FEDERAL MINISTRY OF HEALTH, NIGERIA

NATIONAL FRAMEWORK AND GUIDELINES

FOR

THE NATIONAL QUALITY IMPROVEMENT PROGRAMME ON HIV/AIDS SERVICES AND CARE

(NIGERIAQUAL)

OCTOBER 2014

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Foreword

The Government of Nigeria (GON) is dedicated to the improvement of the quality of life of its people in terms of health and socio-economic status. The achievement in the HIV/AIDS programme and service delivery in Nigeria was made possible through joint efforts by the GON and its partners such as the United States' President's Emergency Plan for AIDS Relief (PEPFAR), Global Fund and other donors. The programme feats include the massive scale up and increased access to HIV prevention, care and treatment services with several thousands of lives reached with appropriate services. The anticipated magnitude of transmission of the virus has been prevented and mortality curtailed. The need to sustain and continue to improve upon these achievements is of essence; and focusing on quality issues is crucial to this need.

Worldwide, beyond the expansion of services over the years, the quality of the care given has been receiving considerable attention in recent years. Based on its importance in improving service delivery, guiding policy formulation, improving quality of life and coupled with its impact on the entire health system, improving quality of care and service delivery in the health system is paramount. This is also applicable to the HIV and AIDS programme.

Improving the quality of services and care on HIV and AIDS, which is one of the key interest of the Federal Ministry of Health will be guided through the development of various national standardized documents that will serve as guide to all partners in the delivery and monitoring the quality of services rendered to the populace. The need to have a national quality improvement system and standard on HIV and AIDS cannot be overemphasized as this will promote cost efficiency and effectiveness. It will standardize service delivery and promote in-country sustainability. Beyond the HIV/AIDS service delivery, the opportunity for the quality improvement programme impacting the general health systems positively is also an added benefit. It is in this vein that this guideline is considered an invaluable asset towards the achievement of these laudable programme goals.

The guideline is meant to be used as a reference document on the Nigeria's quality improvement programme and should be used with other relevant materials on the subject. The process of developing the guideline was highly participatory involving representatives of stakeholders in HIV/AIDS programming such as policy makers, programme managers, service providers, and service consumers. All stakeholders are therefore encouraged to use the framework and guideline towards improving quality of care in HIV and AIDS, and the health system as a whole.

Dr. Khaliru Alhassan
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Development of this document was made possible through various inter-agencies/partners cooperation, technical input, and commitment. The Federal Ministry of Health would like to acknowledge all the organizations and individuals whose technical and financial support enhanced the completion of this document.

Funding partners such as the United State (US) Government through the US Centre for Disease Control and Prevention (CDC) and the United State Agency for International Development (USAID), Global funds and other donors have been providing significant financial aid on the National Quality Improvement programme in addition to their technical input. They have supported with funds from conceptualization phase to the ongoing implementation of the NigeriaQual activities.

A key partner on the NigeriaQual programme is the Nigerian Alliance for Health Systems Strengthening (NAHSS) whose major focus is on improving quality of care and services offered to HIV clients in our health facilities. Various organizations that participated in the development of this document include NACA, APIN, CCCRN/MGIC, CCFN, CIHP, FHI360, GHLI-L, IHVN, MSH, Solina Health, US DOD, NMOD and Bitsage technologies. The technical input of HEALTHQUAL International, a New York based organization was also crucial to the rollout of the programme and the development of this guide material.

Representatives of various States Ministry of Health, support groups, health facilities and members of different HIV/AIDS Technical Working Groups (TWG)/ Task teams in addition to the NigeriaQual team in the FMOH also contributed to the development of this document. A special appreciation goes to members of the national quality improvement (QI) task team led by FMOH that anchored this work.

As we recognise various stakeholders in HIV/AIDS programming such as policy makers, programme managers, service providers, and the consumers of health services, it is hoped that this document will be adequately used to improve the quality of care and services rendered in our health facilities.

Dr. Bridget Okoeguale
Director, Public Health
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Executive Summary

All systems are living entities that either continue to improve or deteriorate and the health system is a good example. If managers do nothing, the system would naturally deteriorate, but for the same system to continuously improve, an action or actions in the right direction must be implemented. Certainly, not all actions lead to an improvement.

The overall goal of the NigeriaQual is to improve the quality of care for all patients enrolled at HIV/AIDS care and treatment facilities using a tripod of quality improvement infrastructure, performance measurement, and continuous quality improvement activities which is focused on system issues and engaging all those involved in processes to improve the underlying system of care. The approach chosen for the NigeriaQual is the Model for Improvement (MFI) which consists of three fundamental questions of the Plan – Study – Do – Act (PDSA) Cycle to test and implement changes in real settings. These three fundamental questions are: What are we trying to improve? How will we know that a change is an improvement? And what changes can we make that will result in improvement. While the focus of NigeriaQual is HIV at present, it is highly recommended that other health service areas incorporate NigeriaQual strategies in their activities in the near future.

The Quality Improvement (QI) committee is an important group for the implementation of the NigeriaQual at the facility, IP, state and national levels with crucial responsibilities with regards to implementation and sustenance of the programme. It is recommended that the QI committee composition should be multi – disciplinary and can vary for different institutions based on existing structures. One of the functions of the QI committee is the performance measurement that provides the evidence for tracking quality improvement activities, another responsibility of the committee. NigeriaQual performance measurement has a 6-month reporting frequency of core national indicators using tools that have been developed. The indicator selection was guided by the relevant service delivery guidelines and would be reviewed based on need with time.

Quality improvement for the health sector has two perspectives, the provider and consumer. It is therefore important to track both perspectives. NigeriaQual would focus on all HIV service delivery components and consumer perspective; these are: ART treatment and care for adult and children; PMTCT, Facility audit – programme, financial and logistics management; HIV Counseling and Testing, M&E, Laboratory, and consumer satisfaction. All technical areas will be expanded and developed overtime. National tools, indicators and methods have been defined for tracking of quality issues for most of the technical areas. Other technical areas tools are expected to be developed overtime.

This guideline document provides detailed instruction for implementing the NigeriaQual and is structured into six (6) sections. The first section provides a brief background of the

epidemiology of HIV/AIDS, the national response and a synopsis of the NigeriaQual programme, its mission, vision, purpose and expected outcome; section two outlines the definition of quality improvements, performance measurement, QI principles, infrastructure and activities and the PDSA cycle; section three presents the framework that guides the programme; section four describes in detail the method for the programme performance measurement, the fifth section provides an insight into the programme software system that was developed for the analysis of the data collected during the performance measurement exercise, and the last section (sixth) focused on tools that will guide development of quality improvement activity/ projects for continuous quality improvement.

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti Retroviral Therapy
CQI	Continuous Quality Improvement
DCTs	Data Collection Tools
DBS	Dried Blood Spot
EMR	Electronic Medical Record
EDD	Expected Date Of Delivery
FBO	Faith Bases Organizations
FMOH	Federal Ministry Of Health
GON	Government Of Nigeria
HBC	Home Based Care
HCT	HIV Counseling and Testing
HIV	Human Immuno-Deficiency Virus
HIV +ve	HIV Positive
HIVQUAL	HIV Quality Improvement Programme
IPs	Implementing Partners
ISS	Integrated Supportive Supervision
LACA	Local Action Committee On AIDS
M&E	Monitoring And Evaluation
MFI	Model For Improvement
NACA	National Agency for the Control of AIDS
NAHSS	Nigerian Alliance For Health Systems' Strengthening
NigeriaQual	National Quality Improvement Programme
NDEx	NigeriaQual Data Exchange
NPO	Non Profit Organizations
PDSA	Plan Do Study Act
pRNL	Pediatric Random Number List
PABA	People Affected By HIV/AIDS
PHCs	Primary Health Centers
PLHIV	People Living With HIV/AIDS
wRNL	PMTCT Random Number List
PEPFAR	President's Emergency Plan For AIDS Relief
OVC	Orphan and Vulnerable Children
PMTCT	Prevention Of Mother To Child Transmission
QA	Quality Assurance
QI	Quality Improvement
QM	Quality Management
QoC	Quality Of Care

RNL	Random Number List
SACA	State Action Committee On AIDS
SDP	Service Delivery Point
STOCs	Small Tests Of Change
SMoH	State Ministry Of Health
ToT	Training of Trainers
MP Teams	Multidisciplinary Planning Teams
MFI	Model For Improvement

SECTION 1

INTRODUCTION

1.0 Background Information

1.0.1 Global Epidemiology of HIV/AIDS

Globally it is estimated that more than 37.2 million people were living with the Human Immunodeficiency Virus (HIV) and 2.1 million people were newly infected with the virus as at 2013[1]. These new infections were mostly among people in low and middle-income countries. Out of this number, young people (15 – 24yrs) account for more than one third of all infections, with some 3000 young people becoming infected with HIV each day. An increase in access to anti-retroviral therapy (ART) has contributed significantly to a noted 19% decline in deaths amongst People Living with HIV between 2004 and 2009. However, reductions are uneven across HIV infected populations due to unequal access to care and variable quality of services provided.

1.0.2 National Epidemiology of HIV/AIDS

With an estimated population of 177,155,754 at July 2014[2], Nigeria is the most populous country in sub- Saharan Africa. The first case of AIDS in Nigeria was reported in 1986 and since then the HIV prevalence has increased markedly until it peaked at 5.8% in 2001. A general reversal of the epidemic has however been noted since 2003 with a progressive decline to 4.1% in 2010[3] Even with this reversal, Nigeria has the second highest burden of HIV globally with 3.6 million people living with HIV/AIDS (PLHIV) in 2013[4].

1.0.3 National Response to HIV/AIDS

The Federal Ministry of Health (FMOH), through the HIV/AIDS Division of the Department of Public Health, is responsible for the coordination of HIV interventions within the health sector. This sector covers a wide range of formal and non-formal health care providers. The public sector includes activities within the federal and state ministries of health and their health facilities as well as the health departments and primary health centers (PHCs) in the local government areas (LGAs). The private sector encompasses faith-based organizations, non-governmental organizations providing health services and private for profit health facilities. The National Agency for the Control of AIDS (NACA) with the state and LGA equivalents (SACA and LACA) coordinate the overall multi-sectoral response to the HIV epidemic.

Through the concerted efforts of the Government of Nigeria (GON), supported by the President's Emergency Plan for AIDS Relief (PEPFAR), Global Fund and other donors, there has been a massive scale up and increased access to HIV care and treatment services in the last decade. This has led to the provision of antiretroviral therapy (ART) to approximately 638,000 people living with HIV/AIDS in Nigeria as at 2011. Despite these successes, suboptimal coordination, cost inefficiencies, disparities in access to care and variability in the methods and quality of services provided threaten sustainability of hard won progress. This underscores the need for a quality improvement plan for the Nigerian health sector.

1.1 Overview of the Nigeria Quality of Care Programme

Health care quality is defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."[5] The WHO recommends that the health systems should seek to make improvements in the following six dimensions of quality; effectiveness, efficiency, accessibility, patient centeredness, equity and safety.

Early attempts to implement quality improvement in the Nigerian health sector dates back to 2008 when the FMOH in conjunction with Center for Disease Prevention and Control (CDC) Nigeria and HEALTHQUAL piloted HIVQUAL-Nigeria and set the pace for thinking about quality in the context of HIV care and treatment. HEALTHQUAL was developed by the New York State AIDS Institute to drive the establishment of quality management (QM) programmes among Federally Funded grantees in the United States and beyond. However, the progress of HIVQUAL – Nigeria was punctuated by fragmented funding implementation, implementation disparities and other local contextual challenges.

The HIV Quality Improvement Programme (HIVQUAL-Nigeria) evolved in 2012 to National Quality Improvement Programme (NigeriaQual) through the support of PEPFAR and technical assistance from the University of Maryland – led Nigerian Alliance for Health Systems' Strengthening (NAHSS). The NigeriaQual programme addresses quality of care in line with the 2014 consolidated national HIV/AIDS treatment guideline.

A) Mission:

The FMoH is committed to promoting the quality of HIV clinical care delivered to people living with HIV across Nigeria. To uphold this commitment, the FMoH established the National Quality Improvement Programme (NigeriaQual). NigeriaQual will improve the quality of HIV care nationally by engaging policy makers, providers, state governments, IPs and consumers. The programme will help providers routinely collect performance data and use these findings to improve quality of care. In addition, NigeriaQual will facilitate the development of local and regional quality improvement infrastructures, as well as create opportunities for providers to share best practices and successful improvement strategies.

To achieve these goals and objectives, the NigeriaQual continues to emphasize the following components: development of standards used in clinical practice guidelines, performance measurement of clinical care, capacity building for providers for quality improvement, quality improvement coaching and consultation and dynamic collaboration with clinical experts, consumer representatives, IPs and state governments.

In collaboration with external stakeholders and impacted HIV communities, NigeriaQual will improve the health and well-being of people living with HIV and AIDS through measurable and continuous progress towards effective and patient-centered HIV services.

B) Vision:

The NigeriaQual aims to become a resource for anyone wishing to improve the outcomes of HIV health care for patients and communities in Nigeria. The programme will be known for its expansive efforts, vitality, innovation, expertise, and support to improve care and quality of life for people living with HIV throughout Nigeria and hopes to facilitate improvements beyond HIV care. It also has a vision of introducing the quality improvement strategies to other sectors in health and the non-health sectors.

1.2 Purpose of NigeriaQual

The overall goal of the NigeriaQual is to improve the quality and standard of care for all patients enrolled at HIV/AIDS care and treatment facilities using a tripod of quality improvement infrastructure, performance measurement and continuous quality improvement activities.

Specific objectives are to:

- Establish a national quality management infrastructure to plan, implement and sustain QI effort by end of 2015 and beyond.
- Promote, support and institutionalize quality improvement processes and activities at the facility, state and national levels by end of 2015 and beyond.
- Regularly monitor specific quality of care indicators in HIV/AIDS care and treatment facilities for the purpose of improvements
- Institute and track quality improvement projects in facilities and service delivery points
- Identify facility level characteristics and models of care that impact/ improve quality of care at the facility and clinical outcomes.
- Promote and facilitate sharing and adoption of “best practices” and “models of care” to achieve the highest possible quality of care at all HIV care and treatment facilities in Nigeria.
- Promote and encourage compliance on the use of various National guidelines on HIV and AIDS by the service providers.
- Extend the principles of CQI to other aspects of the health sector and non-health sector in Nigeria by end of 2015 and beyond.

Expected outcomes

- Improved quality of care at the facilities and clinical outcomes of clients.
- Improved access and availability of quality services to all consumers of health services.
- Improved organizational effectiveness and efficiency with appropriate use of services and resources.
- Improved clients and staff satisfaction.
- Strengthened care delivery systems in compliance with national guidelines.
- Standardized methods of practice with minimal variation in clinical services.
- Providers are equipped with sustainable skills to monitor quality.

This document provides detailed instruction for implementing the NigeriaQual.

Section 2

QUALITY IMPROVEMENT CONCEPTS

2.0 Introduction

This section provides a brief on general QI concepts, principles and processes and borrows greatly from the publication by the National Quality Center (NQC)[6]. The NQC facility www.nationalqualitycentre.org provides more materials to guide persons new to quality improvement.

2.1 Quality Improvement

2.1.0 Quality Improvement background

Improving the quality of care which will invariably improve the health outcome of clients is the overall aim of the health system. Quality of care refers to a process which adopts strategic choices in health systems. Put simply, it is the best health care given to a sick person. Quality health care usually enhances the satisfaction of a client and it also means doing the right thing at the right time in the right way for the right person and having the best possible result. Quality improvement (QI) seeks to continuously improve processes and health outcomes by focusing on system issues and engaging all those involved in processes to improve the underlying system of care.

