual targets against which their sites should be assessed

1. Health Facility

Table 11: Facility Performance Assessment Guide

Statistic Label	Guiding Questions	Scored	Targeted	Intervention Needed? (Yes/No)
Sect1a	Are members of staff adequately trained to handle HMIS processes?	_____	_____	
Sect1b	Are reference and data collection materials available?	_____	_____	
Sect3	Is the facility managing feedback properly	_____	_____	
Sect2b	Are the basic data collection procedures (e.g. reporting timeliness) being adhered to, by referring to the standard documentation	_____	_____	
Sect2c	Do the registers, tally/activity sheet have all the data elements needed for reporting?	_____	_____	
Sect2d Sect2e Sect2f	Are the data across the data tools consistent from one step of data collection to the next - if not so, at what stage are the errors being introduced?	_____	_____	
112 & 113	Does this facility have correct quantities of stationery	_____	_____	
111	Is this facility using correct versions of the HMIS stationery?	_____	_____	
Overall	Which components of the system require more attention?	Use the spider chart		

2. District Health Office

Table 12: District Performance Assessment Guide

Statistic Label	Guiding Questions	Scored	Targeted	Intervention Needed? (Yes/No)
Sect1a	Is the district well-staffed to manage HMIS processes?	_____	_____	
Sect1b	Is the equipment, materials and space adequate?	_____	_____	
Sect21Total	Is the district management aware of reporting requirement?	_____	_____	
Sect2c	Is the storage and filing of completed facility forms adequate?	_____	_____	
Sect2d	Is the district up-to-date with entering data already submitted by health facilities?	_____	_____	
Sect2e	Is the district able to ensure that the data entered on the computer is a true reflection of what the health facility submitted?	_____	_____	
Sect2f	Does the district team demonstrate that they review the data from facilities before and after data entry	_____	_____	
Sect 3	Is the facility managing feedback properly	_____	_____	
Overall	Which components of the system require more attention?	Use the spider chart		

Note: Summaries generated through this process, will provide a basis for the main report. This table, together with the written narrative, are the two main products from this audit. Among other things, the narrative will discuss availability of stationery, human resources availability and skills, and possible recommendations arising from discussions with the facility staff(see Data Quality Improvement Plan, Step 13).

Step 11 – Preparation of the Audit Report

Within one to two weeks of completing the audit in the last facility, the Audit Team should have produced the first draft Audit Report with all findings, conclusions and recommendations for improvements. The report should follow the proposed outline below:

I Executive Summary

II Introduction and Background

- Purpose of the DQA
- Background on related HMIS efforts
- Data Elements and Reporting Period – Rationale for selection
- Audit Sites – Rationale for selection
- Description of the data-collection and reporting system (related to the data elements audited)

III Assessment of the Determinant of Data Quality

- Description of the assessment steps for determinants of data quality
- Performance Table and Charts (from Excel Sheets)
- Discussion of findings
- Overall strengths and weaknesses of functional areas

IV Assessment of Data Quality

- Description of the assessment steps for quality of data.
- Reporting Timeliness (*sect2a, sect2b and sect21Total*)
- Reporting Completeness (*sect2c, sect2d and sect22Total*)
- Data Accuracy (*sect2e, sect2f and sect23Total*)

V Conclusion and Recommendations

Note: The report can include graphs (see **Annex 5** for examples).

Step 12 – Discuss Report and Formulate Recommendations

For each question requiring investigation, describe the root causes of the problem, the action points, and intermediate target for improvement using the template in **Table 13** as an example. Use one row for each question. You may need to use more than one sheet of paper where necessary.

Table 13: Problem Analysis Matrix

Question investigated	Root causes	Action points	Intermediate target

Step 13 – Develop a Data Quality Improvement Plan

Table 13 will provide a guide on what needs to be done about an identified problem. However, not all problems can be fixed at the same time. Identified problems may fall into the following possible categories:

- **Only local level interventions required:** Some problems identified can easily be fixed without the involvement of any higher administrative levels. Examples may include streamlining the filing system, restocking facilities with right versions/quantities of materials, withdrawing old versions of tools from sites, etc. Some solutions may require short implementation time-spans while other may require more time and planning. All solution that demands time to implement should be included in either the **district annual plan** or the revised **quarterly plans**.
- **Higher level interventions required:** Other problems may not be resolved by the local level alone. For example, shortages of stationery require the intervention of the central administrative level. When such problems are identified, the normal channels of notifying the higher levels should be used. If the problem requires technical input other than funds, this should be reflected in the plans using existing planning procedures.

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Annex 1: Facility Assessment Tool

Routine Data Quality Audit Health Facility Assessment Form (HFA)

District:		Facility:		Facility Type:	
Date:		Assessor:			

Take note: After the completion of the soft copy of the HFA, graphs can be generated (as shown in Annex 5.)

Section 1: Determinants of Data Quality

A-Availability of trained staff to collect data from patients/clients during delivery of services					
Depending on the response, enter 1 if yes, 0 if no and "-" if not applying				Response	
101	Are service providers the only ones responsible for recording interactions on patient cards/files?			1	0
102	Are service providers the ones responsible for completing activity/tally sheets?			1	0
103	Clerks (if available) always fill up or update registers/sheets upon provision of a service by providers			1	0
Score 1 if all available staff have been trained else score 0			Exist	Trained	
104	How many health workers have been trained in HMIS data collection?			1	0
105	How many members of staff received HMIS training/orientation in the last 1 year?			1	0
106	How many days was longest training/orientation? SCORE "0" if < 3 days			1	0
Sum of all circled responses [A] =			Total score (Max=1 x 6)[B] =	Sect1a=[A/B x 100]=	

B-Availability of reference and data collection materials						
107	Do you have a document that explains how to use the HMIS forms that are currently in use?			1	0	
108	What are the names of these documents?			1	0	
	a) HMIS Indicators Manual			1	0	
	b) HMIS Procedures Manual			1	0	
109	Ask to see the two documents. Were both documents provided easily without a search?			1	0	
110	Compare the year and month each of these manuals were released against the most up-to-date version. Are these the most recent versions?		Procedure Manual	1	0	
			Indicators Manual	1	0	
111	Ask for copies of registers and activity sheets for the data elements covering period under review". "Are all the forms being used the correct versions? [To score "1", all the tools in the set must be up-to-date. E.g., all registers for reproductive health must be up-to date].	Intervention Area		Number		
		a) Registers/Cards/any data source	Checked	Correct		
		Child Health & Nutrition			1	0
		Reproductive Health (ANC &PNC)			1	0
		Reproductive Health-FP & Obstetrics			1	0
		HIV Prevention, Treatment& Care			1	0
		PMTCT			1	0
		Voluntary Medical Male Circumcision			1	0
		Curative: Outpatient			1	0
		Medicines and Supplies			1	0
Environment Health			1	0		
Curative : Inpatient			1	0		

B-Availability of reference and data collection materials						
		b) Activity /Tally Sheets	Checked	Correct		
		Child Health and Nutrition			1	0
		Reproductive Health (ANC & PNC)			1	0
		Reproductive Health (FP & obstetrics)			1	0
		HIV Prevention, Treatment &Care			1	0
		PMTCT			1	0
		Voluntary Medical Male Circumcision			1	0
		Environment Health			1	0
		Medicines and Supplies			1	0
		Curative: Outpatient			1	0
		Curative: Inpatient			1	0
112	Have you run out of HMIS stationery at any point in the past six months?				1	0
113	Do you have enough stock to last you the next six months				1	0
114	Are all the HIA1/2 Forms under review bearing the name of who prepared the report				1	0
115	Are all the HIA1/2 Forms under review bearing the name of who verified/approved				1	0
Sum of all circled responses [C] =				Total Score(Max=1 x 32)[D] =		Sect1b=[C/D x 100]=

C-HMIS Feedback						
THIS SECTION SHOULD NOT BE ADMINISTERED BY THE DHIO						
The questions in this section are meant to assess the experience and practice concerning feedback on HMIS reports						
116	In the last three months, have you received feedback on the data after submitting reports to the district?				1	0
117	ASK FOR THE MOST RECENT COPY. Did the facility provide the report without searching?				1	0
118	Is the feedback report kept in a dedicated folder/box file or filing cabinet?				1	0
119	When feedback from the district requests to make changes to the data, what do you do?	a) Fills a new HIA (DESTROYS THE OLD COPY)		1	0	
		b) Fills a new HIA (KEEPS THE OLD COPY)		1	0	
		c) Fills a new HIA (CORRECTIONS ONLY)		1	0	
		d) Makes changes on the same copy		1	0	
120	How do you communicate technical challenges to the district for support?	a) Written submission (SAMPLE EXISTS)		1	0	
		b) Written submission (NO SAMPLE EXISTS)		1	0	
		c) Verbally (SOURCE DOCUMENT EXISTS)		1	0	
		d) Verbally (NO SOURCE DOCUMENT EXISTS)		1	0	
Sum of Entries [E]				Total score(Max=1 X 11)[F]=		Sect1c=[E/F] x 100 =