2.1.1 Quality Improvement Principles

These are some key general principles that can help guide the quality improvement process:
Principle 1: "success is achieved through meeting the needs of those we serve"
Principle 2: "most problems are found in processes and systems, not in people"
Principle 3: "actions are based upon accurate and measured data"
Principle 4: "achieve continual improvement through small, incremental changes"
Principle 5: "infrastructure enhances systematic implementation of improvement activities"
Principle 6: "do not reinvent the wheel - steal shamelessly, share senselessly"
Principle 7: "Set priorities and communicate clearly."

2.2 Plan Do Study Act (PDSA) Cycles

The approach chosen for the NigeriaQual is the Model For Improvement (MFI) (see figure 2.1) which consists of three fundamental questions plus a Plan – Study – Do – Act (PDSA) Cycle to test and implement changes in real settings. These three fundamental questions are:

- What are we trying to improve?

- How can we know that a change is an improvement?
- What changes can we make that will result in improvement?

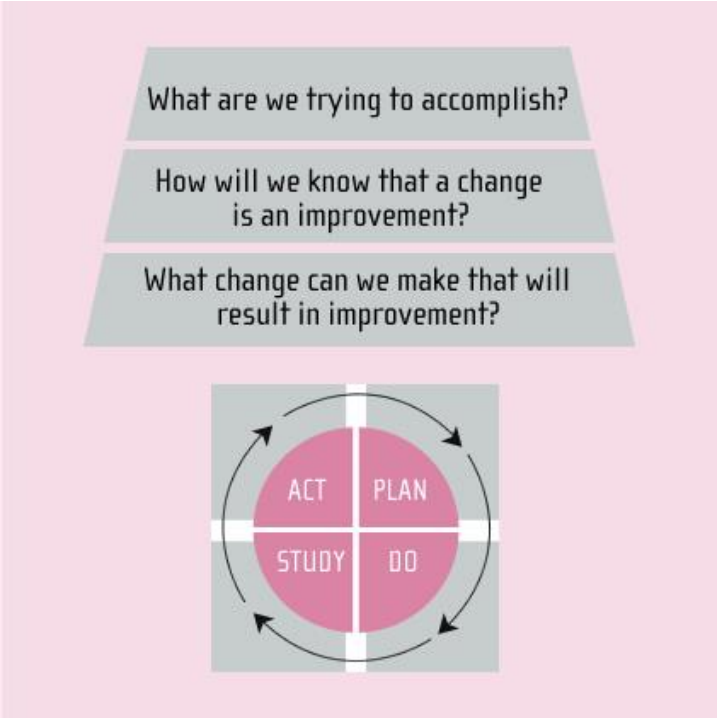


Figure 2.1: The PDSA Cycle - Model for Improvement

The PDSA cycle is a scientific approach used for action oriented learning. It involves sequential tests each building on prior iterations, once one cycle of testing and learning is completed the next one begins. This process allows health care providers to understand which changes worked and which changes need to be adapted or discarded. The knowledge gained in the first cycle is used to plan the next test.

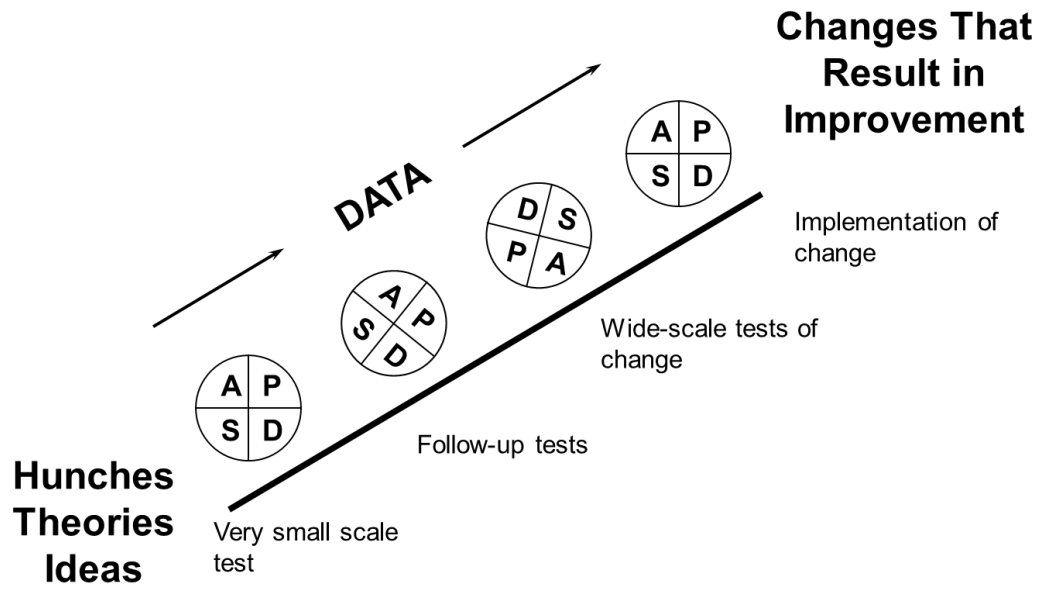


Figure 2.2: The PDSA Cycle Example

This process (Figure 2.2) is continued and used to refine a particular change until it is ready for broader implementation, whereby it effectively becomes a standard procedure formalized within the health system.

2.3 Quality Improvement Infrastructure

a. Develop and Plan a Quality improvement Programme

There are four basic steps in developing and planning a quality improvement programme. Quality Improvement programme are most successful when led and supported by the leadership of the healthcare organization at the facility, state or national level. This leadership provides an environment conducive to establishing changes at the respective levels. The four basic steps include:

- Identify Leaders and Key Stakeholders
- Form a Quality Improvement Committee
- Develop a Quality Management Plan
- Strategize Implementation of the Quality improvement Plan.

1. Identify Leaders and Key stakeholders

Leadership is an essential component of a quality programme. Leaders are those individuals who have the ability to formally and informally influence and inspire others providing a vision and direction for the quality programme. Leaders create the culture in which quality is both prized and promoted.

2. Form a Quality Improvement Committee

In order to build momentum for quality improvement activities, a group of individuals can be brought together –a multi – disciplinary Quality Improvement Committee. These individuals build the capacity for quality improvement within the relevant institutions and should have specific roles and responsibilities. Some of the same people identified as leaders or key stakeholders may also serve on the quality committee. The composition of the committee can vary for different institutions based on existing structures. The major task of a Quality Improvement Committee is to help ensure everything is in place at the institution for the improvement efforts to succeed and be sustained over time. The Quality Improvement Committee plans and oversees all quality programme activities at the institution, particularly the quality improvement projects completed by individual project teams. Members of the Quality Improvement Committee have five main areas of responsibility:

- Strategic planning
- Facilitating innovation and change
- Providing guidance and reassurance
- Establishing a common culture that enhances quality care
- Allocating resources effectively and efficiently.

3. Develop a Quality Management Plan

A quality Management plan serves as the blueprint for quality initiatives. It describes the overriding purpose of a health systems quality programme, the infrastructure that supports quality activities and its goals for the upcoming year. A quality management plan should be developed at the facility, state and national levels and it serves as a reference tool for both current and future staff. Its components include:

- **Quality statement:** Describes the purpose of the health system's quality programme. It is the end to which all other programme activities are directed.

- **Quality Management infrastructure:** Describes how the programme is structured and staffed in order to get work done. This usually comprises of:

i. Leadership
ii. Quality committee structure
iii. Quality committee meeting frequency
iv. Quality committee reporting

- **Performance measurement:**

It is a method for identifying and quantifying the critical aspects of care within the health system against set criteria. In identifying aspects of care for performance measurement, keep in mind these four main criteria: Namely; Relevance (Impact on clients), Measurable (Considering health system resources), Accuracy (Should be based on accepted guidelines) and it is improvable. Sections 2.4 and 4 provide more details on the NigeriaQual performance measurement.

- **Annual quality goals:**

Quality goals are endpoints or conditions toward which the health system will direct its efforts and resources during project work. It will help programmes focus on improving aspects of care. States and facilities should have QI goals which may differ by level of organization depending on performance data but all the goals should aim at overall quality. States, IPs and facilities should all work together to align their quality goals. The following three criteria can be helpful to a quality committee in prioritizing annual programme specific improvement goals:

i. Frequency: How many client's received and how many did not receive the standard of care?
ii. Impact: What will be the effect on client's health if they do not receive this care?
iii. Feasibility: Can something be done about this problem with the resources available?

Participation of stakeholders:

For quality improvement activities to become a reality at any level of the health system, provisions need to be outlined in the quality improvement plan for:

- Active engagement of staff and clients: Gaining staff and clients' support for quality improvements requires capturing and integrating their voices. Their needs and expectations should be understood and their feedback reflected in the quality improvement management plan.
- Communicating information about quality improvement activities: A quality improvement plan should document how the health system will share information about its quality activities and project results.
- Providing opportunities for learning about quality improvement: The quality improvement plan should describe how the health system intends to provide staff training and learning opportunities. As appropriate, these learning interventions could be shared with clients.

- **Evaluation**

It is important to assess how efficiently the programme is operating as a whole. There are two areas to consider in evaluation:

- Quality improvement projects conducted during the year: should be evaluated for relevance, cost and effect in the health systems quality of care and result in improvements that are sustainable over time.
- Quality management plan: should be evaluated for accessibility and effectiveness of the plan in providing the vision and organization required for the entire quality programme.

Strategize Implementation of the Quality Plan

An annual work plan answers the questions of what, when, where, and how a quality improvement plan is implemented. Figure 2.3 provides a sample workplan. It benefits the quality implementation efforts by:

- Clearly documenting the necessary steps to implement the quality improvement plan.
- Assisting the quality improvement committee to allocate the appropriate resources essential for quality improvement activities, including project teams, staff training, data collection, and evaluation efforts.
- Effectively communicating quality improvement activities to staff and stakeholders.
- Creating a template to monitor the implementation process of the quality improvement plan.

Sample Quality Improvement Workplan

Goal 1:

		Month>	Jul-13				Aug-13				Sep-13				Oct-13			
S/No	**ACTIVITY**	**WHO**	Wk 1	Wk 2	Wk 3	Wk 4	Wk 1	Wk 2	Wk 3	Wk 4	Wk 1	Wk 2	Wk 3	Wk 4	Wk 1	Wk 2	Wk 3	Wk 4
1	Revise HIV quality management plan	Committee																
2	Develop annual quality workplan	Committee																
3	Prepare planning information (data collection, program assessment/evaluation, organizational priorities, HRSA grant) – for bimonthly meeting.	Committee																
4	Review HIV quality management plan. Make changes if needed	Committee																
5	Discuss and set annual goals	Committee																
6	Monitor implementation of plan. Revise as needed	Committee																
7	Evaluate quality management program by Quality improvement project teams – at bimonthly meetings	Committee																
8	Program goals:Annual organizational assessment	Committee																

Figure 2.3: Sample Quality Improvement Workplan

2.4 Performance Measurement

- Reason for routine performance measurement. Separates what you think is happening from what is really happening and establishes a baseline. Standardized measures allow for comparing performance across the health care sector. To monitor improvement and prevent slippage. To compare performance against both internal and external standards.

- Balancing performance measurement with quality improvement activities. Measuring important aspects of care creates a valuable source of data regarding the health system's greatest areas of competence. It identifies those areas that require improvement and will produce the greatest benefit for clients and staff when adequately addressed. Performance measurement is intended not only to evaluate the performance of a

programme as a whole but also to stimulate or facilitate quality improvement effort. The ultimate goal is to use performance data results to improve health care system, balancing performance measurement and quality improvement. Measuring the quality of care alone is not quality improvement. Performance measurement does not conclude with a single measurement. It includes an evaluation of your process to determine whether it has worked and what improvements should be made the next time

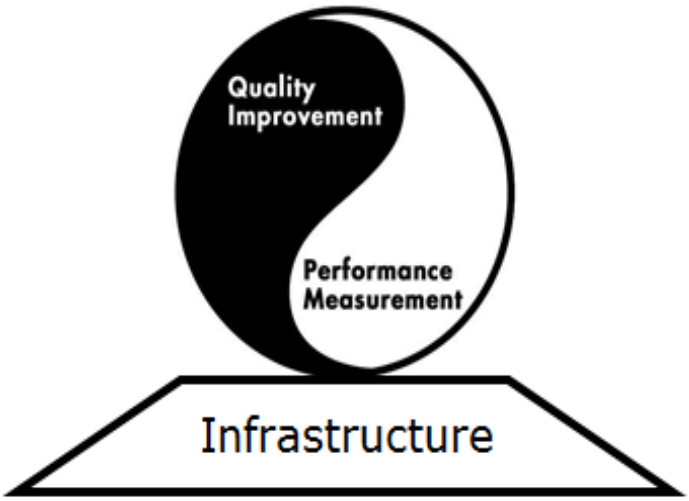


Figure 2.4: HIVQUAL Model for Quality Management

2.5 Definition of a sound Performance indicator.

An indicator measures the value of change in meaningful units that can be compared to past and future units. A quality indicator is a tool to measure specific aspects of care and services that are optimally linked to better health outcomes while being consistent with current professional knowledge and meeting clients' needs. There are four main criteria to use in selecting sound indicator.

- Relevance: The indicator should relate to a condition that occurs frequently or has a great impact on the client's in the health system.
- Measurability: The indicator should realistically and efficiently measure the health system's given resources.
- Improvability: The performance rate associated with the indicator should realistically improve given the limitations of the health system.
- Accuracy: The indicator should be based on accepted guidelines or developed through formal group-decision making methods.

NigeriaQual routinely measures performance of health care services based on standardized indicators to assess the quality of the health care system and effectively links performance data to accelerated improvements in health care. A 6-month reporting frequency of core national indicators is required. The methodology of the PM and indicators are presented in section four

of this guideline and the tools for data abstraction are provided in the appendix. It is worthy of note that the indicator selection were guided by the relevant service delivery guidelines and indicators would be reviewed based on need with time.

2.6 Quality Improvement Activities

1. Developing a project team. Quality improvement activities require people who have the reliable skills, knowledge, experience and perspective to solve multifaceted problems, make good decisions and deliver effective solutions.

There are steps in carrying out the quality improvement activities; which are:

1. Setting up the quality Improvement committee;
2. Investigating the process;
3. Writing the Improvement Project Memo;
4. Conduct Plan-Do-Study-Act (PDSA) Cycles.

1. Setting up the Quality Improvement Committee

Quality improvement activities are termed projects and are carried out by Project Teams. Members of a project team can be drawn from the QI Committee or any other member not part of the CQI committee who can drive the project. These project teams are formed on a temporary basis to carry out focused interventions. The project team identifies the problems in the processes and proffer solutions that will bring about improvement; this is a continuous process towards quality improvement.

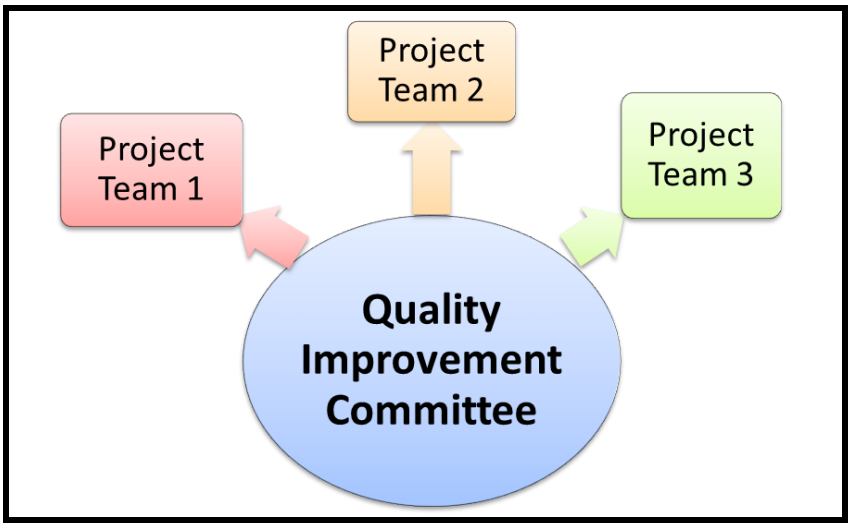


Figure 2.5: QI Team Chart

2. Investigate the Process

This involves evaluating existing processes in the health system, to diagnose potential quality problems and or opportunities for improvement. It also involves determining potential interventions for the processes that require improvement and defining performance measures.

3. Writing a Quality Improvement Memo

Quality improvement project memo is a blueprint which describes the "who, what, why, and how" of a quality improvement project written by the project team. It is written after carrying out the investigation. The elements of a project memo include:

a. Problem statement - the problem to be addressed.
b. Improvement goal – end point or condition towards which members direct their attention.
c. Intervention – The agreed upon strategies with which project team achieves their improvement goals.
d. Project team - Department or functions involved in the process.
e. Team leader – directs team activities towards set goals.
f. Team members – actively participate and offer perspectives and ideas.
g. Others (resources, authority, frequency of reporting).

4. Conduct Plan-Do-Study-Act (PDSA) Cycles

After writing a Quality Improvement Memo, the Quality Improvement Committee should carry out the agreed upon interventions using the PDSA Cycle, implement positive changes throughout the health system and sustain improvements thereby making quality improvement a culture in the health system.

Section 3

Nigeria's Quality Improvement Framework

3.0 Overview of Quality Improvement framework

A framework is a structure on which any programme design and implementation are built. The Quality improvement framework is the pillar on which NigeriaQual programme is being developed.

3.1 Guiding Principles

The NigeriaQual frame work is developed with the following guiding principles:

- Performance measurement lays the foundation for quality improvement
- Sound quality improvement infrastructure supports systematic implementation of quality improvement activities
- Indicators to measure performance are based on national clinical guidelines or formal group decision-making methods
- Continuous Quality Improvement (CQI) activities lead to improved patient outcomes
- Peer review of performance helps in dissemination of best practices
- Service providers involvement ensures cost effectiveness and sustainability
- Multidisciplinary approach ensures comprehensiveness when launching the national quality improvement activities

In order to ensure the successful implementation of this framework, all HIV stakeholders in Nigeria are expected to participate in the programme roll out. In addition, all HIV treatment programmes must provide for the establishment of a quality improvement programme system to assess the extent to which HIV health services provided to patients are consistent with the clinical practice standards.

State and local governments should foster collaboration across their constituencies to improve HIV care. IPs should support state and local government improvement activities in line with the overall national quality improvement framework. Finally, people living with HIV/AIDS and people affected by HIV/AIDS (PLWHA and PABA) are to participate in local, state and national quality improvement activities.

3.2 Strategic Goals for the Framework:

The NigeriaQual maintains the following long-term strategic goals:

1. Governance
2. Engagement of State and Local Government

3. Capacity building
4. Performance measurement
5. Stretch goals

1. Governance

Principle: The NigeriaQual structure is established to improve the quality of HIV care, clinical outcomes, provider satisfaction and client satisfaction nationally by engaging all relevant stakeholders. It is regularly reviewed and updated to be responsive and effective in an evolving environment of HIV care which may be health facilities. Health facilities in this case are the public, private, Faith Bases Organizations (FBO), Non Profit Organizations (NPO) or any other form of health service delivery system.

Important steps include:

- Development of a National Quality Framework to clearly articulate the expectations of all stakeholders;
  - Each HIV programme in Nigeria should have a sustainable quality improvement (QI) team in place, which routinely reports standardized quality indicators and conduct QI projects based on prioritized aspects of care.
  - State and local government should lead and facilitate quality improvement activities across their jurisdiction.
  - IPs should support State and Local Government in quality improvement activities.
- State and Local government supported by IPs should roll out quality improvement activities in their domains.
- Development of a National Quality Improvement Team/committee under the leadership of the FMoH. It will have representatives of State Governments, IPs, providers and consumers that will contribute their perspectives and advice the FMoH on the implementation of the programme.
- Development of a periodic Work Plan to implement the framework and monitor the progression over time.
- Outline key priorities for stakeholders and establish a blueprint of expectations and timelines

2. Engagement of State and Local Governments

Principle: State and local governments play a pivotal role in envisioning and implementing the National HIV Quality Framework and need to be supported to assist HIV programmes across their constituencies.

Important steps include:

- Advocacy and sensitization of state and local governments
- Articulation of the roles and responsibilities for each state government and how to locally implement the national framework:

- Formation of a state QI team with stakeholders' representation
- Reporting of HIV programmes
- Provision of technical assistance to the Local Government and facilities.
- Convening State QI meetings
- Using data for local quality improvement activities

- Formation of Multidisciplinary Planning team
  - Engage empowered QI teams with organizational/financial management capacity to assume direct operation of QI Programmes in line with state strategic plan.
  - Enhance State coordination of logistics and forecasting capacities at the facility and community levels. It will also strengthen central distribution systems utilized for GoN commodities procurements.
  - Utilize "Blueprint for Transition Plan" inventory needs and leverage "indirect" assets (e.g., midwives) for optimal impact on programme quality and outcomes
  - Integrated supportive supervision (ISS) at both State, Local Governments and facility levels
- IPs to expand NigeriaQual programme to as many facilities as possible in an incremental approach
  - Increase numbers of facilities able to conduct QI activities in the State and Local Government with the support of IPs in order to reach all HIV programmes in Nigeria.
  - State and Local Government QI teams to factor in local priorities in order to enhance local ownership

3. Capacity Building

Principle: HIV/AIDS providers in Nigeria become proficient in using quality improvement tools and methodologies to advance HIV care.

Important steps include:

- Development of a National quality improvement training plan and guideline
- Development of a quality toolkit for programmes that facilitate the initiation of improvement activities
- Capacity building of quality improvement champions from various stakeholders, including Federal Government, State Governments, Local Governments and IPs to take on key roles when rolling out the National HIV Quality Programme
- QI training activities to include Federal Government, State Governments, Local Governments and IPs; identification of these representatives is needed to develop a local pool of QI champions.
- Support a pool of quality coaches at all levels (Federal, State and Local governments and IPs) with step down quality improvement training opportunities.
- Individual facilities being supported by the facility leadership, Federal and State governments and IPs.
- Initiation of a national training for coaches with concrete expectations to enable them:
  - Conduct QI trainings at State, Local Government/ QI meetings
  - Provide technical assistance to Federal, State, Local Government and Health facilities

- Gather, adopt and share best practices throughout the continuum of HIV care to promote effective models of care that are responsive to the needs of patients;
  - presentations of facility-specific QI projects and successes at national meetings; call for national posters and presentations to highlight QI successes across Nigeria
  - Identify and develop paired learning and sharing opportunities for IPs to elaborate collaboration at different levels.

4. Performance Measurement

Principle: Routine performance measurement based on standardized indicators and data submission methodologies is used to assess the quality of HIV care in Nigeria and effectively link performance data to accelerated improvements in HIV care.

Important steps include:

- Creation of a minimal set of data expected from all stakeholders in line with the national guidelines;
- A 6-monthly reporting of core national indicators which are standardized and approved by the FMoH
- Harmonization of performance measurement strategies, including indicators and data collection strategies, with existing data reporting systems, and standardization of data collection tools.
- Utilization and update of previously developed indicators to generate
- A prioritized list of core indicators with the flexibility to allow stakeholders add their individual indicator priorities; Development of a data reporting platform/national database through which service delivery point (SDP) reports in a hierarchical order (Facility – To the Local Government then to the State Government and finally to the Federal Government).
- Pilot testing of newly developed indicators and data collection strategies/tools with selected programmes (those with EMR/without EMR)
- Coordination and integration of these indicators and data collection strategies in existing data systems
- Utilizing performance data results to initiate CQI activities;
  - State Governments with support of IPs share data reports with facilities in their respective states

5. Stretch goals

Principle: The measurement of quality of care has emerged as a key element of HIV/AIDS service delivery. Various stakeholders in the health sector and other sectors should be supported to mainstream QI strategies in their respective programmes.

The following have been outlined that may serve as a blueprint for the coming years:

- Over time the NigeriaQual should include a broad spectrum of services, which will potentially expand to non-HIV disease programmes, non-health sectors and the private sector
- The formation of a national consumer advisory committee using existing consumer groups should be considered.
- A national forum for recognition of facility-specific QI projects should be developed to showcase and promote local quality champions and their successes.

3.3 Sustainability strategy

Definition of sustainability:

Sustainability is a widely used term that describes something's ability to be maintained at a certain rate or level. It is the ability for something's long term state of well-being. A process that ensures the needs of the present be met without compromising the ability of future needs [7]. The sustainability strategy and expansion plan for will focus on the various actors vis-a-vis Federal, State, LGA, facility, and implementing partners and CQI team.

3.3.1 Key Themes of Sustainability:

An organization may have many questions when deciding to incorporate sustainability into their strategy, operations and decision making criteria. Questions typically fall into three categories.

a. Improve our ability to fulfill our mission (institutional)
b. Educate and engage stakeholders (technical)
c. Secure support and funding (financial)

The NigeriaQual sustainability strategy will be discussed for each level/actor along these 3 categories- Institutional, Technical and Financial. Table 3.1 below highlights the various responsibilities.

I. Facility level approach

a. Institution

Composition of facility QI team

- Every facility at all levels shall constitute a facility-level QI team
  - QI team shall be made up of facility staff
  - A multi-disciplinary team with staff from every thematic area. The number will depend on the facility.
  - Heads of facilities shall be responsible for the constitution of such a team at their respective facilities.
  - The head of facility shall appoint himself or any staff of the facility to head the team
  - Facilities that have an already existing multidisciplinary team shall leverage on such teams to carry out QI activities.

b. Financial

- The head of facility shall provide resources (Financial and Logistics) for the activities of the committee to ensure that it remains functional
- The head of facility shall ensure that QI activities are included in the facility work-plan and budgeted for in the annual budget.

c. Technical

- Each facility QI team member shall be trained in QI principles and methodology in order to possess the required capacity to carry out QI activities
- Every trained QI team member shall mentor other facility staff and carry out periodic QI trainings as the need arises.
- Each facility shall have a copy of the NigeriaQual guideline and every relevant document to guide QI processes at the facility.

II. LGA Level approach

a. Institution

Composition of LGA QI team

- Members shall include representatives of different units of the LGA health department.
- The HOD health or whoever heads the LGA health department shall appoint himself or any other LGA health department staff to head the LGA QI committee.

b. Financial

The head of Health at the LGA shall provide resources (Financial and Logistics) for the activities of the committee to ensure that it remains functional.

The HOD health shall ensure that QI activities are included in the LGA work-plan and budgeted for in the annual budget.

c. Technical

Each LGA QI team member shall be trained in QI principles and methodology in order to possess the required capacity to carry out supervisory/mentoring of QI activities at facilities in the LGA.

Every trained LGA QI team members shall serve as mentors to hub and facility staff and carry out periodic QI trainings and supervisory/mentoring visits to hubs and facilities in the LGA.

III. State level approach

a. Institution

Composition of state QI team

- Membership of the state Quality team shall include but not limited to representatives from SMoH, SACA, NEPHWAN, LGA coordinating body, HMB, Women & children affairs, Lead IP.

- The SAPC shall appoint himself or a desk officer to head the state QI committee.
- States that have an existing multi-disciplinary team in charge of the HIV programme should leverage on such a team and just ensure that QI is included in their TOR to prevent duplication.

b. Financial

- The SMoH shall provide resources (Financial and Logistics) for the activities of the committee to ensure that it remains functional
- The SASCP should ensure that QI activities are captured in their work-plan and budgeted for in their annual budget.

c. Technical

- Each state QI team member shall be trained in QI principles and methodology in order to possess the required capacity to carry out supervisory/mentoring of QI activities to LGAs and facilities.
- Every trained state QI team member shall serve as a mentor to LGA and facilities staff and carry out periodic QI trainings and supervisory/mentoring visits in his domain.

IV. Federal Level approach

a. Institution

The Federal QI team shall be domiciled in the NASCP/HIV-AIDS division **Composition**

- The Honourable Minister of Health or his appointed designate shall appoint the head of the National QI committee.
- Members shall include representatives of the HIV/AIDS division of FMoH (different unit heads and the QI desk officers in NASCP plus representatives from other parastatals within and outside FMOH). Others include NEPWHAN, Ministry of Women affairs, NAFDAC, SON, NACA and IPs, and Health facilities/research institutions.

b. Financial

- The FMoH and relevant donor agencies (where available) shall provide resources for the activities of the committee to ensure that it remains functional
- NASCP shall ensure that QI activities are budgeted for in its annual budget.

V. Implementing Partners

Composition

Each IP shall have a QI team in charge of its organisation's QI activities

Responsibility

Table 3.1 highlights the responsibilities of the IPs' QI team in addition to the following:

- Shall act as a support to the national QI programme.
- Shall provide logistics, technical, supervisory and capacity building support at all levels
- IPs shall provide additional resources where necessary.

3.3.2 Strategies to Motivate CQI Teams at all Levels

- Appropriate composition and constitution of CQI teams
- Clear Terms of Reference for CQI teams
- Opportunities to showcase CQI team success
- Adequate support for implementation of CQI activities
- Management/institutional support for the TOR
- Appraisal and feedback on team performance
- Continuous capacity building of QI team members on relevant areas.

Table 3.1: Roles and responsibilities of NigeriaQual Stakeholders

	Role Description	Federal	States	LGAs	I.Ps	Facilities
1	Coordination	Coordinate the QI programme through an appropriately constituted team	Coordinate the state QI programme through an appropriately constituted team	Coordinate the LGA QI programme through an appropriately constituted team	Coordinate the IP QI programme through an appropriately constituted team	Coordinate the facility QI programme through an appropriately constituted team
2	Develop and disseminate relevant documents (NigeriaQual Framework, Protocol, Training Document and Guide line	Develop, disseminate and distribute relevant documents that guide the quality improvement programme -	Disseminate relevant documents that guide the quality improvement programme	Disseminate relevant documents that guide the quality improvement programme	Disseminate relevant documents that guide the quality improvement programme	Implement relevant documents that guide the QI programme
3	Stakeholders Engagement	Engage State governments, implementing partners, and consumers. through advocacy and	Engage IPs and consumers through advocacy and sensitization on QI and	Engage implementing partners, and consumers through advocacy and	Engage State governments, implementing partners, and consumers.	Engage consumers through advocacy and sensitization on QI and receive

		sensitization on QI and clearly articulate the expectations for all stakeholders involved	clearly articulate the expectations for all stakeholders involved	sensitization on QI clearly articulate the expectations for all stakeholders involved.	through advocacy and sensitization on QI and clearly articulate the expectations for all stakeholder s involved	feedback.
4	Work Plan Development	Develop national costed work plan to implement the QI programme and embed into existing HIV/AIDS workplan	Develop state costed work plan to implement the QI programme and embed into existing HIV/AIDS work plan	Develop LGA costed work plan to implement the QI programme and embed into existing HIV/AIDS workplan	Develop IP costed work plan to implement the QI programme and embed into existing HIV/AIDS workplan	Develop facility costed work plan to implement the QI programme and embed into existing HIV/AIDS workplan
5	QI Training Plan Development	Develop a national QI training plan	Develop a state QI training plan	Develop a LGA QI training plan	Support State/LGA/F acility to develop QI training plan	Develop a facility QI training plan
6	Capacity building	Build the capacity of relevant stakeholders on QI – (trainings, QI infrastructura l, supervision, etc.)	Build the capacity of relevant stakeholders on QI – (trainings, QI infrastructure, supervision, etc.)	Build the capacity of relevant stakeholders on QI – (trainings, QI infrastructur al, supervision, etc.)	Build the capacity of relevant stakeholder s on QI – (trainings, QI infrastructu ral, supervision, etc.)	Build the capacity of relevant stakeholders on QI – (trainings, QI infrastructur al, supervision, etc.)