Section 2: Data Quality Assessment

2.1 Reporting Timeliness

A-Knowledge of the HMIS Data Handling Deadlines [Ask these questions to the In-charge]					
DO NOT PROMPT: If answer is correct make a circle around "1", otherwise circle on "0"				RESPONSE	
201	After the month ends when should all the health centres send their reports to the district? (Answer = 7th day of the month has ended) SCORE 1 if response is correct)	1	0		
202	After the month has ended when should you receive feedback from the district? (Answer = Before the end of the second month) SCORE 1 if response is correct)	1	0		
203	When should the district send datasets to the province? (Answer = By the end of the second month) SCORE 1 if response is correct)	1	0		
204	When should the province submit the dataset to the national level? (Answer = By the fifth of the 3rd month) SCORE 1 if response is correct)	1	0		
Sum of all circled responses [G] =		Total Score(Max=1 x 4)[H] =		Sect2a=[G/H x 100]=	

B-Practice in meeting reporting deadlines					
205a	Upon submission of monthly HMIS reports, health centres should have a record to show a form was received by the District Medical Office. Please ask to be shown proof that reports for the last three months (starting with most recent) were received by the district. If proof is provided, circle "1" otherwise circle on "0".	Month 1	1	0	
		Month 2	1	0	
		Month 3	1	0	
205b	Facilities should keep a record of when reports were submitted to the DMO. Verify if reports for the most recent months were submitted on time. If submitted on time, circle "1" otherwise circle on "0".	Month 1	1	0	
		Month 2	1	0	
		Month 3	1	0	
Sum of all circled responses [I] =		Total Score(Max=1 x 6)[J] =		Sect2b=[I/J x 100]=	

2.2. Report Completeness

C-Availability of completed cards, registers, tally/activity sheets and HIA forms						
				RESPONSE		
206	Ask for filled copies of registers and activity sheets for the past six months [inclusive of the period under review] Are all the registers and activity sheets for the period available? [To score "1", all the tools in the set must be up-to-date. E.g., all registers for reproductive health must be up-to date].	Intervention Area	Number			
		a) Registers	Expected	Availed	1	0
		Child Health and Nutrition			1	0
		Reproductive Health- ANC and PNC			1	0
		Reproductive Health- Obstetrics			1	0
		Reproductive Health-Family Planning			1	0
		HIV Testing and Counselling			1	0
		PMTCT			1	0
		HIV Care and Treatment			1	0
		Voluntary Medical Male Circumcision			1	0
		Curative Care-OPD			1	0
		Medicines and Supplies			1	0
		Environment Health			1	0
		Finances ,Supportive Supervision and HMIS quality assurance			1	0
		Curative: Inpatient			1	0
b) Activity /Tally Sheets	Expected	Availed				

C-Availability of completed cards, registers, tally/activity sheets and HIA forms				
		Child Health and Nutrition		1 0
		Reproductive Health- Antenatal and Postnatal Care		1 0
		Reproductive Health- Obstetrics		1 0
		Reproductive Health-Family Planning		1 0
		HIV Testing and Counselling		1 0
		PMTCT		1 0
		HIV Care and Treatment		1 0
		Voluntary Medical Male Circumcision		1 0
		Curative Care- Outpatient		1 0
		Medicines and Supplies		1 0
		Environment Health		1 0
		Finances ,Supportive Supervision and HMIS quality assurance		1 0
		Curative: Inpatient		1 0
207	In the process of verifying the availability of data forms, please score "0"if you experienced any of the following, else score "1"	Blank columns in registers/activity sheets		1 0
		Missing pages/sheets for a month		1 0
		Data for the whole month is missing		1 0
		The whole register is missing		1 0
ASK FOR A BOX FILE OR THE BATCH WHERE HIA FORMS FOR THE PAST 12 MONTHS HAVE BEEN KEPT				
208	Please record "0" if you HAVE FOUND multiple copies of HIA forms for the same month, else "1"			1 0
209	Count the months for which either the HIA1 or HIA2 are available. For each month the form is available, score "1" then sum the scores for the 12 months for each form.	# of months form is available		
		HIA 1 (0-12)	HIA 2 (0-12)	
Sum of ANSWERS [K] =		Total score Max=(1 x 13)+(12 x 2) [L] =	Sect2c=[K/L x 100] =	

D-Data Completeness: Assess whether all required data elements have been entered on the form				
210	USE THE MOST RECENT HIA1 AND HIA2 See section on "Selecting Data Elements" to understand the numbers in brackets For each data element selected, score "1"if the respective cell on the form has a value recorded. Sum all the "1"s for each intervention area.	Intervention Area	# of data elements filled	
			HIA 1	HIA 2
		Child Health and Nutrition		
		Reproductive Health- Antenatal and Postnatal Care		
		Reproductive Health- Obstetrics		
		Reproductive Health-Family Planning		
		HIV Testing and Counselling		
		PMTCT		
		HIV Care and Treatment		

D-Data Completeness: Assess whether all required data elements have been entered on the form				
		Voluntary Medical Male Circumcision		
		Curative Care-OPD		
		Medicines and Supplies		
		Environment Health		
		Finances ,Supportive Supervision and HMIS quality assurance		
		Diagnoses and Deaths (0-44)		
Sum of Entries [M] =		Total score Max=(106)[N]=	Sect2d=[M/N] x 100 =	

E-Collation Accuracy: Verifying whether aggregated data on HIA1/2 match the primary data source					
	USE THE MOST RECENT HIA1 AND HIA2			# of matching data elements	
		Intervention Area	HIA 1	HIA 2	
		Child Health and Nutrition			
		Reproductive Health- Antenatal and Postnatal Care			
		Reproductive Health- Obstetrics			
		Reproductive Health-Family Planning			
		HIV Testing and Counselling			
		PMTCT			
		HIV Care and Treatment			
		Voluntary Medical Male Circumcision			
		Curative Care-OPD			
		Medicines and Supplies			
		Environment Health			
		Finances ,Supportive Supervision and HMIS quality assurance			
		Diagnoses and Deaths (0-44)			
211	See section on "Selecting Data Elements" to understand the numbers in brackets For each data element selected, score "1" if the respective cell on the form matches the entry on the intermediary summary form (Register, Activity/Tally Sheets).				
Sum of Entries [O] =		Total score Max=(298)[P]=	Sect2e=[O/P] x 100 =		

F-Internal Data Consistency: Whether expected relationships in the dataset are not violated					
	DON'T USE DATA FROM THE DHIS DATABASE TO ANSWER THIS QUESTION. USE HARD COPIES			# of rules passed	
		Intervention Area	HIA 1	HIA 2	
		Child Health and Nutrition			
		Reproductive Health- Antenatal and Postnatal Care			
		Reproductive Health- Obstetrics			
		Reproductive Health-Family Planning			
		HIV Testing and Counselling			
212	For the list of Validation Rules use Annex XX, Under each intervention area, randomly select five (5) validation rules. Validate the most recent reports on the selected rules, score "1" if the rule is NOT violated. Sum all the "1"s for each intervention area				

F-Internal Data Consistency: Whether expected relationships in the dataset are not violated				
			PMTCT	
			HIV Care and Treatment	
			Voluntary Medical Male Circumcision	
			Curative Care-OPD	
			Medicines and Supplies	
			Environment Health	
			Finances, Supportive Supervision and HMIS Quality Assurance	
			Diagnoses and Deaths (0-44)	
Sum of Entries [Q] =		Total score Max=(5x5)[R]=		Sect2f=[Q/R] x 100 =

Facility HMIS Data Quality Audit
Internal Consistence Assessment Form

District Name: Facility Name:Reviewer:

Period: Start Month to End Month Year:

Once you have selected the validation rules for each intervention area, review the selected data elements from the HIA1/2 for the month(s) being audited. If a data element violates a rule, recode 0, otherwise enter 1.
 NOTE: Use a more sheets if reviewing many elements or months.