7	QI Indicator Development	Develop minimum QI indicators for all stakeholders	Implement minimum QI indicators	Implement minimum QI indicators	Implement minimum QI indicators	Implement minimum QI indicators
8	Performance Measurement	Develop performance measurement strategies: (quality indicators; data collection strategies; standardization of data collection tools)	Implement performance measurement strategies: (quality indicators; data collection strategies; standardization of data collection tools)	Implement performance measurement strategies: (quality indicators; data collection strategies; standardization of data collection tools)	Implement performance measurement strategies: (quality indicators; data collection strategies; standardization of data collection tools)	Implement performance measurement and improvement strategies: (quality indicators; data collection strategies; standardization of data collection tools)
9	Data Reporting Platform	Develop data reporting platform and ensure access to data to all stakeholders	Support the use of data reporting platform and ensure access to data to all stakeholders	Support the use of data reporting platform and ensure access to data to all stakeholders	Support the use of data reporting platform and ensure access to data to all stakeholders	Support the use of data reporting platform and ensure access to data to all stakeholders
10	Use of QI data	Routinely aggregate national data and use the findings to monitor quality of HIV care at all levels	Routinely aggregate state data and use the findings to monitor quality of HIV care at all levels	Routinely aggregate LGA data and use the findings to monitor quality of HIV care at all levels	Routinely aggregate data and use the findings to monitor quality of HIV care at all levels	Routinely collect and report performance data and use these findings to improve HIV care
11	Sharing best practices and lessons learnt	Create opportunities for relevant stakeholders	Support and create opportunities for relevant	Support and create opportunities for relevant	Support and create opportunities for	Share best practices and successful improvement

		to share best practices and successful improvement strategies (review meetings, conferences, task team meetings, exchange visits)	stakeholders to share best practices and successful improvement strategies in the state (review meetings, conferences, task team meetings, exchange visits)	stakeholders to share best practices and successful improvement strategies in the LGA (review meetings, conferences, task team meetings, exchange visits)	relevant stakeholders to share best practices and successful improvement strategies facilities providing HIV/AIDDS services (review meetings, conferences, task team meetings, exchange visits)	strategies (review meetings, conferences, task team meetings, exchange visits)
12	Scaling up of QI activities	Support the expansion of QI to all facilities providing HIV/AIDS services	Support the expansion of QI to all facilities providing HIV/AIDS services in the state	Support the expansion of QI to all facilities providing HIV/AIDS services in the LGA	Support the expansion of QI to all facilities providing HIV/AIDS services in the programme	Support the involvement of all staff in QI activities
13	Sustainability strategies	Identify and support the implementation of strategies that would enhance the sustainability and expansion of QI efforts in the health sector	Identify and support the implementation of strategies that would enhance the sustainability and expansion of QI efforts in the health sector	Support the implementation of strategies that would enhance the sustainability and expansion of QI efforts in the health sector	Identify and support the implementation of strategies that would enhance the sustainability and expansion of QI efforts in the health sector	Identify and support the implementation of strategies that would enhance the sustainability and expansion of QI efforts in the health facility

Explanatory Notes on Roles and Responsibilities of NigeriaQual Stakeholders

1. Coordinate the QI programme such as trainings, meetings, STOC through an appropriately constituted team (Multidisciplinary team)
2. FMoH will develop and disseminate relevant documents such as NigeriaQual Framework, Protocol, Training Document and Guideline that guide the quality improvement programmes to State, LGA, and Implementing Partners. All the relevant documents will be distributed by the state with support from IP to LGA and this will further be distributed to facilities where the implementation takes place.
3. FMoH will engage State governments, Implementing Partners, and consumers through advocacy and sensitization on Quality improvement and clearly articulate the expectations for all stakeholders involved. State government and IPs will be working together in engaging facility and LGA while facility will work directly with consumers and get feedback to improve on the processes.
4. State, LGA, IP and facility will develop costed work plan respectively to implement the QI programme and embed the budget into existing national HIV/AIDS work-plan
5. FMoH will develop a national QI training plan. Facility, State and LGA will also develop their training plan with support from the supporting IP.
6. FMoH will conduct trainings, supervisions, QI infrastructure to build the capacity of relevant stakeholders on QI activities, this training will be stepped down by state with support from IPs partners to LGA and facility.
7. FMoH will develop minimum QI indicators for all stakeholders. State/ IP will help and support the implementation of the QI indicators at the facility
8. FMoH will develop performance measurement strategies: quality indicators, data collection strategies, standardization of data collection tools. Implementation will take place at state/facility level with support from IPs.
9. FMoH will develop data reporting platform and ensure access to data to all stakeholders. All IPs will have access to their data, Facility will have access to their data and also state will have access to all the data within their states. IP, state, LGA and facility will render their support to the data reporting platform developed by FMoH.
10. FMOH shall routinely aggregate national data and use the findings to monitor quality of HIV care at all levels
11. Different levels shall create opportunities for relevant stakeholders to share best practices and successful improvement strategies such as review meetings, conferences, task team meetings, exchange visits
12. States shall support the expansion of QI to all facilities providing HIV/AIDS services
13. FMOH with support of other levels shall identify and support the implementation of strategies that would enhance the sustainability and expansion of QI efforts in the health sector

3.4 Expansion Strategy

Hub-Spoke approach
This Promotes "Cluster" models for Decentralization and Health Systems integration. In addition it:

- Support retention in care
- Expand capacity for cost-effective treatment access
- Strengthen PHCs by developing state QM programs and infrastructure that empowers incremental capacity building of PHC staff that supports transition of care and treatment to the PHC level

Hub-Spoke-Cluster model for decentralization

- Hubs are oversubscribed but stronger clinical, lab other infrastructure
- PHCs have fewer resources but proximity and community linkage to clients for service access and retention in care
- Decentralization links oversubscribed Hub sites to PHCs
- Hub-Spoke-Cluster model for integrated service delivery
    - Capacity building of spokes for service delivery

- Hub-Spoke-Cluster model for State CQI implementation
    - Engage "Network QI Teams" comprised of representatives from hub and spokes
    - Engage QI coaches within networks for mentoring

The FMoH ART hub-spoke model already in existence in the states shall be adapted for the NigeriaQual expansion strategy.

Expansion to 36 + 1 States

Targets

- To reach all states in 3 years (from 2013) and by the 4th year to ensure that the CQI culture has been imbibed in the states.
- FMoH, NAHSS and other partners shall train the states on NigeriaQual. Each state team that is trained shall conduct step-down training in their respective states within 6 weeks of conclusion of training.

Strategy for reaching the state involves

- The FMoH and partners including NAHSS shall sensitize key officials of states in order to get state buy-in.
- ToT CQI Training of state officials (SAPC, M&E, Logistics officer who should be a Pharmacist) and Lead IP officials.

- Form and train state CQI teams with support from the SMoH and where the state cannot fund this, the Lead IP can support.
- State officials to liaise with Lead IP to train the facilities in the state.
  - Training the LGA QI teams and hubs first
  - Utilize the trained pool of LGA and hub staff to train spoke staff

Hubs shall constitute CQI team constituting reps from spokes

Targets

- Every quarter the state shall train a number of LGA and hubs
- Every quarter, the LGA and hub shall train a number of spoke facilities.

Strategies for integrating NigeriaQual into country systems

State processes

- Advocacy to policy makers and key officials of the state to take ownership of the programme and drive it
- Leverage on existing structures and processes in the state to carry out QI activities
- Utilize already existing state mentoring and monitoring teams and committees to supervise facilities
- Leverage on the various for a including the National council of Health meetings to showcase and emphasize the importance and benefits of NigeriaQual. This is to facilitate the incorporation of NigeriaQual activities into health processes within the state.
- Leverage on Quarterly meeting of comprehensive facility coordinators where it exist or any other high level state review meetings at the SMoH to show case the benefits of QI.
- There shall be an annual state review meeting to showcase the gains of QI activities in the HIV programme in the state. This activity shall be funded by the SMoH with support from the IP.
- Incorporate QI activities into the State Strategic Plan

Facility processes

- Advocacy to facility key officials and policy makers to take ownership of the programme and support it
- Leverage on existing structures and processes in the facility e.g. utilize Servicom where it exists to carry out
- Utilise already existing facility teams to facilitate QI activities in the facility
- Leverage on facility review meetings to showcase the importance and benefits of QI activities at the facility
- Incorporate QI activities into each facility's annual work-plan
- Integrate QI processes into other disease programmes e.g. Tuberculosis, Immunisation, Reproductive Health etc. at the facility

3.5 SWOT Analysis on Establishment of NigeriaQual

A SWOT analysis to determine the feasibility of integrating NigeriaQual into state processes revealed the following findings:

Strengths	Weakness	Opportunity	Threat
• Leveraging on existing structures • QI teams are multi-disciplinary and can easily get the buy in of different programme areas • QI team members are skilled to deliver	• Poor political commitment • Work over-load • Inequitable distribution of manpower	• Technical assistance from IPs • Training staff • Improving existing Infrastructure	• Government – bureaucracy • Territorialism • Staff attrition: frequent change in management • Inadequate release of funds for health activities • Poor documentation • Work interruption by industrial disharmony

3.6 NigeriaQual Programme Focus

NigeriaQual would focus on all service delivery component namely: ART treatment and care for adult and children; PMTCT, Facility audit – programme, financial and logistics management; HCT, M&E, Laboratory, OVC, SRH HBC and consumer satisfaction. All technical areas are, however, not well developed as of yet. National tools, indicators and methods have been defined for ART treatment and care for adult and Pediatric; PMTCT, Facility audit - Organizational, financial, and logistics management. The other components are expected to be developed in the future. Section four discusses details on the developed components.

While the focus of NigeriaQual is HIV at present, it is highly recommended that other health service areas incorporate NigeriaQual in their activities. See stretch goals under section three.

3.7 Work Plan Implementation:

A technical working group (QI Task team) under the leadership of the FMoH was established with representatives from the HIV/AIDS Division, USG, NAHSS, NACA, HealthQual International and key Implementing Partners. The primary goal of this committee is to make key decisions to effectively implement the NigeriaQual.

The roadmap of NigeriaQual for the first 2 years includes:

- Establishment of Task Committee
- Indicator development, definition and Update
- Mapping and Review of Harmonized Data Tools
- Training of Trainers
- Development of Coaching/Training Plan

- Conducting Facility Visits to State and IPs
- Selection of State and Facilities for Implementation
- Formation of a State QI Team
- Initial Training of QI Coaches
- Bi annual data collection cycles
- Facility Visits to Selected States and Facilities
- First Data Benchmarking Report
- Development of an Expanded Selection of Facilities and States
- Second Data Benchmarking Report

To kick start implementation, the following decisions were adopted for the programme:

- There will be 2 data collection cycles in each year, one in January and July
- The indicator set will focus on the following domains: adult care, pediatric care, PMTCT, HCT, logistics, financial and organizational management.
- All IPs are encouraged to involve all supported eligible facilities in data collection cycles.
- Data collection tools and a database for reporting the performance data needs to be developed with considerations for EMR and Non EMR facilities; integration into existing data systems is strongly encouraged.
- Policy documents for the National Quality improvement Programme will be developed.
- A national quality improvement committee was formed and will meet regularly
- Strategies on how to engage states in the National Quality Improvement Programme were developed and implemented; lead IPs played an important role.
- A forum was initiated to allow IPs to share their strategies to implement the National Quality Improvement Framework.

Evaluation:

In tandem with HIV providers and consumers, the national QI committee works collaboratively throughout the year and conduct a year-end evaluation. An assessment tool that has been developed by HealthQual for the national quality programmes is used to assess the effectiveness of its programme and the overall success of the annually established quality improvement goals. The NQI committee reviews the evaluation findings and recommends a plan for improvement, allowing learning from past performances and integration into future quality improvement plans.

Section 4

National Quality Improvement Measurement and Metrics

4.0 Introduction

This section focuses on the procedures for the performance measurement and evaluation. It covers the following:

i. Implementation teams
ii. Methods and Materials for evaluation
    a. Performance indicators and definitions
    b. Sampling techniques
    c. Performance data collection processes
iii. Data Analysis, interpretation, sharing, dissemination and information use (NigeriaQual data use policy)

4.1 Implementation Teams

Four levels of teams will be involved in the implementation of the evaluations, namely facility-based, IP, state, and national QI teams. All teams will be multidisciplinary to reflect the various thematic areas that services are provided. Teams will be adequately trained to iteratively identify quality shortfalls in programme implementation and service delivery, brainstorm for root causes of the problems identified, test and evaluate improvement initiatives/small tests of change (STOCs) to fill the gaps using the PDSA (Plan-Do-Study-Act) principles. Facility QI teams will be responsible for chart abstractions. The facility QI team will develop a work plan for abstractions within the specified time period. IP QI teams will also provide technical and logistics support to facilities before and during evaluations as well as technical support and guidance to states and facilities for the utilization of evaluation reports for QI purposes. State QI teams will work with lead IP QI teams to coordinate and supervise evaluations within each State. State QI teams will collate reports of evaluations within the state for the purpose of state QI activities and further implementation of QI in HIV treatment facilities. See Table 3.1 for stakeholder roles on performance measurement, data reporting and use of QI data

4.2 Methods and Materials

Facility and Patient Populations

Facilities: All facilities that have provided HIV/AIDS care and treatment services for at least one year prior to the beginning of the review period will be eligible for participation in each NigeriaQual performance measurement cycle.

Patient populations: Adults, children and pregnant women who are HIV positive will be included in the evaluations. Patient eligibility for inclusion in the evaluations will vary for the Adult, Pediatric and PMTCT audits. The sampling methods and eligibility criteria are described in more detail in Section 4.2.2.

Gender: There will be no gender consideration as data abstraction will involve all folders that tally with any randomly selected patient identifier number. It is expected that the sample size that is randomly generated will approximate the true male: female ratios in each participating facility.

Age: Data will be abstracted for patients aged 15 years and above for the adult audit and below 15 years for the pediatric audit.

4.2.2 Design and Procedure

NigeriaQual is a biannual retrospective program evaluation that measures the quality of care (QoC) in a 6-month review period. The data collection for performance measurement will be happen biannually (every January and July). The January exercise reviews the QoC provided between July and December of the previous year. The July exercise reviews the QoC provided between January and June of the same year.

The duration of NigeriaQual evaluations at facilities from abstraction /extraction of data to submission of reports will span approximately 6 weeks.
The activities that constitute implementation of the evaluation exercise are broadly categorized into three:

i. Pre-implementation activities
ii. Data collection for core indicators
iii. Data transmission and Reporting

Pre-implementation activities will occur at the National, State and Implementing Partner levels. These will happen before the evaluation's abstraction /extraction date for each biannual period.