#	Intervention Area	Selected Validation Rule	Basic Data Element ID	Has the rule been passed? Yes=1; No=0
1	Child Health and Nutrition			
2	Child Health and Nutrition			
3	Child Health and Nutrition			
4	Child Health and Nutrition			
5	Child Health and Nutrition			
Total Score				
6	Reproductive Health			
7	Reproductive Health			
8	Reproductive Health			
9	Reproductive Health			
10	Reproductive Health			
Total Score				
11	HIV Prevention, CareandTreatment			
12	HIV Prevention, CareandTreatment			
13	HIV Prevention, CareandTreatment			
14	HIV Prevention, CareandTreatment			
15	HIV Prevention, CareandTreatment			
Total Score				
16	Curative: Outpatient/Inpatient			
17	Curative: Outpatient/Inpatient			
18	Curative: Outpatient/Inpatient			
19	Curative: Outpatient/Inpatient			
20	Curative: Outpatient/Inpatient			
Total Score				

Annex 2: District Assessment Tool

Routine Data Quality Audit District Assessment Form

Province		District		Visit Type	PA/TSS/DQA?
Date		Assessor:			

Section 1: Determinants of Data Quality

A-Availability of trained staff to perform management functions									
Read out each question carefully; depending on the response, make a circle around either 1 or 0							Response		
								Yes	No
101	Is there a specific officer designated to receive HMIS monthly reports? (SKIP TO 103 IF 101=0)							1	0
102	Which officer receives the monthly reports (Code the designation of the officer receiving the reports)							1	0
103	Is there an officer dedicated to record the health facility reports received (SKIP TO 105 IF 103=0)							1	0
104	Are the reports indicated in Q103 above, verified before entry? (MoV = Check FEEBACK Report)							1	0
105	Does the District Medical Office approve the reports before submitting them to the PMO? (i.e. DHIS 2)							1	0
106	How many programme managers have been oriented in the use of DHIS 2 database? (CIRCLE "1" IF ALL HAVE BEEN ORIENTED OR ELSE "0")		All	Oriented	1	0			
					1	0			
107	Are there meetings held to look at the performance of health facilities (SKIP TO 110 IF 107=0)							1	0
108	How often are these meetings held? (NOTE: Tick one that applies) (IF HELD QUARTERLY, CIRCLE "1" OR ELSE CIRCLE "0")	Quarterly	Monthly	Annually	1	0			
					1	0			
109	Is there evidence of such meetings? (IF "1" CHECK FOR THE MINUTES) IF 109= 0 SKIP TO NEXT SECTION							1	0
110	Are there any data audits activities undertaken to ensure quality of HMIS data? IF "YES" CHECK FOR THE DATA AUDIT REPORTS, OR ELSE SKIP TO THE NEXT SECTION)							1	0
Sum of all circled responses [A] =			Total score(Max=1 x 12)[B] =		Sect1a=[A/B x 100]=				

B-Availability of reference and data collection materials				
111	Check availability of these documents that explains how to manage the HMIS (CIRCLE "1" IF AVAILABLE OR SKIP TO 114 IF ALL RESPONSES ARE "0")	HMIS Indicators Manual	1	0
		HMIS Procedures Manual	1	0
		DHIS Manual	1	0
		DQA Guidelines	1	0
112	Check if these documents that explains how to manage the HMIS are available in print (CIRCLE "1" IF IN PRINT OR ELSE CIRCLE "0")	HMIS Indicators Manual	1	0
		HMIS Procedures Manual	1	0
		DHIS Manual	1	0
		DQA Guidelines	1	0
113	Is the district using the most up-to-date version of these manuals?	HMIS Indicators Manual	1	0
		HMIS Procedures Manual	1	0
		DHIS Manual	1	0
		DQA Guidelines	1	0
114	Is there a computer assigned for data entry		1	0

B-Availability of reference and data collection materials					
115	Does the district have a dedicated computer for keeping copies of DHIS data mart when internet connectivity is unavailable? (IF "1" CHECK FOR THE BACKED UP DATA)			1	0
116	Is there a filing system for the health facility reports HIA reports (IF "1" CHECK FOR THE FILLING SYSTEM)			1	0
117	Do you know how long the available stock of the HMIS data collection tools will last?			1	0
118	Are these the most recent versions of the HMIS data collection tools? (IF "1" CHECK FOR THE VERSION)			1	0
119	Do you have reliable internet connectivity?(SKIP TO THE NEXT SECTION IF 121=0)			1	0
120	Is there a budget line to support internet connectivity at the district?			1	0
Sum of all circled responses [C] =			Total Score(Max=1 x 19)[D] =	Sect1b=[C/D x 100]=	

C-HMIS Feedback					
The questions in this section are meant to assess the experience and practice concerning feedback on HMIS reports					
121	In the last three months, have you received feedback on the data after submitting reports to the province?			1	0
122	ASK FOR THE MOST RECENT COPY. Did the district provide the report without searching?			1	0
123	Is the feedback report kept in a dedicated folder/box file or filing cabinet?			1	0
124	When feedback from the province requests changes to the data, you have relayed the information to the affected facility and corrections are sent to you. What do you do?	a) Start by comparing the new submission with the previous one.		1	0
		b) Re-enters the whole form (BACKS UP THE OLD DATAFILE)		1	0
		c) Corrects only the data fields that had errors		1	0
125	How do you communicate HMIS technical challenges to the province for support?	a) Written submission (SAMPLE EXISTS)		1	0
		b) Written submission (NO SAMPLE EXISTS)		1	0
		c) Verbally (SOURCE DOCUMENT EXISTS)		1	0
		d) Verbally (NO SOURCE DOCUMENT EXISTS)		1	0
Sum of Entries [E]			Total score(Max=1 X 10)[F]=	Sect1c=[E/F] x 100 =	

Section 2: Data Quality Assessment

2.1. Reporting Timeliness

A-Knowledge of the HMIS Data Handling Deadlines [Ask these questions to the DMO]					
DO NOT PROMPT: If answer is correct make a circle around "1", otherwise circle on "0"				Yes	No
201	After the month ends when should all the health centres send their reports to the district? (Answer = 7th day of the month has ended) SCORE 1 if response is correct)			1	0
202	After the month has ended when should you receive feedback from the district? (Answer = Before the end of the second month) SCORE 1 if response is correct)			1	0
203	When should the district send datasets to the province? (Answer = By the end of the second month) SCORE 1 if response is correct)			1	0
204	When should the province submit the dataset to the national level? (Answer = By the fifth of the 3rd month) SCORE 1 if response is correct)			1	0
Sum of all circled responses [G] =			Total Score(Max=1 x 4)[H] =	Sect2a=[G/H x 100]=	

B-Practice in meeting reporting deadlines									
205a	Upon submission of monthly HMIS reports, the District Medical Office should have a record to show a form was submitted by health facilities. Please ask to be shown proof that reports for the last three months (starting with most recent) were submitted to the district. If proof is provided, circle "1" otherwise circle on "0".				Month 1	1	0		
					Month 2	1	0		
					Month 3	1	0		
205b	Please check the record for the past three months. Enter number of expected reports, and the number reported on time. If all facilities reported on time, Score "1" otherwise enter "0".			All Reports	On Time	Score			
				Month 1			1	0	
				Month 2			1	0	
				Month 3			1	0	
Sum of all circled responses [I] =					Total Score(Max=1 x 6)[J] =		Sect2b=[I/J x 100]=		

2.2. Report Completeness

C-Availability of completed HIA forms									
206	Please record "0" if you HAVE FOUND multiple copies of HIA forms for the same month, else "1"				1	0			
207	RANDOMLY SELECT FIVE (5) FACILITIES. ASK FOR A BOX FILE OR THE BATCH WHERE HIA FORMS FOR THE PAST 12 MONTHS FOR THE FIVE FACILITIES HAVE BEEN KEPT. Count the months for which either the HIA1 or HIA2 are available. For each month the form is available, score "1" then sum the scores for the 12 months for each form for all (5) facilities.				# of months form is available				
					HIA 2 (0-60)	HIA 2 (0-60)			
Sum of ANSWERS [K] =				0	Total score Max=(1)+(60x2) [L] =		Sect2c=[K/L x 100] =		-

D-Data Entry Completeness: Assess whether all reported data have been entered on the computer									
208	USE THE MOST RECENT HIA1 AND HIA2 reports. Firstly sample two (2) health facilities and in each, sample the required number of data elements per intervention. Compare data on hard copy with the data on DHIS. Score "1" if paper and electronic copies both have entries, then sum all the "1"s for each intervention area (both facilities) NOTE: the maximum is the total sampled data elements X2 per intervention				Intervention Area		# of data elements filled		
							HIA 2	HIA 2	
					Child Health and Nutrition				
					Reproductive Health- Antenatal and Postnatal Care				
					Reproductive Health- Obstetrics				
					Reproductive Health-Family Planning				
					HIV Testing and Counselling				
					PMTCT				
					HIV Care and Treatment				
					Voluntary Medical Male Circumcision				
					Curative Care-OPD				
					Medicines and Supplies				
					Environment Health				
Finances, Supportive Supervision and HMIS Quality Assurance									
Diagnosis and Deaths [0-88]									
Sum of Entries [M] =					Total score Max=(106)[N]=		Sect2d=[M/N] x 100 =		

2.3 Data Accuracy

E-Data Entry Accuracy: Verifying whether aggregated data on HIA1/2 match the data on computer						
209	USE THE MOST RECENT HIA1 AND HIA2 reports. Firstly sample two (2) health facilities and in each, sample the required number of data elements per intervention. For each data element selected, score "1" if the respective cell on the form matches the entry on the computer. Sum the 1s for both facilities NOTE: the maximum is the total sampled data elements X2 per intervention	Intervention Area	# of matching data elements			
			HIA 2	HIA 2		
		Child Health and Nutrition				
		Reproductive Health- Antenatal and Postnatal Care				
		Reproductive Health- Obstetrics				
		Reproductive Health-Family Planning				
		HIV Testing and Counselling				
		PMTCT				
		HIV Care and Treatment				
		Voluntary Medical Male Circumcision				
		Curative Care-OPD				
		Medicines and Supplies				
		Environment Health				
Finances ,Supportive Supervision and HMIS quality assurance						
Diagnosis and Deaths [0-88]						
Sum of Entries [O] =			Total score Max=(298)[P]=		Sect2e=[O/P] x 100 =	-

F-Internal Data Consistency: Whether expected relationships in the dataset are not violated						
210	DON'T USE DATA FROM THE DHIS DATABASE FOR THIS QUESTION. USE HARD COPIES				# of rules passed	
	For the list of Validation Rules use Annex 3, Under each intervention area, randomly select five two facilities and validation rules. Validate the most recent reports on the selected rules, score "1" if the rule is NOT violated. Sum all the "1"s for each intervention area	Intervention Area	HIA 1	HIA 2		
		Child Health and Nutrition [0-5]				
		Reproductive Health- Antenatal and Postnatal Care				
		Reproductive Health- Obstetrics				
		Reproductive Health-Family Planning				
		HIV Testing and Counselling				
		PMTCT				
		HIV Care and Treatment				
		Voluntary Medical Male Circumcision				
		Curative Care-OPD				
		Medicines and Supplies				
		Environment Health				
Finances,Supportive Supervision and HMIS Quality Assurance						
Diagnosis and Deaths [0-88]						
Sum of Entries [Q] =		0	Total score Max=(10X5)[R]=	50	Sect2f=[Q/R] x 100 =	0.0

Data Accuracy

E-Data Entry Accuracy: Verifying whether aggregated data on HIA1/2 match the data on computer					
209	USE THE MOST RECENT HIA1 AND HIA2 TO COMPLETE THE QUESTION.			# of matching data elements	
	USE THE MOST RECENT HIA1 AND HIA2 Reports Firstly sample two (2) health facilities and in each, sample the required number of data elements per intervention. Compare data on hard copy with the data on DHIS. Score "1" if paper and electronic copies both have entries, then sum all the "1"s for each intervention area for both facilities. Note: You can use "Data Entry Accuracy Assessment Form" in the Annex for additional analysis.	Intervention Area		HIA 1	HIA 2
		Child Health and Nutrition (0-18)			
		Reproductive Health(0-32)			
		HIV Prevention, Treatment and Care(0-58)			
		Curative: Outpatient/Inpatient [0-16]			
Diagnosis and Deaths [0-88]					
Sum of Entries [O] = ____		Total score-Max(106) [P] = ____		Sect2e=[O/P] x 100 = ____	
F-Internal data consistency: Whether expected relationships in the dataset are not violated					
210	USE DATA FROM THE DHIS DATABASE TO ANSWER THIS QUESTION. DO NOT USE HARD COPIES			# of rules passed	
	For the list of Validation Rules use Annex XX, Under each intervention area, randomly select two facilities and five validation rules. Validate the most recent reports on the selected rules, score "1" if the rule is NOT violated. Sum all the "1"s for each intervention area	Intervention Area		HIA 1	HIA 2
		Child Health and Nutrition [0-10]			
		Reproductive Health [0-10]			
		HIV Prevention, Treatment and Care [0-10]			
		Curative: Outpatient/Inpatient [0-16]			
Diagnosis and Deaths [0-88]					
Sum of Entries [Q] = ____		Total score-Max(10 X 5) [R] = ____		Sect2f=[Q/R] x 100 = ____	
O + R = ____		P + R = ____		Sect23Total=[O+R]/[P+R] x 100 = ____	

District HMIS Data Quality Audit

Internal Consistence Assessment Form

District Name: Facility Name:Reviewer:

Period: Start Month to End Month Year:

Once you have selected the validation rules for each intervention area, review the selected data elements from the HIA1/2 for the month(s) being audited. If a data element violates a rule, recode 0, otherwise enter 1.

NOTE: Use a more sheets if reviewing many elements or months.

#	Intervention Area	Selected Validation Rule	Basic Data Element ID	Has the rule been passed? Yes=1; No=0
1	Child Health and Nutrition			
2	Child Health and Nutrition			
3	Child Health and Nutrition			
4	Child Health and Nutrition			
5	Child Health and Nutrition			
Total Score				
6	Reproductive Health			
7	Reproductive Health			
8	Reproductive Health			
9	Reproductive Health			
10	Reproductive Health			
Total Score				
11	HIV Prevention, CareandTreatment			
12	HIV Prevention, CareandTreatment			
13	HIV Prevention, CareandTreatment			
14	HIV Prevention, CareandTreatment			
15	HIV Prevention, CareandTreatment			
Total Score				
16	Curative: Outpatient/Inpatient			
17	Curative: Outpatient/Inpatient			
18	Curative: Outpatient/Inpatient			
19	Curative: Outpatient/Inpatient			
20	Curative: Outpatient/Inpatient			
Total Score				

Annex 3: Service Deliver Sampling Frame – HIA2

Programme Area And Data Elements		Random Number
1 Child Health & Nutrition (CHN)		
1.1 Under 5 Clinic Attendance		
CHN1-005	Attendance child health <12 months male	1
CHN1-010	Attendance child health <12 months female	2
CHN1-015	Attendance child health 12-59 months male	3
CHN1-020	Attendance child health 12-59 months female	4
CHN1-030	Attendance from outside catchment's area	5
1.2 Growth monitoring and nutrition		
CHN2-005	Child 0 – 23 months weighed	6
CHN2-010	Child 24 – 59 months weighed	7
CHN2-020	Not gaining weight 0–23 months	8
CHN2-025	Not gaining weight 24–59 months	9
CHN2-035	Weight between -2Z & -3Z scores 0–23 months	10
CHN2-040	Weight between -2Z & -3Z scores 24–59 months	11
CHN2-045	Weight below -3Z scores 0–23 months	12
CHN2-050	Weight below -3Z scores 24–59 months	13
CHN2-055	Weight above +2Z scores 0–23 months	14
CHN2-060	Weight above +2Z scores 24–59 months	15
CHN2-065	Vitamin A supplement to 6-11 months infant	16
CHN2-070	Vitamin A supplement to 12-59 months child	17
CHN2-075	De worming dose to child 12-59 months	18
CHN2-080	Children who received insecticide-treated nets (ITNs)	19
1.3 Immunisation		
CHN3-005	BCG dose (<1 Year)	20
CHN3-010	OPV 0 (<1 Year)	21
CHN3-015	OPV 1 (<1 Year)	22
CHN3-020	OPV 2 (<1 Year)	23
CHN3-025	OPV 3 (<1 Year)	24
CHN3-030	OPV 4 (<1 Year)	25
CHN3-035	DPT-Hib+HepB 1 (<1 Year)	26
CHN3-040	DPT-Hib+HepB 2 (<1 Year)	27
CHN3-045	DPT-Hib+HepB 3 (<1 Year)	28
CHN3-050	PCV 1 (<1 Year)	29
CHN3-055	PCV 2 (<1 Year)	30
CHN3-060	PCV 3 (<1 Year)	31
CHN3-065	RV 1 (<1 Year)	32
CHN3-070	RV 2 (<1 Year)	33
CHN3-075	Measles 1st dose (<1 Year)	34
CHN3-080	Fully Immunised (<1 Year)	35
CHN3-085	Measles 2nd dose at 18 months	36
CHN3-090	Number of days fridge non-functional	37
2. Reproductive Health Services (IRH)		
2.1 Antenatal		
2.1.1 First antenatal visit		
IRH1-005	Antenatal 1st visit before 14 weeks	1
IRH1-010	Antenatal 1st visit 14 to 19 weeks	2