- At the National level, pre-implementation will involve;
  - ✓ Planning and relevant stakeholder engagement

- ✓ Notification of IPs
- ✓ Review of data abstraction tools, protocols, database and training materials (as may be necessary)
- ✓ Training updates (as may be necessary)

- At the State and IP levels, pre-implementation will involve;
  - ✓ Planning and internal stakeholder engagement
  - ✓ Facility notification
  - ✓ Facility preparation
  - ✓ Computer availability
  - ✓ Facility CQI team validation and reconstitution where applicable
  - ✓ State/IP-level data collection refresher trainings of facility teams
  - ✓ Supporting facilities to generate RNLs

- At facility level, pre-implementation will involve:
  - ✓ Advocacy to facility leadership
  - ✓ Step down training to facility QI teams
  - ✓ Development of work plan with clearly communicated targets and timelines for the exercise
  - ✓ Hardware and software servicing
  - ✓ Generation of RNLs

4.2.2.1 Components of NigeriaQual performance evaluation/measurement

The performance evaluation has 4 major components at present:

a. Adult Quality of Care Audit
b. Pediatric Quality of Care Audit
c. PMTCT Quality of Care Audit
d. A Patient Satisfaction Survey
e. Facility Audit comprising of:
   - o Organizational Management Audit
   - o Financial Management Audit
   - o Logistics Management Audit

Each of these audits is described in detail below under the following sub-headings:

- ➢ Overview of the Audit type
- ➢ Inclusion and Exclusion criteria
- ➢ Sampling Strategy and Sample size
- ➢ General Observations on Methodology
- ➢ Indicators

4.2.2.2 The Adult Quality of Care Audit

Overview

This evaluates the quality of HIV care and treatment provided to patients aged 15 years or more, enrolled in HIV/AIDS care and treatment sites in a 6-month review period. The audit uses a tool designed to track selected indicators on the quality of HIV care and treatment services provided to patients aged 15 years and above. It measures site-level specific quality of care indicators and is conducted at HIV/AIDS care and treatment sites that have provided antiretroviral therapy to programme enrollees for at least one year. Sampled patients are expected to have fulfilled specified criteria. Trained hospital staff at facilities providing ART services will abstract the required information using the tool and following specified sampling procedures. Data on pre-defined care and treatment service delivery indicators are collected for a pre-specified review period, usually corresponding to the review period or earlier. These data are abstracted / extracted from the existing patient medical records where clinical information is documented by service providers. Abstracted data would be entered into NigeriaQual software for analysis and report generation. The audit is expected to be conducted biannually.

Inclusion and Exclusion Criteria

Inclusion Criteria

Medical records from the following are eligible for inclusion in the audit:

- Patients who are confirmed HIV seropositive
- Patients who are enrolled in one of the participating facilities before the beginning of the review period
- Patients aged 15 and above with a medical visit 6 months prior to the review period

Exclusion criteria

Medical records from the following are not eligible for inclusion in the audit:

- Patients who died, transferred out or discontinued care with documentation before or during the review period
- Patients on ART who had no drug pick up in the 3 months prior to the review period
- Pre-ART patients with no clinic visit in the last 6 months prior to the review period
- Patients whose folders are lost at the time of the evaluation
- Patients in the antenatal clinic who received PMTCT prophylaxis only
- Patients who are enrolled in one of the participating facilities before the beginning of the review period but had no other clinical visit following

Sampling Strategy and Sample size

The sampling frame for the adult audit consists of all HIV infected patients enrolled in HIV care as at the last day before the review period. For instance, if the 6-month period under review in a given NigeriaQual data collection cycle is January 1st 2013 to June 30th, 2013, then all eligible patients enrolled and active in care as at December 31st, 2012 will be eligible for sampling. Review period dates will differ with each cycle so that trends and improvements over time can

be observed. The sample size for each facility, that is,' the number of patients' medical records to be audited per facility is based on the HIVQUAL 95% confidence interval sampling; an estimation that allows an error margin of 0.8 and a width of 1.6. Using this guide, facilities with 5,000 or above enrollees audit 150 medical folders. See Appendix 8 for HIVQUAL sample size chart.

Sampling method will differ between HIV programmes and will depend largely on the existing medical records systems in use, that is paper or electronic and the capacity of the electronic data base. Four methods are described here and participating facilities will use the sampling method that fits their existing system.

Sampling Method #1: Facilities with electronic databases (which includes patient IDs, up-to-date clinical and other follow up information) for all adult patients may include all eligible patients in their database as opposed to sampling a fraction of them. Data set containing the data elements in the NigeriaQual audit tool will be uploaded to the NigeriaQual software in the required format.

Sampling Method #2: Facilities with electronic listing of ALL patient IDs with incomplete or no follow-up information will electronically generate a sample size based on the HIVQUAL sample size chart. Sampling will be done in 5 steps:

1. Determine total number of eligible patients in the facility (X) e.g. 3000
2. Determine sample size (Y) from the HIVQUAL sample size chart – e.g. 107
3. Multiply sample size (Y) by 2 to make up for missing folders and other exclusions as earlier described - e.g. 214
4. Randomly generate 2Y from the eligible patients list (X) and enter the IDs as presented into a Random Number List (RNL) - e.g. 214
5. Serially review charts using the RNL, excluding patients that meet the exclusion criteria, until you reach the sample size (Y) – e.g. 107

NOTE: In the event that total eligible adult case load in a facility (X) is less than 2 times the required sample size (2Y), such facility should randomize the entire IDs and apply the serial review (step 5)

Sampling Method #3: Facilities with no existing electronic databases but have a serial record or line listing of patients who attend clinic on a daily basis (E.g. daily clinic appointment registers, clinic attendance registers, daily listing of IDs of patient charts/folders pulled or filed by medical records on a daily basis etc.) should manually generate sample size from such records based on the HIVQUAL sampling methodology. Sampling will be done in these steps:

1. Determine the number of unique patients (include pre-ART and ART patients) with a clinic visit in the last 6 months prior to the review period (X) – e.g. 3000
2. Determine sample size (Y) from the HIVQUAL sample size chart based on X – e.g. 107

3. Multiply the sample size (Y) by 2 to make up for missing folders and other exclusions as earlier described – e.g. 214
4. Divide X by 2 times the HIVQUAL sample size (2Y) to obtain sampling interval. Approximate X/2Y to the nearest whole number N – e.g. 3000÷214 = 14.02 ~ 14
5. Select every Nth client ID – that is every 14th client ID - and enter the patients' IDs in an excel spreadsheet - e.g. 214
6. Randomize the IDs to obtain a RNL - e.g. less than or = 214
7. Serially review charts from the RNL, exclude patients that meet the exclusion criteria, until you reach the number of Y – e.g. 107

Sampling Method #4: Facilities which have no electronic databases and no serial record/line listing of patients who attend clinic on a daily basis, will manually generate sample size from enrolment or pre-ART registers based on the HIVQUAL sample size chart. Pre-ART and/or enrolment registers contain the ID listing of all patients ever enrolled in a facility regardless of their current ART status

1. Determine the number of patients ever enrolled at the facility as at the last day prior to the review period (X) – e.g. 3000
2. Determine sample size (Y) from the HIVQUAL sample size determination table based on X – e.g. 107
3. Multiply the sample size (Y) by 3 to make up for missing folders and other exclusions as earlier described – e.g. 321
4. Divide X by 3 times the HIVQUAL sample size (3Y) to obtain sampling interval. Approximate X/3Y to the nearest whole number N – e.g. 3000/321 = 9.3 ~ 9
5. Select every Nth client ID - e.g. every 9th client ID - and enter the patients' IDs in an excel spreadsheet - e.g. 321
6. Randomize the IDs to obtain a RNL - e.g. less than or 321
7. Serially review charts from the RNL, exclude patients that meet the exclusion criteria, until you reach the number of Y – e.g. 107

Example: As at the beginning of the January – June 2013 NigeriaQual review period, St. Jude's Hospital had 3000 HIV-infected adult patients ever enrolled. Going by the HIVQUAL Sample Size Chart, this facility needs to audit 146 adult folders. To determine the number of patients that will be on the facility RNL, the QI Team at St. Jude's hospital will multiply 146 by 3 i.e. (146 x 3 = 438). The next step is to divide the number ever enrolled (3000) by 438. This will give 6.85 (approximated to 7); therefore the sampling will be in intervals of 7. The Facility Team will choose any number between1-7 to begin sampling from. If for example 5 is chosen, the facility begins with the 5th record and selects for recording on the RNL every 7th ID following (5, 12, 19, 26… etc.) in an electronic format. At the end of this systematic randomization process, this facility will have approximately 438 patient IDs. To generate the RNL, the 438 patient IDs will be randomized (shuffled) electronically using Excel to allow early and later enrollees' equal opportunity to be audited. Chart abstraction will begin serially with the 1st ID on the RNL

excluding any pre-ART patient with no clinic visits between July – December 2012; and ART patients with no clinic visits between October – December 2012. Other exclusion criteria will also apply. Chart abstraction will continue serially until 146 patient folders have been successfully audited.

General Observations on Methodology

Random enrolment numbers are entered on a document called the "Random Number List" (RNL) see appendix 7 for sample. The RNL is an important tool in this performance evaluation exercise and must be prepared and available to all members of the facility QI team at the participating facilities at the beginning of the audit. The RNL for each participating treatment facility is generated from patient IDs preferably at the facility level. The RNL has the IDs or patient enrolment numbers of all patients sampled and other important columns. These columns are for patient hospital registration numbers, folder audit status (audited or not audited), reason for exclusion (missing folder, dead, transferred or discontinued care before review period, PMTCT, PEP). The number of patient IDs on the RNL may be up to 1 – 3 times the sample size number required for audit, depending on the sampling methodology adopted by the facility, to allow for missing patient folders and folders that will be excluded for various reasons. Facility teams will audit adult folders corresponding to IDs on the RNL in a serial manner, excluding only folders that are confirmed missing or meet the criteria for exclusion. Reasons for exclusion of any folder must be documented on the RNL in accordance with guidelines for completing the RNL. The proportion of missing folders will also be a performance indicator of facility medical records' effectiveness. Facility teams are not allowed to "cherry-pick" folders and emphasis is placed on serial audit of the patient IDs on the RNL.

The mode of data abstraction and entry will depend on the type of medical records systems.in use. For facilities with paper records, data may be abstracted from patient folders unto the Adult Audit tool and subsequently data is entered from the tools into the software for analysis. Facilities with multiple electronic data entry platforms (e.g. desktops, laptops), may enter data directly from patient records into the software. Facilities with electronic medical records systems may generate the required dataset and import directly into the software.For facilities using a sampling method according to the HIVQUAL Sample Size Chart, the highest possible number of folders to be audited is 150. For such facilities that will audit this maximum, a team of 4 persons will audit approximately 38 folders each. At an audit rate of 2 folders/hour, a team working 4 hours/day will complete the exercise in less than 5 days. Abstracted data will be entered into the NigeriaQual software. Regardless of the method employed, it is strongly recommended that data abstraction/entry be done as a team.

The adult audit tool to be used for data abstraction is designed to collect information on the eight indicators. The tool also collects other information on indicators hitherto tracked by various IPs. Patient demographic and other baseline clinical and laboratory information that would allow for secondary analysis related to quality of patient care, programme implementation and patient outcomes are also collected. See appendix 1 for adult audit tool.

Adult Quality of Care Indicators:

The eight core quality of care indicators tracked in the adult audit is presented in Table 4.1.

Table 4.1: NigeriaQual Adult Audit Tool

Adult	
Indicator I	**Proportion of eligible patients placed on ART within the review period**
Type of Indicator	Adult ART
Numerator	Number of non-ART patients with CD4+ count < 350 or WHO stage 3 or 4 or TB within the review period who initiated ART
Denominator	Number of non-ART patients with CD4 count < 350 or WHO stage 3 or 4 or TB during the 6-month review period
Disaggregation	NONE
Purpose	To determine the number of patients with CD4 count less than 350 that are placed on treatment so as to reduce high risk of opportunistic infections such as TB, liver diseases, renal failure as well as transmission of the infection and early death.
Applicability	This applies to all Facilities with the capacity to provide HIV care and treatment.
Data collection frequency	Every Six Months
Measurement tool	Adult Audit form
Method of measurement	
Interpretation	
Additional Information	
Indicator II	**Proportion of Pre-ART patients whose first visit within the review period is less than or equal to 6 months after their last visit**
Type of Indicator	Adult ART
Numerator	Number of Pre-ART patients with at least one clinic visit in the 6 months of the review period. Exclusion: documentation of transferred out patients, known deaths and documented discontinued care
Denominator	Number of Pre-ART patients with at least one clinical visit in the 6 months prior to the review period
Disaggregation	NONE
Purpose	This determines when the patient will be eligible to be placed on ART. This includes monitoring their CD4 count and any infections that require treatment before they are placed on ART.
Applicability	This applies to all facilities that have the capacity to register new patients and prepare them for treatment
Data collection frequency	Every 6months
Measurement tool	

Method of measurement	
Interpretation	
Additional Information	
Indicator III	**Percentage of ART patients who had at least one documented adherence assessment during the last three months**
Type of Indicator	Adult ART
Numerator	Number of ART patients who had a drug pick up or clinical visit and had a documented adherence assessment during the last 3 months of the 6-month review period
Denominator	Number of ART patients who had a drug pick up or clinical visit in the last 3 months of the 6-month review period
Disaggregation	NONE
Purpose	Assessing patient adherence is a crucial aspect of HIV care and treatment as a lapse in adherence could result in resistance to the regimen. As such, facilities need to constantly monitor patient adherence and beyond monitoring, documentation is also important as it is a quality pointer towards the efficiency of the facility.
Applicability	This applies to all facilities that have the capacity to register new patients, prepare them for treatment and administer ART
Data collection frequency	Every 6months
Measurement tool	Adult Audit form
Method of measurement	
Interpretation	
Additional Information	
Indicator IV	**Proportion of HIV patients with at least one clinic visit in the review period who were clinically screened for TB**
Type of Indicator	Adult ART
Numerator	Number of HIV patients with at least one clinical visit during the 6-month review period who were screened for clinical symptoms (cough, fever, night sweats and weight loss)
Denominator	Number of HIV patients with at least one clinical visit during the 6-month review period. Exclusion: patients on TB treatment
Disaggregation	NONE
Purpose	Since TB is a major HIV opportunistic infection, HIV patients with TB are prone to dying faster, as such it is important that all HIV patients are clinically screened for TB. It is recommended that at clinician's discretion, patients with symptoms are clinically screened. This quality indicator seeks to monitor the percentage of this screening carried out in a facility.
Applicability	This applies to all facilities that have the capacity to provide HIV care and treatment.