Programme Area And Data Elements		Random Number
IRH1-020	Antenatal 1st visit 20 weeks or later	3
IRH1-030	Antenatal 1st visit by woman < age of 18 years	4
2.1.2 Antenatal Follow-ups		
IRH1-035	Antenatal follow-up visits	5
IRH1-045	At least 4 ANC visits	6
IRH1-050	Antenatal attendance from outside catchment's area	7
2.1.3 Screening		
IRH1-055	Screened for anaemia at first ANC visit	8
IRH1-060	Antenatal client tested for syphilis	9
IRH1-065	Antenatal client tested positive for syphilis	10
2.1.4 Prophylaxis during pregnancy		
IRH1-070	IPT 1	11
IRH1-075	IPT 2	12
IRH1-080	IPT 3	13
IRH1-085	ITN provided at ANC visit	14
IRH1-090	Deworming dose	15
IRH1-095	Ferrous Sulphate dose	16
IRH1-100	Folic acid dose	17
IRH1-105	Pregnancies protected by TT	18
2.2 Postnatal		
IRH2-005	Postnatal care within 6 days of delivery	19
IRH2-010	Postnatal care between 6 days - 6 weeks	20
IRH2-120	Vitamin. A supplement to woman within 8 wks after delivery	21
2.3 Family Planning		
2.3.1 Attendances		
IRH3-005	Attendance family planning –(New acceptors)	1
IRH3-010	Attendance family planning -Revisit	2
IRH3-015	Attendance family planning - other	3
2.3.2 Methods		
IRH3-025	Male Condoms (# of pieces issued)	4
IRH3-030	Female Condoms (# of pieces issued)	5
IRH3-035	Combined Oral contraceptives (# of cycles issued)	6
IRH3-040	Progesterone only pill (# of cycles issued)	7
IRH3-045	Medroxyprogesterone injection	8
IRH3-050	Norethisterone enanthate injection	9
IRH3-055	Implant	10
IRH3-060	IUCD inserted	11
IRH3-065	Sterilisation – female	12
IRH3-070	Sterilisation - male	13
2.4 Obstetric Care		
2.4.1 Deliveries		
IRH4-005	Normal deliveries in facility	1
IRH4-010	Assisted delivery in facility (Vacuum/Forceps)	2
IRH4-015	Caesarean section	3
2.4.2 Delivery Supervision		
IRH4-025	Deliveries by skilled personnel (Midwife/Obstetrician)	4
IRH4-030	Deliveries by other skilled personnel(Nurses, CO, ML, MO)	5
IRH4-040	Deliveries by other facility staff	6
IRH4-045	Deliveries in facility by trained TBA's	7
IRH4-055	Home deliveries by trained TBA's	8

Programme Area And Data Elements		Random Number
IRH4-060	Home deliveries by any TBA's	9
2.4.3 Pregnancy / Delivery Complications		
IRH4-065	Sepsis	10
IRH4-070	Obstructed labour	11
IRH4-075	Hypertensive disorders	12
IRH4-080	Haemorrhage	13
IRH4-085	Abortion	14
IRH4-090	Ruptured uterus	15
IRH4-095	Retained placenta	16
IRH4-100	Obstetric Fistula	17
IRH4-110	Maternal deaths in facility	18
2.4.4 Procedures Performed		
IRH4-115	Manual vacuum Aspiration for incomplete abortion	19
IRH4-120	Manual removal of placenta	20
IRH4-125	Magnesiumsulphate given for Pre-Eclampsia / Eclampsia	21
IRH4-130	IV antibiotics given for sepsis	22
2.5 Outcome of Delivery		
2.5.1 Live Births		
IRH5-005	Live birth in facility <2500g	23
IRH5-010	Live birth in facility >=2500g	24
IRH5-020	Baby initiated to breast feed within an hour of birth	25
2.5.2 Still Births		
IRH5-025	Macerated still birth in facility	26
IRH5-030	Fresh still birth in facility	27
IRH5-040	Asphyxia	28
2.5.3 Neonatal Deaths		
IRH5-045	Inpatient death 0 to 7days – early neonatal	29
IRH5-050	Inpatient death 8 to 28 days– late neonatal	31
3 HIV/AIDS Services (HIV)		
3.1 Counselling and Testing (Excluding PMTCT)		
3.1.1 Testing		1
HIV1-005	Males (<15)	2
HIV1-010	Females (<15)	3
HIV1-015	Males (15+)	4
HIV1-020	Females (15+)	5
HIV1-030	Individuals (only)	6
HIV1-035	Couples (only)	7
3.1.2 HIV Positive Results		
HIV1-040	Males (<15)	8
HIV1-045	Females (<15)	9
HIV1-050	Males (15+)	10
HIV1-055	Females (15+)	11
HIV1-065	Concordant Couples (HTC)	12
HIV1-070	Discordant Couples (HTC)	13
3.1.3 Receiving Results		
HIV1-075	Males Pos (<15)	14
HIV1-080	Females Pos (<15)	15
HIV1-085	Males Pos (15+)	16
HIV1-090	Females Pos (15+)	17
HIV1-100	Total received negative results	18

Programme Area And Data Elements		Random Number
HIV1-110	Referred from HCT to ART	19
3.2 Prevention of Mother-to-Child Transmission of HIV		
3.2.1 Counselling& Testing		
HIV2-005	Tested - 1st ANC Visit	1
HIV2-010	Tested - Subsequent ANC Visit	2
HIV2-020	Labour& Delivery	3
HIV2-025	Postnatal within 72 hours of delivery	4
HIV2-035	Collecting Positive result	5
HIV2-040	Collecting Results - (pos&neg)	6
3.2.2 HIV Positive Result		7
HIV2-045	Known positive status at 1st ANC Visit	8
HIV2-050	During Antenatal	9
HIV2-055	Labour& Delivery	10
HIV2-060	Postnatal within 72 hours of Delivery	11
3.2.3 Partner Involvement		12
HIV2-075	Male partners tested - (ANC/L&D)	13
HIV2-080	Discordant Couples (ANC)	14
3.2.4 Post-test Services		15
HIV2-085	Assessed - WHO Clinical staging (only)	16
HIV2-090	Assessed - CD4 Count	17
HIV2-100	Eligible for ART	18
HIV2-105	Started on ART in ANC	19
HIV2-110	Referred for HIV Care	20
HIV2-115	Screened for TB	21
3.2.5 Maternal Prophylaxis(first issues only)		
HIV2-120	NVP	22
HIV2-125	AZT	23
HIV2-130	On ART (Includes HIV2-105)	24
3.2.6 Infant Prophylaxis (first issues only)		
HIV2-140	NVP at birth or soon after birth	25
3.3 HIV Exposed Infant		
3.3.1 Net Cohorts		
HIV3-005	Number of HEI at 2 months	26
HIV3-010	Number of HEI at 6 months	27
HIV3-015	Number of HEI at 12 months	28
3.3.2 Infant Feeding		
HIV3-020	BF (12 months)	29
HIV3-025	Not BF (12 months)	30
HIV3-030	Not Known	31
3.3.3 Infant Testing (Initial tests only)		
HIV3-040	Virology (within 2 months)	32
HIV3-045	Virology (from 3 to 11 months)	33
HIV3-050	Serology antibody test (at 12 months)	34
HIV3-055	Virology (at 12 months)	35
3.3.4 Confirmed Infant Test Results		
HIV3-065	Positive – (within 2 months) – Virology	36
HIV3-070	Positive – (from 3 to 11 months) – Virology	37
HIV3-075	Positive – (at 12 months) – Virology	38
3.4 Care and treatment		
3.4.1 Registering for Pre ART (entry points)		
HIV4-005	Pre ART registration from Counselling and Testing	1

Programme Area And Data Elements		Random Number
HIV4-010	Pre ART registration from PMTCT	2
HIV4-015	Pre ART registration from TB	3
HIV4-020	Pre ART registration from other sources	4
3.4.2 Cotrimoxazole Prophylaxis		
HIV4-030	HIV-Exposed Infant on Cotrimoxazole (within 2 months)	5
HIV4-035	HIV-Exposed Infants (reached 2 months)	6
HIV4-040	On CTX – (<1)	7
HIV4-045	On CTX – Male (1 - 4)	8
HIV4-050	On CTX – Female (1 - 4)	9
HIV4-055	On CTX – Male (5 -14)	10
HIV4-060	On CTX – Female (5 -14)	11
HIV4-065	On CTX – Male (15+)	12
HIV4-070	On CTX – Female (15+)	13
3.4.3 Enrolment in HIV Care		
HIV4-080	Enrolled in Care – (<1)	14
HIV4-085	Enrolled in Care – Male (<15)	15
HIV4-090	Enrolled in Care – Female (<15)	16
HIV4-095	Enrolled in Care – Male (15+)	17
HIV4-100	Enrolled in Care – Female (15+)	18
3.4.4 Currently in HIV Care		
HIV4-140	Currently in Care – (<1)	19
HIV4-145	Currently in Care – Male (<15)	20
HIV4-150	Currently in Care – Female (<15)	21
HIV4-155	Currently in Care – Male (15+)	22
HIV4-160	Currently in Care – Female (15+)	23
3.4.5 Eligibility for ART		
HIV4-170	Patients eligible for ART this month	24
3.4.6 Starting ART		
HIV4-175	Start ART – (<1)	25
HIV4-180	Start ART – Male (<15)	26
HIV4-185	Start ART – Female (<15)	27
HIV4-190	Start ART – Male (15+)	28
HIV4-195	Start ART – Female (15+)	29
HIV4-205	Start ART – Pregnant	30
HIV4-210	Start ART - TB	31
3.4.7 Currently on ART		
HIV4-245	Current on ART – (<1)	32
HIV4-250	Current on – Male (<15)	33
HIV4-255	Current on – Female (<15)	34
HIV4-260	Current on – Male (15+)	35
HIV4-265	Current on – Female (15+)	36
3.4.8 Cumulative Ever on ART		
HIV4-275	Ever Started ART – Male (<15)	37
HIV4-280	Ever Started ART – Female (<15)	38
HIV4-285	Ever Started ART – Male (15+)	39
HIV4-290	Ever Started ART – Female (15+)	40
3.4.9 Retention on ART		
HIV4-300	On Original 1st Line at 12 months	41
HIV4-310	On alternative 1st Line at 12 months	42
HIV4-320	On 2nd Line (or higher) at 12 months	43

Programme Area And Data Elements		Random Number
HIV4-340	ART Net Cohort at 12 months	44
3.4.10 Screening in HIV		
HIV4-345	Screened for TB	46
HIV4-350	Screened for cervical cancer	47
3.5 Post Exposure Prophylaxis		
3.5.1 Type of Client		48
HIV5-005	Occupational	49
HIV5-010	Sexual Assault	50
HIV5-015	Others	51
3.5.2 PEP Provided		
HIV5-025	Occupational	56
HIV5-030	Sexual Assault	57
HIV5-035	Others	58
3.6 Voluntary Medical Male Circumcision		
3.6.1 Number Circumcised		
HIV6-005	0 to 11 months	1
HIV6-010	1 to 14 years	2
HIV6-015	15-49 years	3
HIV6-020	(50+) year	4
HIV6-035	HIV Positive	5
HIV6-040	HIV Negative	6
HIV6-045	Unknown HIV Status	7
3.6.2 Adverse Events		
HIV6-050	During -AE(s)– moderate	8
HIV6-055	During– AE(s) – severe	9
HIV6-060	Post -AE(s)– moderate	10
HIV6-065	Post– AE(s) – severe	11
4 Curative Care		
4.1 Out-patients (OPD)		
4.1.1 First Attendances		
OPD1-005	First Attendances OPD - < 1 year	1
OPD1-010	First Attendances OPD - 1-4 year	2
OPD1-015	First Attendances OPD - 5+ years	3
4.1.2 Revisits		0
OPD1-025	Revisits OPD - < 1 year	4
OPD1-030	Revisits OPD - 1-4 year	5
OPD1-035	Revisits OPD - 5+ years	6
4.2 Inpatient Care (IPD)		
4.2.1 Admissions		
IPD1-005	Inpatient Admission <1 year	7
IPD1-010	Inpatient Admission 1-4 years	8
IPD1-015	Inpatient Admission >5 years	9
4.2.2 Discharges		
IPD1-025	Inpatient discharge <1 year	10
IPD1-030	Inpatient discharge 1-4 years	11
IPD1-035	Inpatient discharge >5 years	12
IPD1-045	Inpatient discharges due to malaria in pregnancy	13
IPD1-050	Inpatient deserts (self-discharge)	14
4.2.3 Transfers- Out		
IPD1-055	Inpatient transfer out <1 year	1

Programme Area And Data Elements		Random Number
IPD1-060	Inpatient transfer out 1-4 years	2
IPD1-065	Inpatient transfer out >5 years	3
IPD1-075	In-patients referred to a higher level of healthcare	4
4.2.4 Inpatient Deaths		5
IPD1-080	Inpatient death <1 year	6
IPD1-085	Inpatient death 1-4 months	7
IPD1-090	Inpatient death >5 years	8
IPD1-105	Inpatient death within 48 hours	9
4.3 Inpatient Utilisation		10
IPD1-110	Patient bed days during the period	11
IPD1-115	OPD Qualified staff person-days	12
IPD1-120	Number of beds	13
4.4.1 Breast Cancer		
CSD1-005	Number of women screened for breast cancer	1
CSD1-010	Number of women diagnosed with breast cancer	2
4.4.2 Cervical Cancer		
CSD1-015	Number of women screened for cervical cancer	3
CSD1-020	Number of men diagnosed with cervical cancer	4
4.4.3 Prostate Cancer		
CSD1-025	Number of men screened for prostate cancer	5
CSD1-030	Number of men diagnosed with prostate cancer	6
5.0. Human Resource. It has been skipped. Not auditing Human resource.		
6.0 Medicines and Supplies Management (MSM) - (Enter No. of days drug is available)		
DRG1-005	Doxycycline 100 mg tablet	1
DRG1-010	Phenytoin Tablets	2
DRG1-015	Any 1st line anti-malarial	3
DRG1-020	Amoxicillin 125 mg / 5 ml suspension	4
DRG1-025	Combined Oral contraceptive (ORALCON F)	5
DRG1-030	Any 1st line ARV drug	6
DRG1-040	4 FDC (TB) drug	7
DRG1-045	Benzyl penicillin	8
DRG1-050	Cotrimoxazole 480 mg	9
DRG1-055	Oxytocin	10
DRG1-060	DPT-HepB+Hib vaccine	11
DRG1-065	ORS	12
DRG1-070	Paracetamol 500 mg	13
DRG1-075	Rapid HIV test	14
DRG1-080	RPR test	15
DRG1-085	RDT test	16
DRG1-090	Any 1st line STIs drug	17
DRG1-095	Any Anti malaria for IPT	18
7 Environmental Health Services (ENV)		
7.1 Inspections		
ENV1-005	Target premises to be inspected	1
ENV1-010	Premises inspected	2
ENV1-015	Premises inspected in compliance	3
ENV1-020	Target food inspections to be performed	4
ENV1-025	Food inspections performed	5
ENV1-030	Food inspections resulting in seizure & disposal	6