Data collection frequency	Every 6 months
Measurement tool	Adult Audit Form
Method of measurement	
Interpretation	
Additional Information	
Additional Information	
Indicator V	**Proportion of HIV patients diagnosed with TB who initiated TB treatment.**
Type of Indicator	Adult ART
Numerator	Number of HIV patients diagnosed with TB during the 6-month review period who were initiated on TB treatment within one month of TB diagnosis
Denominator	Number of HIV patients diagnosed with TB during the 6-month review period
Disaggregation	NONE
Purpose	TB is one of the major opportunistic infections and without treatment could result in a quicker death of patients, as such it is recommended that as soon as it is diagnosed, patients are placed on treatment. This indicator measures the efficiency of facilities in ensuring that patients are placed on treatment within one month of diagnoses.
Applicability	This applies to all facilities that have the capacity to provide HIV care and treatment.
Data collection frequency	Every 6months
Measurement tool	Adult ART Audit form
Method of measurement	
Interpretation	
Additional Information	
Indicator VI	
Type of Indicator	Adult ART
Numerator	Number of HIV patients with at least one clinical visit during the 6-month review period who have a documented CD4 count
Denominator	Number of HIV patients with at least one clinical visit during the 6-month review period
Disaggregation	NONE
Purpose	The CD4 count of a HIV positive patient is very important in treatment of the patient. It is the primary variable used in monitoring progress of the ARTs in patient treatment. It is recommended that patients should have their CD4 count measured and results collected. This indicator seeks to measure the percentage of patients that actually received results of their CD4 test carried out.
Applicability	This applies to all facilities that have the capacity to provide

	HIV care and treatment.
Data collection frequency	Every 6months
Measurement tool	Adult ART Audit form
Method of measurement	
Interpretation	
Additional Information	
Indicator VII	**Percentage of ART patients with at least one clinical visit within the last 6 months that have all the relevant laboratory tests conducted**
Type of Indicator	Adult ART
Numerator	Number of ART patients with at least one clinical visit during the 6-month review period who had all of the following lab tests: Creatinine, Haematocrits/Haemoglobin, ALT
Denominator	Number of ART patients with at least one clinical visit during the 6-month review period
Disaggregation	NONE
Purpose	Just like the CD4 count, laboratory tests like Creatinine, PCV and ALT are also crucial in monitoring patients. It is recommended that clinicians regularly order these tests. This indicator measures the percentage of those tests ordered in each facility.
Applicability	This applies to all NigeriaQual participating facilities that have the capacity to provide HIV care and treatment.
Data collection frequency	Every 6 months
Measurement tool	Adult Audit form
Method of measurement	
Interpretation	
Additional Information	
Indicator VIII	**Proportion of patients with at least one CD4 count <350 cells or confirmed TB in the past 6 months that received CPT**
Type of Indicator	Adult ART
Numerator	Number of HIV patients with at least one CD4 count < 350 cells or confirmed TB during the 6-month review period who are on CPT
Denominator	Number of HIV patients with at least one CD4 count < 350 cells or confirmed TB during the 6-month review period
Disaggregation	NONE
Purpose	HIV patients suspected or confirmed to have TB need immediate treatment for TB. Such patients are those with a CD4 count <350 or confirmed through clinical screening. This indicator measures the efficiency of the facility in tracking patients and ensuring that patients receive the required treatment for TB.

Applicability	This applies to all facilities with the capacity to provide HIV care and treatment.
Data collection frequency	Every 6 months
Measurement tool	Adult Audit form
Method of measurement	
Interpretation	
Additional Information	

4.2.2.3 The Pediatric Quality of Care Audit

a) Overview

This evaluates the quality of HIV Care and treatment provided to patients aged less than 15 years in HIV/AIDS care and treatment sites in a 6-month review period. It measures site-level specific quality of care indicators and are conducted at HIV/AIDS care and treatment sites that have provided antiretroviral therapy to program enrollees for at least one year. Data on pre-defined care and treatment service delivery indicators are collected for a pre-specified review period, usually corresponding to the review period or earlier. These data are abstracted from the pre-existing patient medical record where clinical information is documented by service providers.

b) Inclusion and Exclusion criteria

Inclusion Criteria

Medical records from the following are eligible for inclusion in audit:

- Infants and children aged less than 15 years at the beginning of the review period
- Infants and children who are confirmed HIV positive (Quality of care for HIV exposed babies will be evaluated in the PMTCT audit)
- Infants and children must have been born before the beginning of the review period
- Infants and children must be enrolled in one of the participating facilities

Exclusion criteria

- Medical records from the following are not eligible for inclusion in the audit
- Children who died, transferred out or discontinued care with documentation before or during the start of the review period
- Children who were established as lost to follow up at the beginning of the review period
- Children with no clinic visit in the last 6 months prior to the review period
- Children whose folders are lost or misplaced at the time of the evaluation

c) Sampling Strategy and Sample size

The sampling frame for the pediatric audit consists of all infants and children enrolled in care up until the last date before the review period. For instance, if the 6-month period under review in a given data collection cycle is January 1st 2013 to June 30th 2013, then all eligible infants and

children enrolled and active in care as at December 31st 2012 will be eligible for sampling. Review period will differ with each cycle so that trends and improvements over time can be observed. The pediatric sample size for each facility, that is, the number of pediatric clients' medical records to be audited, is based on the HIVQUAL 95% Confidence Interval sampling guidelines – an estimation that allows an error margin of 0.8 and a width of 1.6. Using this guide, facilities with 5,000 children or more will audit 150 medical records See appendix 8 for the HIVQUAL Sample Size Chart. Sampling method will also differ between HIV programmes and facilities and will depend largely on the existing medical records systems. Four methods are described here and participating facilities will use the sampling methodology that fits their existing system.

Sampling Method #1: Facilities with electronic databases (which includes patient IDs, up-to-date clinical and other follow up information) for pediatric patients may include all eligible patients in their database as opposed to sampling a fraction of them. Data set containing the data elements in the audit tool will be uploaded to the NigeriaQual software in the required format.

Sampling Method #2: Facilities with electronic listing of ALL patient IDs with incomplete or no follow-up information will electronically generate a sample size based on the HIVQUAL sampling methodology. Sampling will be done following the 5 steps listed below:

1. Determine total number of eligible patients in the facility (X) e.g. 3000
2. Determine sample size (Y) from the HIVQUAL sample size chart – e.g. 107
3. Multiply sample size (Y) by 2 to make up for missing folders and other exclusions as earlier described - e.g. 214
4. Randomly generate 2Y from the eligible patients list (X) and enter the IDs as presented into the Random Number List - e.g. 214
5. Serially review charts, excluding patients that meet the exclusion criteria, until you reach the sample size Y – e.g. 107

Note: In the event that total pediatric case load in a facility (X) is less than 2 times the required sample size (2Y), such facility should randomize the entire IDs and apply the serial review (i.e. step 5)

Sampling Method #3: Facilities with no electronic databases, but which have a serial record or line listing of children who attend clinic on a daily basis (E.g. daily clinic appointment registers, clinic attendance registers, daily listing of IDs of patient charts/folders pulled or filed by medical records on a daily basis, etc.) will manually generate sample size from such records based on the HIVQUAL sample size chart (see appendix 8) . Sampling will be done in these steps:

1. Determine the number of unique patients (include pre-ART and ART patients) with a clinic visit in the last 6 months prior to the review period (X) – e.g. 3000
2. Determine sample size (Y) from the HIVQUAL sample size chart based on X – e.g. 107
3. Multiply the sample size (Y) by 2 to make up for missing folders and other exclusions as earlier described – e.g. 214

4. Divide X by 2 times the HIVQUAL sample size (2Y) to obtain sampling interval. Approximate X/2Y to the nearest whole number N – e.g. 3000÷214 = 14.02 ~ 14
5. Select every Nth client ID - e.g. every 14th client ID - and enter the patients' IDs in an excel spreadsheet - e.g. 214
6. Remove duplicates and randomize the IDs to obtain a RNL - e.g. less than or = 214
7. Serially review charts, exclude patients that meet the exclusion criteria, until you reach the number of Y – e.g. 107

Note: In the event that total pediatric case load in a facility (X) is less than 2 times the required sample size (2Y), such facility should randomize the entire IDs and apply the serial review.

Sampling Method #4: Facilities with no electronic databases for pediatric clients and no serial records or line listing of infants and children who attend clinic on a daily basis, will manually generate a sample size for the pediatric audit from their enrolment registers or pre-ART registers based on the HIVQUAL sample size chart. The pre-ART and/or enrolment registers contain the ID listing of all patients ever enrolled in a facility regardless of their current ART status. For facilities that have separate Pre-ART registers for their pediatric clients, such sampling will be done separately. However, facilities that combine adults and children in the same pre-ART or enrolment registers will manually count and generate a line listing of pediatric clients ever enrolled from existing Pre-ART registers. For such facilities, sampling will be done from those serial records in 6 steps;

1. Determine the number of children ever enrolled at the facility as at the last day prior to the review period (X) – e.g. 3000
2. Determine sample size (Y) from the HIVQUAL sample size chart based on X – e.g. 107
3. Multiply the sample size (Y) by 3 to make up for missing folders and other exclusions as described before – e.g. 321
4. Divide X by 3 times the HIVQUAL sample size (3*Y) to obtain sampling interval. Approximate X/3*Y to the nearest whole number N – e.g. 3000/321 = 9.3 ~ 9
5. Identify every Nth client ID - e.g. every 9th client ID - and enter the pediatric IDs in an excel spreadsheet - e.g. 321
6. Randomize the IDs to obtain a RNL and serially review charts, excluding children that meet the exclusion criteria, until you reach the number of Y – e.g. 107

d) General Observations on Methodology

Random enrolment numbers corresponding to 2 – 3 times the required sample size for the pediatric evaluations (depending on the Sampling methodology adopted by the facility) are entered on the "pediatric Random Number List". The pRNL is a very important tool in this quality evaluation exercise and must be prepared and available to all members of the facility CQI team at the participating facilities at the beginning of the audit. Facility teams will audit pediatric folders corresponding to IDs on the pRNL in a serial manner, excluding only folders that are confirmed missing. Reasons for exclusion of any folder must be documented on the pRNL in accordance

with guidelines for completing the pRNL. The proportion of missing folders will also be a performance indicator of facility medical records effectiveness. Facility teams are not allowed to "cherry-pick" folders and emphasis is placed on serial audit of the pediatric patient IDs on the pRNL.

The mode of data abstraction and entry will depend on medical records system in use. Data may be abstracted from patient folders unto the pediatric audit tools. Subsequently data is entered from the tools into the NigeriaQual software. Facilities with multiple electronic data entry platforms (e.g. desktops, laptops), may enter data directly from patient records into the software.

Facilities with electronic medical records systems may generate the required dataset and import directly into the software. For facilities using a sampling method according to the HIVQUAL Sample Size Chart, the highest possible number of folders to be audited is 150. For such facilities that will audit this maximum, a team of 4 persons will audit approximately 38 folders each. At an audit rate of 2 folders/hour, a team working 4 hours/day should complete the exercise in less than 5 days. Abstracted data will be entered into the NigeriaQual software. Regardless of the method employed, it is strongly recommended that data abstraction/entry be done as a team.

e) Pediatric Quality of Care Indicators

Five core quality of care indicators are tracked in the pediatric audit. See Table 4.2

The pediatric abstraction tool as provided in appendix 2 is designed to collect the 5 indicators, however, the tool also collects other relevant indicators tracked by various IPs. The tool also captures patient demographic and other baseline clinical and laboratory information that would allow for secondary analysis related to Quality of patient care, programme implementation and patient outcomes.

Table 4.2: NigeriaQual Peadratic Indicators

NigeriaQual Peadratic Indicators	
Indicator I, II and III	Proportion of HIV infected children commenced on ART in the past six months
Type of Indicator	Pediatric
Numerator	Number of HIV infected children 0-23 months started on ART during the 6-month review period
Denominator	Number of HIV infected; children 0-18 months with positive DNA PCR OR children 18-23 months of age with positive rapid test OR children 0-23 months of age with presumptive clinical diagnosis during the 6-month review period
Disaggregation	0-23 months, 24-59 months, 5- <15 years
Purpose	It is important to place HIV positive children on ART as soon as it is diagnosed in order to prevent the virus from progressing to AIDS.
Applicability	This applies to all NigeriaQual participating facilities with the capacity to provide HIV care and treatment to pediatric patients.
Data collection frequency	6 months
Measurement tool	Pediatric Audit tool
Method of measurement	
Interpretation	
Additional Information	
Indicator IV	Proportion of HIV infected children < 15 years on ART with a visit in the last 3 months who have had at least one adherence assessment
Type of Indicator	Pediatric
Numerator	Number of HIV infected children < 15 year on ART with at least one clinical visit in the last 3 months of the 6-month review period who have had at least one documented adherence assessment
Denominator	Number of HIV infected children < 15 years on ART with at least one clinical visit in the last 3 months of the 6-month review period
Disaggregation	None
Purpose	Assessing patient adherence is a crucial aspect of HIV care and treatment as a lapse in adherence could result in resistance to the regimen. As such, facilities

	need to constantly monitor patient adherence and beyond monitoring, documentation is also important as it is a quality pointer towards the efficiency of the facility.
Applicability	This applies to all NigeriaQual participatory facilities with the capacity to provide pediatric care and treatment
Data collection frequency	6 months
Measurement tool	Pediatric Audit tool
Method of measurement	
Interpretation	
Additional Information	
Indicator V	Proportion of HIV positive children < 15 years who have had at least one clinical visit in the last 3 months
Type of Indicator	Pediatric
Numerator	Number of HIV positive children < 15 years of age currently enrolled in care at the beginning of the review period who had at least one clinical visit in the last 3 months of the review period Exclusion: documentation of transferred out patients, known deaths and documented discontinued care
Denominator	Number of HIV positive children < 15 years of age currently enrolled in care at the beginning of the review period
Disaggregation	None
Purpose	The essence is to track the frequency of clinical visits of the pediatric patients. It is important that these patients show up for clinical visits so they can be properly monitored laboratory and appropriate CD4 count carried out.
Applicability	This applies to all NigeriaQual participating facilities with the capacity to provide pediatric care.
Data collection frequency	6 months
Measurement tool	Pediatric Audit tool
Method of measurement	
Interpretation	
Additional Information	

4.2.2.4 The PMTCT Quality of Care audit

a) Overview

The audit tracks quality of care provided to HIV positive pregnant women for preventing transmission of the virus to their unborn children and the exposed children for the first 2 years of life. The quality of ANC care provided to these women in the pre-natal and peri-natal period will be assessed; and the quality of care provided to the exposed infants as well as the 18-month outcomes of infants born to HIV+ve women. Sampled patients (women and infants) are expected to have fulfilled specified criteria. Trained hospital staff at facilities providing PMTCT services are expected to abstract the required information using the tool and following specified sampling procedures. Abstracted data would be entered into the software for analysis and report generation. The audit is expected to be conducted biannually. Details on the methodology are discussed below.