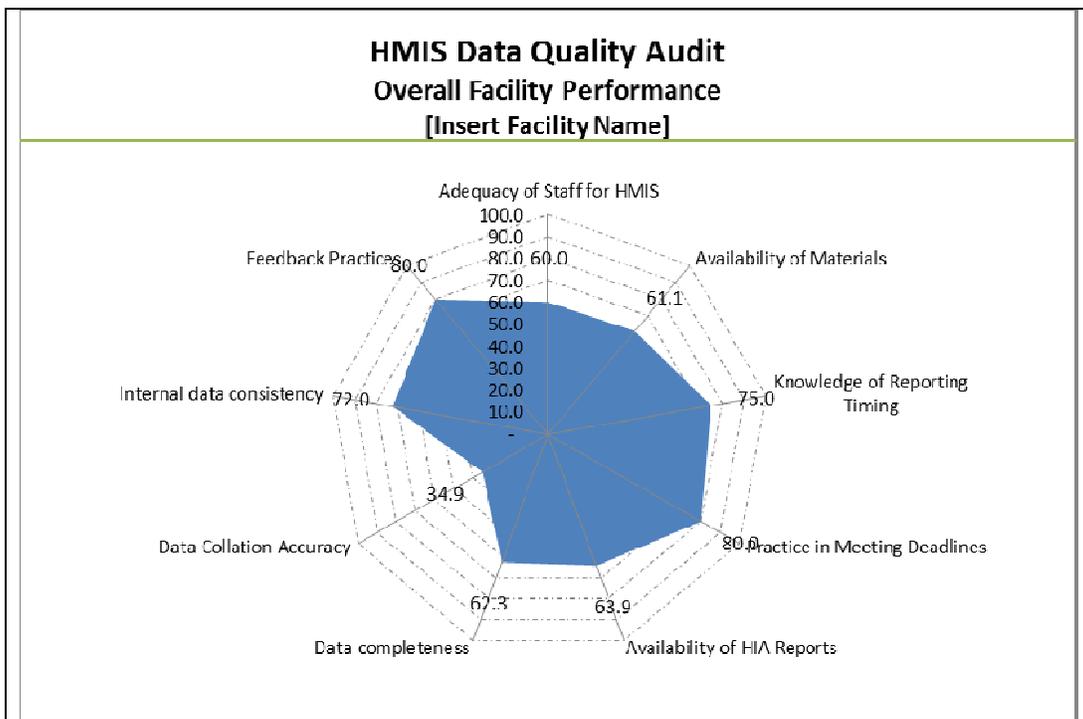
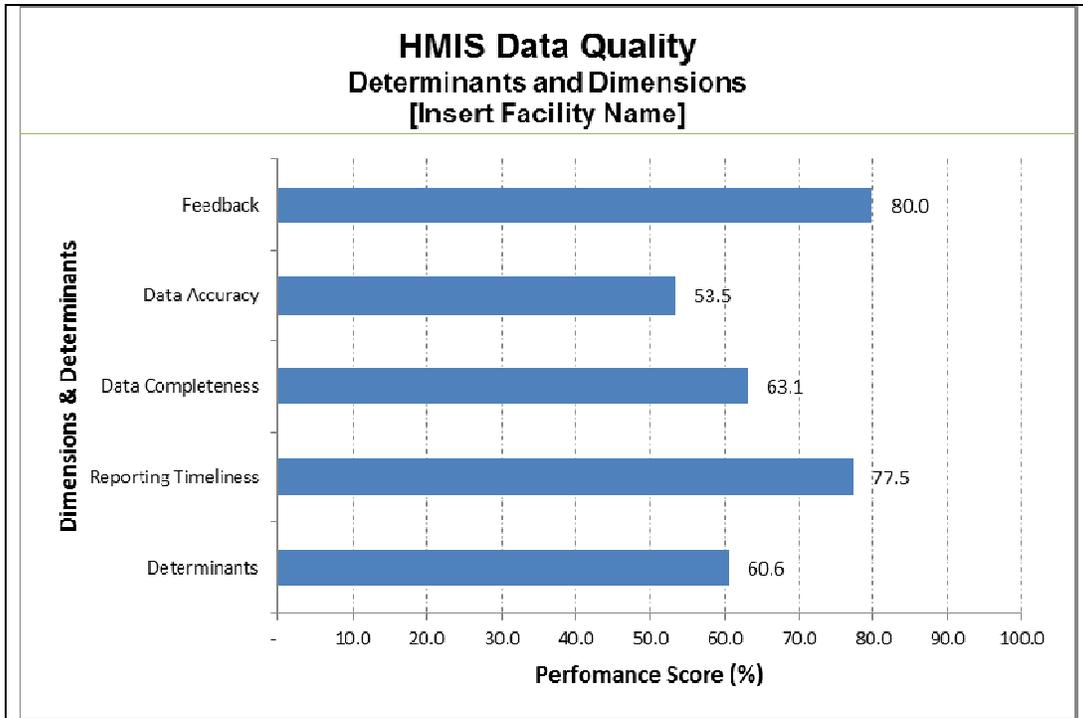
Programme Area And Data Elements		Random Number
ENV1-035	Target water sources to be inspected	7
ENV1-040	Water sources inspected	8
ENV1-045	Total sanitary facilities (water closets and pit latrines)	9
ENV1-050	Sanitary facilities inspected	10
ENV1-055	Statutory nuisance notices issued	11
ENV1-060	Statutory nuisance notices complied with	12
ENV1-065	Prosecutions conducted	13
ENV1-070	Number convicted/Fined	14
7.2 Sampling		
ENV2-005	Target food samples to be taken	15
ENV2-010	Food samples collected	16
ENV2-015	Food samples in compliance with standard	17
ENV2-020	Target water samples to be taken	18
ENV2-025	Water samples taken	19
ENV2-030	Water samples in compliance with WHO standard	20
ENV2-035	Target salt samples to be test for iodine levels	21
ENV2-040	Salt samples tested with adequate iodine	22
7.3 Rodents and Vector Control		
ENV3-005	Vector/Rodent complaints received	23
ENV3-010	Vector/Rodent complaints attended to	24
ENV3-015	Total number of households	25
ENV3-020	Households having ITNs	26
ENV3-025	Number of ITNs distributed	27
ENV3-030	Structures sprayed against mosquitoes	28
7.4 Refuse		
ENV3-035	Estimated tones of refuse generated (2kg per Household per day)	29
ENV3-040	Tones of refuse collected	30
8 Finances, Supportive Supervision and HMIS Quality Assurance		
8.1 Finances		
	Total (GRZ) amount received from DMO	
	Total budget for month	
	Total expenditure	
8.2 Supportive Supervision		
	PA visits twice in year by DHMT	
8.3 HMIS Quality Assurance		
	Ran out of cards, registers, tally or activity sheets (1=Yes, 0=No)	

Annex 4: Diseases Sampling Frame – HIA1

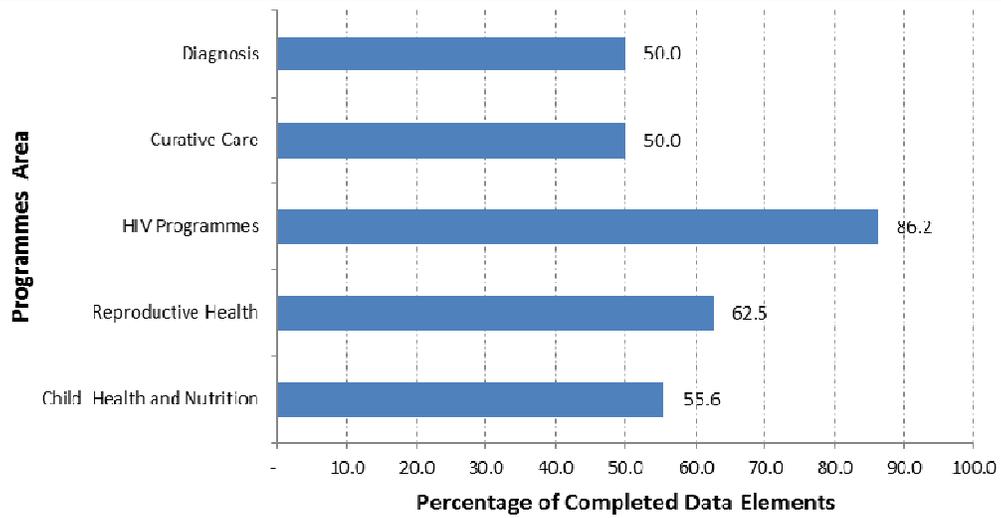
Diagnosis and Data Element ID			Random Number
Notifiable Diseases			
	Acute flaccid paralysis (suspected poliomyelitis)	NTF05	1
	Cholera	NTF10	2
	Measles	NTF15	3
	Meningitis	NTF20	4
	Neonatal tetanus	NTF25	5
	Plague	NTF30	6
	Rabies	NTF35	7
	Dysentery	NTF40	8
	Typhoid fever	NTF45	9
	Yellow fever	NTF50	10
	Viral Haemorrhagic fever	NTF55	11
	Anthrax	NTF60	12
	Avian influenza (Human)	NTF65	13
	Trypanosomiasis	NTF70	14
Selected Diseases			
	Malaria		
	Malaria case provided with anti-malarial treatment	MLR01	1
	Clinical case of malaria	MLR05	2
	Confirmed case of malaria	MLR10	3
	Clinical malaria in pregnancy	MLR15	4
	Confirmed malaria in pregnancy	MLR20	5
	Malaria laboratory tests (slide/RDT)	MLR25	6
	ENT		
	Ear Diseases	ENT05	7
	Nose Diseases	ENT10	8
	Throat Diseases	ENT15	9
	Chronic Diseases		
	Asthma	CRN05	10
	Cardio-vascular diseases	CRN10	11
	Diabetes	CRN15	12
	Hypertension	CRN20	13
	Epilepsy	CRN25	14
	Sickle Cell Anaemia	CRN30	15
	Retroviral Diseases (RVD)		
	Cryptococcal meningitis	RVD05	16
	Herpes zoster	RVD10	17
	Kaposi sarcoma	RVD15	18
	Pneumocystic Carnii Pneumonia (PCP)	RVD20	19
Other Diseases			
	Anaemia	D05	1
	Dental Carries	D10	2
	Dental diseases: Other	D15	3
	Diarrhoea (non-bloody)	D20	4
	Digestive system: (not infectious)	D25	5

Diagnosis and Data Element ID			Random Number
	Eye Disease: Glaucoma	D30	6
	Eye Disease: Refractory Errors	D35	7
	Eye Disease: Spring Catarrh	D40	8
	Eye diseases (infectious)	D45	9
	Genital-Urinary diseases (except STI)	D50	10
	Intestinal worms	D55	11
	Mental Health (Neurosis))	D60	12
	Mental Health (Psychosis)	D65	13
	Muscular skeletal and connective tissue (not trauma)	D70	14
	Neoplasm (All types)	D75	15
	Nervous System Disorders: Other	D80	16
	Poisoning	D85	17
	Pulmonary diseases (not infectious)	D90	18
	Pyrexia of Unknown Origin (PUO)	D95	19
	Respiratory Infection: non-pneumonia	D100	20
	Respiratory Infection: pneumonia	D105	21
	Severe Diarrhoea with dehydration	D110	22
	Severe malnutrition (new case)	D115	23
	Skin Diseases (not infectious)	D120	24
	Skin Diseases (infectious)	D125	25
	Snake Bite	D130	26
	Substance Abuse	D135	27
	TB	D140	28
	Trauma: Road traffic accident	D141	29
	Trauma: Burns	D142	30
	Trauma: Other Injuries, wounds	D144	31
	Bilharzia	D150	32
Obstetric Complications			
	Delivery Complications - sepsis	OBS05	1
	Pregnancy Complications - abortion	OBS10	2
Screening			
	Woman newly diagnosed with breast cancer	CNS05	3
	Woman newly diagnosed with cervical cancer	CNS10	4
Neonatal			
	Neonatal infections (all)	NN05	5
	Neonatal Prematurity	NN10	6
Sexually Transmitted Diseases			
	Genital ulcer	STI05	1
	Genital warts	STI10	2
	Inguinal bubo	STI15	3
	Male Urethritis Syndrome	STI20	4
	Pelvic Inflammatory Disease	STI25	5
	Vaginal discharge	STI26	6
	STI partner notification slips issued	STI30	7
	STI partner treated (new case)	STI35	8

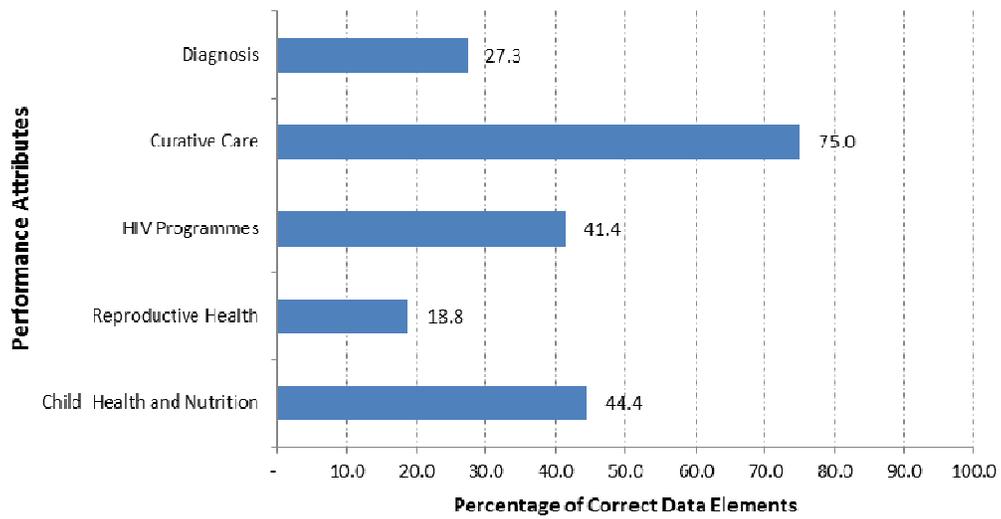
Annex 5: Graphing Templates - Samples



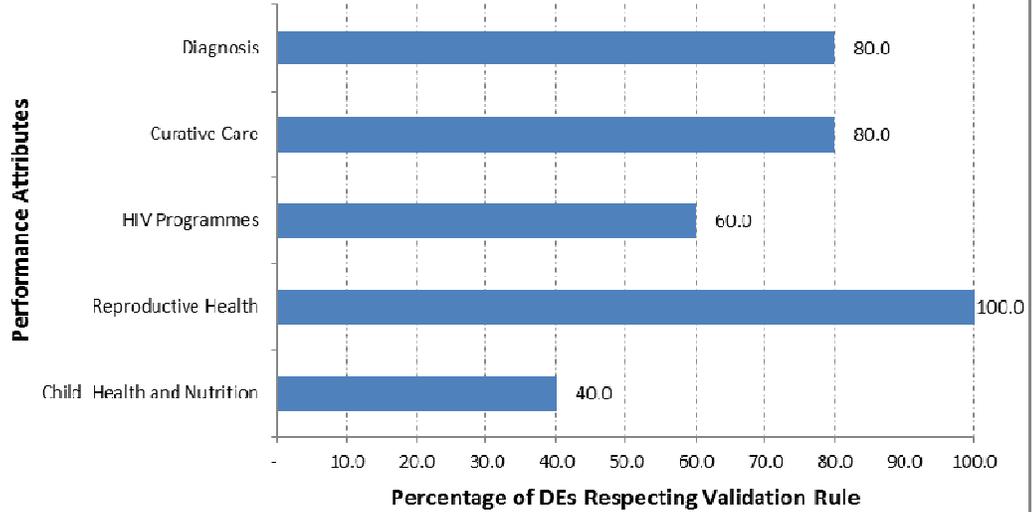
HMIS Data Quality Audit Reporting Completeness [Insert Facility Name]



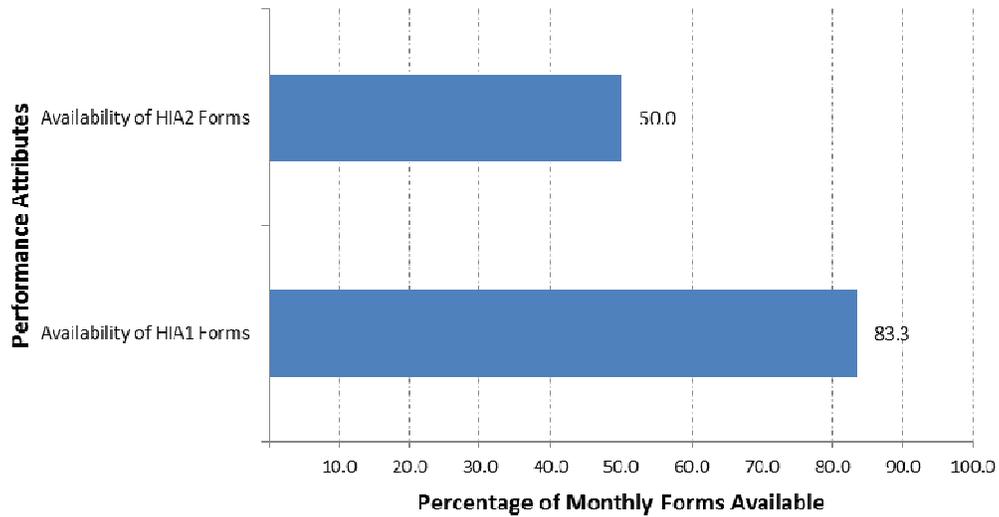
HMIS Data Quality Audit Data Collation Accuracy [Insert Facility Name]



HMIS Data Quality Audit Internal Data Consistency [Insert Facility Name]



HMIS Data Quality Audit Record Keeping and Filing [Insert Facility Name]



Annex 6: Performance Assessment Guides

Facility Performance Assessment Guide

Statistic Label	Guiding Questions	Scored	Targeted	Intervention Needed? (Yes/No)
Sect1a	Are members of staff adequately trained to handle HMIS processes?	_____	_____	
Sect1b	Are reference and data collection materials available?	_____	_____	
Sect3	Is the facility managing feedback properly	_____	_____	
Sect2b	Are the basic data collection procedures (e.g. reporting timeliness) being adhered to, by referring to the standard documentation	_____	_____	
Sect2c	Do the registers, tally/activity sheet have all the data elements needed for reporting?	_____	_____	
Sect2d	Are the data across the data tools consistent from one step of data collection to the next - if not so, at what stage are the errors being introduced?	_____	_____	
Sect2e		_____	_____	
Sect2f		_____	_____	
112 & 113	Does this facility have correct quantities of stationery	_____	_____	
111	Is this facility using correct versions of the HMIS stationery?	_____	_____	
Overall	Which components of the system require more attention?	Use the spider chart		

District Performance Assessment Guide

Statistic Label	Guiding Questions	Scored	Targeted	Intervention Needed? (Yes/No)
Sect1a	Is the district well-staffed to manage HMIS processes?	_____	_____	
Sect1b	Is the equipment, materials and space adequate?	_____	_____	
Sect21Total	Is the district management aware of reporting requirement?	_____	_____	
Sect2c	Is the storage and filing of completed facility forms adequate?	_____	_____	
Sect2d	Is the district up-to-date with entering data already submitted by health facilities?	_____	_____	
Sect2e	Is the district able to ensure that the data entered on the computer is a true reflection of what the health facility submitted?	_____	_____	
Sect2f	Does the district team demonstrate that they review the data from facilities before and after data entry	_____	_____	
Sect3	Is the facility managing feedback properly?	_____	_____	