Women to be included in the audit will be in 4 categories:

i. Booked HIV+ve pregnant women who received Ante Natal Care in the 6 months prior to the beginning of the review period
ii. Unbooked HIV+ve pregnant women who delivered at the facility in the 6 months prior to the beginning of the review period
iii. All deliveries by HIV+ve pregnant women (booked and un-booked) during the 6 months of the review period
iv. HIV+ve pregnant women who delivered in the facility 12 – 18 months prior to the beginning of the review period (This 3rd category will be only utilized for the indicator that describes the outcomes at 18 months, of babies born to HIV positive women in the facility)

b) Inclusion and Exclusion criteria

Inclusion Criteria

- Medical records from the following are eligible for inclusion in the audit.
- HIV positive women who were identified in ANC in the 6 months prior to the beginning of the review period (This includes women with previously known HIV status)
- Un-booked HIV positive women who delivered in the facility in the 6 months prior to the beginning of the review period.
- ALL (Booked and Un-booked) HIV positive women who delivered in the facility 12 – 18 months prior to the beginning of the review period (This 3rd category will be only utilized for the indicator that describes the outcomes at 18 months, of babies born to HIV positive women in the facility)

Note: Inclusion is regardless of maternal and child outcomes; so include even if mother or child died in the perinatal period

Exclusion criteria

- All Pregnant women who accessed ANC service or delivered at the facility but confirmed HIV sero negative

c) Sampling Strategy and Sample size

The sampling frame for the NigeriaQual PMTCT audit consists of 4 categories of HIV positive pregnant women as specified above; these categories are as follows

i. Booked HIV+ve women who received Ante Natal Care in the 6 months prior to the beginning of the review period (This includes women with previously known HIV status)
ii. Un-booked HIV +ve women who delivered in the facility in the 6 months prior to the beginning of the review period.
iii. ALL (Booked and Un-booked) HIV+ve women who delivered in the facility 12 – 18 months prior to the beginning of the review period:
iv. HIV + ve pregnant women who delivered in the facility 12 – 18 months prior to the beginning of the review period (This 4th category will be only utilized for the indicator that describes the outcomes at 18 months, of babies born to HIV positive women in the facility)

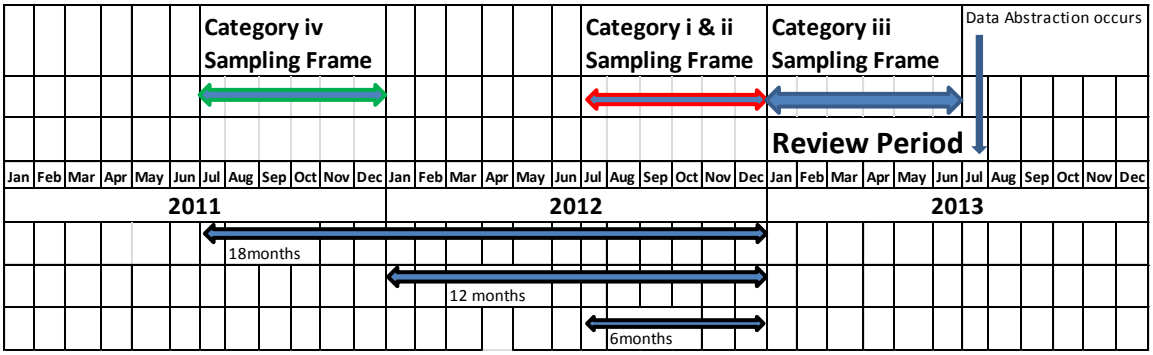
For instance, if the 6-month period under review in a given NigeriaQual data collection cycle is January 1st 2013 to June 30th, 2013, then categories i – iv sampling frames will be as follows;

i. Booked HIV+ve women who received Ante Natal Care between July – December 2012. This corresponds to the 6 months prior to the review period as specified above.

ii. Un-booked HIV+ve women who delivered in the facility between July – December 2012.

iii. ALL (Booked and Un-booked) deliveries by HIV+ve women between Jan – June 2013

iv. ALL (Booked and Un-booked) HIV+ve women who delivered in the facility between July – December 2011. This corresponds to the 12 – 18 months prior to the beginning of the review period;



Review period will differ with each NigeriaQual cycle so that trends and improvements over time can be observed. Just like the adult audit, the PMTCT sample size for each facility, that is, the number of HIV positive women whose QoC will be evaluated per facility is based on the HIVQUAL 95% Confidence Interval sampling guidelines – an estimation that allows an error margin of 0.8 and a width of 1.6. Using this guide, facilities with 5,000 or more eligible women in each sampling category in the 6 month reference period will audit 150 medical records. See Appendix 8 for HIVQUAL sample size chart.

Sampling method will also differ between HIV programmes and facility and will depend largely on the existing medical records systems, presence and extent of use of electronic databases for patient-level data. Three methods are described here and participating facilities will use the sampling methodology that fits their existing system.

Sampling Method #1: Facilities with electronic databases (which includes patient IDs, up-to-date clinical and other follow up information) for all PMTCT patients may include all eligible patients in their database or generate a sample of eligible PMTCT patients based on the HIVQUAL sampling methodology from the database. Data set containing the data elements in the audit tool will be uploaded to the software in the required format

Sampling Method #2: Facilities with line listing of ALL PMTCT IDs with incomplete or no follow-up information will

1. Determine sample size based on the HIVQUAL sample size chart.
2. Place patient IDs in a random number generator and generate random numbers corresponding to the required sample size
3. Enter random numbers on the Random Number List (RNL)

(Refer to Adult QoC Sampling method #2 for calculation steps, Section 4.2.2.1 c)

Sampling Method #3: No electronic copy of PMTCT IDs;
Determine PMTCT sample size based on HIVQUAL sample size chart.
Sampling will be done from the ANC counseling and testing register for category i and PMTCT delivery register for categories ii, iii and iv.

Sampling will be done in 6 steps

1. Determine the number of HIV+ pregnant women in each category (i – iv) in the 6 months review period for each of the categories i – iv represented by Xi - Xiv.
2. Determine PMTCT sample size for each of the categories i - iv represented by Yi - Yiv from the HIVQUAL sample size chart
3. Input the Y (Yi - Yiv) number of ANC IDs on the RNL
4. Divide the total number of HIV+ pregnant women in each category (Xi - Xiv) by (Yi - Yiv) respectively to obtain sampling interval; Approximate (X/Y) to the nearest whole number N

5. Select every Nth HIV+ woman's ID, impute them serially into the Random Number List form.
6. Abstract data following the RNL

Note: Quality of PMTCT care will be reviewed for women with these IDs. Keep hard and electronic copies of the PMTCT random number lists.

d) General observation on Methodology

Random enrolment numbers corresponding to the required sample size (Y) for the PMTCT evaluations are entered on the "PMTCT Random Number List" (wRNL). The wRNL (Appendix 8.) is a very important tool in this quality evaluation exercise and must be prepared and available to all members of the CQI team at the participating facilities at the beginning of the audit. Facility teams will audit the quality of PMTCT care for selected patients using data abstracted primarily from the PMTCT tools and patients' folders where necessary. Data will be abstracted for IDs on the wRNL in a serial manner. No exclusions are expected for the PMTCT audit since sampling is to be done from the ANC counseling and testing register. If a pregnant woman who tests HIV positive in ANC does not have any more clinical or follow up information, such woman will remain eligible for the audit. This is because the proportion of HIV women testing positive who deliver at the facility is an indicator of interest. Facility teams are not allowed to "cherry-pick" patient IDs and emphasis is placed on serial audit of the women's IDs on the wRNL.

Auditing of patient folders will be done within the facility in a manner that will ensure the utmost confidentiality of patient information. This will involve abstracting relevant data from patient folders unto predesigned PMTCT audit tools. For each facility, the highest possible number of PMTCT IDs to be audited per the HIVQUAL Sample Size Chart is 150. This will only apply to facilities that have 5000 women presenting in L&D in the 6-month reference period and will rarely occur. However working with this maximum number of PMTCT IDs, a team of 4 persons will audit approximately 38 patients' records each. At an audit rate of 2 records/hour, a team working 4 hours/day, will complete the exercise in less than 5 days. Records to be audited will be significantly less than 150 and facility CQI teams may exceed 4 members. Therefore, facilities are expected to complete the PMTCT audit within 5 days. The team supervisor will crosscheck forms for completeness and correctness before passing on to the member of the team responsible for data entry into the software

e) PMTCT Quality of Care Indicators

Eight core quality of care indicators are tracked in the NigeriaQual PMTCT audit. See Table 4.3 for a comprehensive indicator matrix for the indicators tracked in the PMTCT audit. The PMTCT abstraction tool (Appendix 3) is designed to collect the 8 indicators above. However, the tool also collects other relevant indicators hitherto tracked by various IPs. The tool also captures patient demographic and other baseline clinical and laboratory information that would allow for secondary analysis related to quality of patient care, programme implementation and patient outcomes.

Table 4.3: NigeriaQual PMTCT Indicators

Indicator I	Percentage of newly diagnosed HIV positive pregnant women who initiated ARV/ART within one month of HIV diagnosis
Numerator	Number of pregnant women who are diagnosed positive during the 6 months prior to the review period and initiated ARV prophylaxis or ART for her own health within one month of HIV diagnosis
Denominator	Number of pregnant women who are diagnosed HIV positive during the 6 months prior to the review period
Disaggregation	None
Purpose	This ensures adequate treatment to boost their CD4 count so as to prevent and protect the unborn child from being infected.
Applicability	PMTCT supported NigeriaQual facilities
Data collection frequency	6 Months
Measurement tool	PMTCT Audit tool
Method of measurement	
Interpretation	
Additional Information	
Indicator II	Percentage of HIV positive pregnant women on ARV who have attended ANC and who delivered in the same health facility
Type of Indicator	PMTCT
Numerator	Number of booked HIV positive pregnant women who delivered in the same health facility within the review period
Denominator	Number of booked HIV positive pregnant women on ARV with an Expected Date of Delivery (EDD) within the review period
Disaggregation	
Purpose	This indicator tracks the process of the PMTCT to ensure that positive mothers give birth to HIV negative child.
Applicability	PMTCT supported NigeriaQual facilities
Data collection frequency	6 Months
Measurement tool	PMTCT Audit Tool

Method of measurement	
Interpretation	
Additional Information	
Indicator III	Percentage of HIV positive women who delivered and initiated ARV prophylaxis for PMTCT according to the National Guidelines
Type of Indicator	PMTCT
Numerator	Number of HIV positive pregnant women who delivered within the 6-month review period and who are on ARV prophylaxis or ART for her own health during ANC, labor and delivery
Denominator	Number of HIV positive pregnant women who delivered within the 6-month review period (including known positives)
Disaggregation	None
Purpose	This indicator assesses the efficiency of facilities to initiate ARV prophylaxis to exposed infants.
Applicability	PMTCT supported NigeriaQual facilities
Data collection frequency	6 Months
Measurement tool	PMTCT
Method of measurement	
Interpretation	
Additional Information	
Indicator IV	Proportion of infants born to HIV positive women within the 6-month review period who received NVP syrup within 72 hours of delivery
Type of Indicator	PMTCT
Numerator	Number of infants born to HIV positive women within the 6 months of the review period who received NVP syrup within 72 hours of delivery
Denominator	Number of infants born to HIV positive women within the 6 months of the review period
Disaggregation	None
Purpose	This assess the efficiency of facilities to ensure that all eligible infants are placed on NVP syrup within 72hrs

	after delivery.
Applicability	PMTCT supported NigeriaQual facilities
Data collection frequency	6 Months
Measurement tool	PMTCT Audit Tool
Method of measurement	
Interpretation	
Additional Information	
Indicator V	Percentage of HIV exposed children aged 6-24 weeks who had Dried Blood Spot (DBS) sample collected for DNA PCR test at 6-8 weeks of age
Type of Indicator	PMTCT
Numerator	Number of HIV exposed children who had Dried Blood Spot (DBS) sample collected at age 6-8 weeks among children 6 to 24 weeks of age during the 6 months review period
Denominator	Number of HIV exposed children 6 to 24 weeks of age during the 6 months review period
Disaggregation	None
Purpose	
Applicability	
Data collection frequency	6 Months
Measurement tool	PMTCT Audit Tool
Method of measurement	
Interpretation	
Additional Information	
Indicator VI	Percentage of HIV exposed children aged 6-8 weeks who received their DNA PCR results by 12 weeks of age
Type of Indicator	PMTCT
Numerator	Number of HIV exposed children aged 12 weeks during the 6 months review period who had Dried Blood Spot (DBS) sample collected and had their DNA PCR result by 12 weeks of age
Denominator	Number of HIV exposed children aged 12 weeks during

	the 6 months review period who had Dried Blood Spot (DBS) sample collected at age 6-8 weeks
Disaggregation	None
Purpose	
Applicability	
Data collection frequency	6 Months
Measurement tool	PMTCT Audit Tool
Method of measurement	
Interpretation	
Additional Information	
Indicator VII	Percentage of HIV exposed children with the 18-month confirmatory/rapid HIV test
Type of Indicator	PMTCT
Numerator	Number of HIV exposed children born to HIV positive women who turn 18-months during the review period and had a 18-month confirmatory/rapid HIV test
Denominator	Number of HIV exposed children born to HIV positive women who turn 18-months during the review period and have never tested HIV positive
Disaggregation	None
Purpose	
Applicability	
Data collection frequency	6 Months
Measurement tool	PMTCT Audit Tool
Method of measurement	
Interpretation	
Additional Information	
Indicator VIII	Percentage of HIV exposed children who have a negative confirmatory/rapid HIV test result at 18-months of age
Type of Indicator	PMTCT
Numerator	Number of HIV exposed children born to HIV positive women who turn 18-months during the review period

	and had a negative HIV result at the 18-month confirmatory/rapid HIV test
Denominator	Number of HIV exposed children born to HIV positive women who turn 18-months during the review period and had a 18-month confirmatory/rapid HIV test
Disaggregation	None
Purpose	
Applicability	
Data collection frequency	6 Months
Measurement tool	
Method of measurement	
Interpretation	
Additional Information	

4. 2.2.4 Facility Audit

a) Overview

This audit of the quality of processes that is external to core service provision but directly or indirectly impact the quality of clinical and other wrap-around services provided. Evaluation will occur in 3 broad domains –

- The Logistics and Supply Chain Management Domain
- The Organizational Management Domain
- The Financial Management Domain

All facilities eligible for and participating in evaluations will be audited across these three domains using standardized audit tools (See Appendices 4, 5 and 6).

Audits will be strictly observatory and by facility staff interviews and carried out by a team comprising of State/LGA officials, Lead IP, IP representatives and facility QI teams (where appropriate) who will be present at the facility at the time of the evaluations. Data for all 3 domains of the facility audit will be collated at the State and IP level and shared with State, IP and respective facility leadership for the purpose of improvements, corrective action and health systems strengthening.

b) Facility Performance indicators

The indicators for the 3 domains of the Facility Audit are presented in Tables 4.4, 4.5 and 4.6;

i. The Logistics and Supply Chain Management Domain

Table 4.4: NigeriaQual Logistic Indicators

Indicator	Proportion of months in the review period that acceptable storage condition criteria was met by the facility
Type Of Indicator	Logistics
Numerator	None
Denominator	None
Disaggregation	None
Purpose	There are specific storage conditions that should be met by the logistic department of each facility. These conditions ensure that commodities/supplies are appropriately stored and managed to maintain quality at all times.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	Every 6 months
Measurement Tool	Logistics tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Proportion of months in the review period in which there were no RTK stock out
Type Of Indicator	Logistics
Numerator	None
Denominator	None
Disaggregation	None
Purpose	This indicator measures the efficiency of the supply management system of facilities in ensuring that there is availability of RTKs.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	Logistics tool
Method Of Measurement	
Interpretation	
Additional Information	

Indicator	Proportion of months in the review period in which there were no CTX stock out
Type Of Indicator	Logistics
Numerator	None
Denominator	None
Disaggregation	None
Purpose	This indicator measures the efficiency of the supply management system of facilities in ensuring that there is availability of CTX.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	Logistics tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Proportion of months in the review period in which there were no ARV stock out
Type Of Indicator	Logistics
Numerator	None
Denominator	None
Disaggregation	None
Purpose	This indicator measures the efficiency of the supply management system of facilities in ensuring that there is availability of ARVs.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	Logistics tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Proportion of items with accurate stock balance for items reviewed over the last 6 months
Type Of Indicator	Logistics
Numerator	None

Denominator	None
Disaggregation	None
Purpose	This is to track the efficiency of stock management. To determine if the stock received within the review period equates with the stock balance at the end of the review period.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	Logistics tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Proportion of ARV/ test kit/reagent Orders Placed That Are Filled Correctly within the review period
Type Of Indicator	Logistics
Numerator	None
Denominator	None
Disaggregation	None
Purpose	
Applicability	This applies to all NigeriaQual facilities
Data Collection Frequency	6 Months
Measurement Tool	Logistics tool
Method Of Measurement	
Interpretation	
Additional Information	

ii. The Organizational Management Domain

Table 4.5: NigeriaQual Organizational Management Indicators	
Indicator	Existence of documented organogram being implemented effectively
Type Of Indicator	Project management
Numerator	N/A
Denominator	N/A
Disaggregation	None
Purpose	This is to determine if there is a documented structure in place and if this structure is being applied effectively.

Applicability	This applies to all NigeriaQual facilities
Data Collection Frequency	6 Months
Measurement Tool	Organizational Audit tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Existence of a documented and approved annual operational plan
Type Of Indicator	
Numerator	N/A
Denominator	N/A
Disaggregation	None
Purpose	This is to establish if there is a work plan guiding all operational activities for the year.
Applicability	This applies to all NigeriaQual facilities
Data Collection Frequency	6 Months
Measurement Tool	Organization management audit tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Quarterly performance evaluation of the operational plan
Type Of Indicator	Organizational management
Numerator	No. of performance evaluation carried out over the last six months
Denominator	Twice over the last six months
Disaggregation	None
Purpose	To track if the activities stated on the work-plan are implemented within the stipulated timelines.
Applicability	This applies to all NigeriaQual facilities
Data Collection Frequency	6 Months
Measurement Tool	Organizational Audit tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Proportion of activities implemented in the work

	plan during the review period
Type Of Indicator	Organizational Management
Numerator	No of activities implemented in the review period
Denominator	Total number of activities in the work plan in the review period
Disaggregation	None
Purpose	This assesses the effective implementation of the work-plan. It is also a quality indicator that highlights reasons/factors that hinder the success of the plan.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Proportion of staff who have received at least one relevant training in the past one year (in house and/or external)
Type Of Indicator	Organizational management
Numerator	Number of staff who have received at least one relevant training in the past one year
Denominator	Total number of staff within the organization
Disaggregation	None
Purpose	It is important that staff in facilities are regularly trained in a number of competencies e.g. data abstraction/collection, filling of DCTs, logistics, quality management etc. This indicator looks at the proportion of staff in the facility hat received any of such trainings.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	
Method Of Measurement	
Interpretation	
Additional Information	

Indicator	Proportion of months in which service reports were submitted to higher levels by the organization in the review period
Type Of Indicator	Organizational Management
Numerator	Number of months that service reports were submitted to higher levels by the organization during the review period
Denominator	Total number of months for the review period
Disaggregation	None
Purpose	This is to track if service reports are being submitted to higher level to monitor the efficiency of the facility.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	
Method Of Measurement	
Interpretation	
Additional Information	

iii. The Financial Management Domain

Table 4.6: NigeriaQual Financial Management Indicators

Indicator	Proportion of months for which the facility prepared/ submitted monthly financial reports in the review period
Type Of Indicator	Financial management
Numerator	Percentage of months for which the facility prepared/ submitted monthly financial reports in the review period
Denominator	Total number of months in the review period
Disaggregation	None
Purpose	This monitors how funds are being used or disbursed for the purpose of accountability and to determine if the funds are well appropriated.
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	Financial management audit tool
Method Of Measurement	
Interpretation	

Additional Information	
Indicator	Facility/ organizations with an annual financial audit (for the previous year)
Type Of Indicator	Financial Management
Numerator	N/A
Denominator	N/A
Disaggregation	None
Purpose	It is for the purpose of accountability and to determine if the funds were well appropriated.
Applicability	This applies to all NigeriaQual participatory facilities
Data Collection Frequency	6 Months
Measurement Tool	Financial management audit tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Existence of a standard chart of accounts that is being used consistently for classifying transactions
Type Of Indicator	Financial management
Numerator	N/A
Denominator	N/A
Disaggregation	None
Purpose	This indicator monitors how efficiently transactions are being managed in the facility.
Applicability	This applies to all NigeriaQual participatory facilities
Data Collection Frequency	6 Months
Measurement Tool	Financial management audit tool
Method Of Measurement	
Interpretation	
Additional Information	
Indicator	Number of asset inventory exercises carried out in the last one year
Type Of Indicator	Financial Management
Numerator	N/A
Denominator	N/A

Disaggregation	None
Purpose	This indicator assesses the efficiency of the facility in keeping track of its assets
Applicability	This applies to all NigeriaQual participating facilities
Data Collection Frequency	6 Months
Measurement Tool	Financial management audit tool
Method Of Measurement	
Interpretation	
Additional Information	

4.3 Data Collection, Analysis and Reporting

This phase is implemented concurrently at all participating facilities and has a national timeline of 3 weeks. The success of the evaluation largely depends on the quality of the activities in this phase. As such, targeted quality assurance measures have been embedded within this activity. Training of personnel involved in the data collection or chart abstraction process is important to enhance the quality of data that is collected. Supervision of the process is also very critical.

4.3.1 Use of the Random Number List:

The random number list (RNL) will guide selection of patients' folders for abstraction and is a very important tool in the chart abstractions for quality of care evaluation process. This is because the quality of the data and success of the exercise is contingent on proper use and completion of this tool. Members of the supervising team must ensure that the rules of the RNL are well adhered to during the exercise. Chart reviews will start with the first number on the RNL and continue serially until the required number of eligible folders has been audited, excluding only folders that meet pre-set exclusion criteria. As soon as the required number of folders has been audited, a line is drawn to indicate completion of the exercise and the remaining unaudited IDs are disregarded. In the rare event that a randomly selected folder is not found, the folder that corresponds to the next randomly selected patient identifier number will replace the missing folder. Folders belonging to patients who died, transferred out or voluntarily discontinued care before the beginning of the review period are excluded from the audit. The proper use of the RNL helps maintain randomness in sample selection and auditing and reduces the chances of "folder cherry-picking." Data for folders corresponding to acceptable IDs as guided by the RNL is abstracted by trained facility-based CQI teams using the standardized evaluation data collection tools.

4.3.2 Data Entry and Analysis

Data from all audits may be entered during chart abstraction into the NigeriaQual software directly or into the paper copy of the tools for before entry into the software. In facilities without EMR, data from chart abstraction and surveys undergoes final review by the team supervisor for completeness and validity. Facilities with EMR will export data to the software. The software will track the progress of data entry and indicate completed sections. The software will also minimize errors in data entry using validation rules. After data entry/import is completed, the software will analyze the data and display indicator reports as numerators, denominators, percentages and charts. Data analysis will also involve estimation and comparison of proportions of patients in each facility that meets specified quality of care criteria. Trend analysis will also be formed from the data. Data may be exported to other statistical package to determine associations.

4.3.3 Data Transmission and Generation of Reports

Site Level: Sites with internet facilities should synchronize their data with the state database using web based application of the software. Sites without internet access may generate their site reports and synchronize as soon as they get internet access.

State level:

- Collate/generate all NigeriaQual indicator reports for all the sites and geographic clusters within the State
- States with internet facilities should synchronize their data with the National database using web based application of the software

Federal level:

- Collate/generate all NigeriaQual indicator reports for all the states and geographic clusters within the country

Implementing Partner (IP) Level:
Each IP will have access to data from only sites that they support. All IPs will have access to state reports through the State Ministry of Health.
All facilities are required to synchronize their data with the central database using the web based application of the software. This would be done either on or off facility depending on internet availability. Aggregate level reports, which do not include IP reports, would be made public following approval of the data by the FMOH.

4.4 Results Dissemination

Reports for all audits - Adult, Pediatric, PMTCT and Facility - constitute a facility's complete report. Graphic results will be presented to facility leadership and management as well as members of the HIV care team, through the facility CQI committees or QI Teams within 2 weeks of report preparation. Additionally, reports will be shared with IP leadership and relevant

stakeholders at the state and federal levels. IPs QI teams will support state MP teams to share state-specific reports with the state leadership. To promote engagement of leadership, trends showing improvement may be displayed at the state and facility level using dashboards. Results will also be shared at state-wide meetings involving facilities within the states. Results are also expected to be shared at conferences and via publications.

4.5 Risks, Benefits and consents

Ensure minimal risk as stated in the NigeriaQual data evaluation protocol (this is another document that has received ethical clearance). No patient contact is expected during the evaluation/auditing. All completed chart abstraction forms should be filed in the patients' folders and treated with the same level of confidentiality as their other medical records. Electronic data would be stored in password protected databases available to only selected programme staffs that have also been trained in confidentiality procedures. Information in the completed database will be linked to patient identifiers.

By identifying quality shortfalls for service delivery, necessary steps to address the issues should be developed within programmes; the quality of care the subjects receive as well as their health outcomes should be improved. It will also facilitate improving current standard of care by providing clinicians and other care providers with information on the gaps in HIV care. This has the prospect of improving public health and future patient outcomes in a targeted fashion, facilitating programme improvements and sharing of best practices in a cost-effective manner.

No patients should be recruited for the adult, pediatric and PMTCT evaluations. Only retrospective abstraction/extraction of routine patient records will be done.

4.6 Data Security

There will be no data with patient identifiers. Data from all participating facilities will be stored in the database. Information being collected comes from patient medical records and hospital registers. During data abstraction/extraction the information with linkages of unique identifiers to study subjects is kept under lock and key at the hospital facilities until records are returned to the medical records room. No records will be left on desks or in any public place at any time. 'Privacy of patients' information will be protected and confidentiality maintained. Only de-identified information on study subjects will leave the hospital facilities and used for data analysis and synchronizations.

Only trained QI staff will have access to the information with linkages of unique identifiers to patients at the level of abstraction / extraction. Access to data will be regulated by passwords. Facility users will have access to data for their facilities only. Facility software administrators will have access to analysis, editing, updating, reporting and synchronization functions for their facilities only.

In an event where access to the internet is unavailable at a particular facility, data for that facility shall be entered into the software and saved in an encrypted desktop format which can be copied onto a thumb drive and taken to a system with internet connection for uploading/ reporting to the NigeriaQual web software. Accessibility to the NigeriaQual software will be unique to each facility i.e. a staff from facility 'A' cannot access data from facility 'B'.

All data abstraction will be performed in secure areas of the hospital. All individuals carrying out data analyses and data abstraction will trained on the ethical implication of their work and would be made to sign relevant documents that prevent them from engaging in unethical actions. The personnel with responsibility on the performance measurement protocol must obtain the CITI human subjects certification and be trained in confidentiality procedures. The data base used to store patient management and monitoring data resides on a secure password protected network maintained at the country offices of Implementing Partners, State Ministries of Health and the FMoH Department of Health Planning and Research Statistics. Access to the dataset where analyses will be carried out is limited to select QI programme staff. Facility feedback and publication or dissemination of results and analysis will not contain any unique patient identifiers and so information will not be able to be traced back to any particular patients.

4.7 NIGERIAQUAL DATA USE AND POLICY

The data use policy seeks to describes the entire processes guiding the NigeriaQual project in data collection, data management and data use to strengthen the overall Health systems in Nigeria. The data use policy provides a common approach for assessing and improving overall data quality of all the facilities to verify the quality of reported data for key indicators in the states and health facilities. This section will also implement measures with appropriate action plans for strengthening data recording, use, management and reporting system as well as improving data quality.

Thus: the aim of the section is to:

- To serve as a guide for NigeriaQual data access and usage between FMoH and other partners including NAHSS and all the facilities supported by various IP's.
- To describe how, where and what the data will be used for.
- To give a clear cut limit and limitations in the use and management of data.
- To formally establish the implications of a breach of the data use policy by the parties involved.

Definitions of Terms

i. **Data Collection Tools (DCT):** Refers to the medium used to collect data, such as a paper questionnaire or a computer assisted interviewing system. For the project, a paper questionnaire is used to extract information from patient folder/file or other relevant source documents for the five thematic areas of the project.

ii. **Confidentiality:** Refers to the procedures in place to prevent disclosure of personal data, including rules applying to staff, aggregation rules when disseminating data, provision of unit records, etc.

iii. **Documentation:** All records in any form (including, written, electronic, scanned) that describe or record the methods, conduct, results or factors affecting the project and the actions taken.

iv. **Quality Assurance (QA):** Quality assurance is an organization's guarantee that the service/ product it offers meet the accepted quality standards.

v. **Source Documents:** Original documents, data, and records (e.g. hospital records, charts, laboratory notes, ANC registers, patients' folders, pharmacy dispensing records.

vi. **Baseline Data:** Data that describes the situation to be addressed by a programme and that serves as the starting point for measuring the performance of that programme. This is used to determine the results and accomplishments of an activity and also serves as an important reference for evaluation.

vii. **Data Analysis:** Data analysis is the process of transforming raw data into usable information, often presented in the form of an analytical article, in order to add value to the statistical output.

The use of data emanating from the NigeriaQual performance measurement process would be properly guided by the FMoH and in line with the Nigeria's Statistical Act 2007[8] which guides use of all data emanating from Nigeria. Under the FMOH data policy and Statistical Act, the confidentiality of clients' data is assured and the roles and responsibility of actors well defined.

Use of data by the facility for quality improvement activities and analysis of data for state and national performance status are all primary purpose for which performance data is collected. Aggregate performance data would therefore be made available for facilities, state and national levels for all stakeholders at various fora and disseminated through publications. Access to patient level data would, however, be highly restricted although secondary level analysis based on data from performance measurement and publications are encouraged by groups and individuals for academic and programme management purposes. The procedures set by the FMOH in line with its data use policy for accessing data, ensuring data security, and obtaining ethical clearance for study among other obligations must be fulfilled to access de-identified patient level data.

The FMoH has an ethical review board (Nigeria Health Research and Ethics committee) which would review all protocol applications for secondary level analysis using the performance measurement data. Approval by the board is a part requirement for obtaining patient level data for secondary analysis. The data use policy highlights in detail the process of obtaining FMOH data for secondary analysis.

4.7.1 Level of users

i. Facility users will have access to only the reports generated for their facility.

After data abstraction and entry is complete, reports for each site shall be generated and shared with relevant stakeholders.

ii. State users will have access to data reports from all sites within their state without patient identifiers. The state software administrator will have access to analysis, reporting and synchronization functions for their states only. State users will be able to aggregate data for all, sub-sets or clusters of sites within their states.

iii. IP users will have access to data from all sites that they support. IPs will have access to patient-level data from each supported site for the purpose of secondary analysis with electronic concurrence from the individual sites. IP users will be able to aggregate data for all, sub-sets or clusters of sites within their states.

iv. FMoH/National Level users will have access to data from all sites and states in the country. The FMoH level administrator/ data manager will have access to all patient-level data from all sites, and states in Nigeria. Donors/ Implementing partners will have access to all sites within their domain. Other National level users will have access to multi-site patient-level data and states in Nigeria after electronic concurrence from the FMoH. Access to patient-level data for any other purposes will be granted through a defined procedure. Request for data will be sent to the FMoH and data will be released after the necessary approvals.

4.7.2 Data quality assurance, validity and integrity

The NigeriaQual software is embedded with validation rules to ensure that only valid data is entered and analyzed.

- The NigeriaQual software employs the use of carefully developed tables and linkages to prevent duplication.
- The software ensures that for each component of the audit (Adult, Pediatric, PMTCT, Logistics etc.), data entry must be complete by breaking the components into compulsory sections with a few questions.
- A “save/resume” function in the software allows for data entry continuation while also preventing duplication.
- The software also links related variables in the audit to improve data entry.
- While allowing for unavailability of information/data, the software also ensures that key information needed for analysis be entered.

4.7.3 Data review, analysis and reports

- After data entry is completed for each facility, the NigeriaQual software will generate results for that facility
- Data entered for each facility are to be uploaded to the online version (server) of the NigeriaQual software.
- Following accessibility options available for each stakeholder, reports and analysis can be accessed through the NigeriaQual website.

- Reports generated for each facility are to be shared only with relevant authorities in the facility to guide quality improvement initiatives.
- IPs, States and the Federal Ministry of Health will only share reports generated with relevant authorities for the implementation of quality improvement initiatives.
- Reports from each facility are to be submitted according to the timelines specified in the National Guideline for the NigeriaQual.

4.8 Ethical Issues in Standard Operating Procedure

The data use policy will comply with all policies and procedures guiding similar data use in Nigeria and as seen in the gazette on Nigeria's statistical. In view of this, the policy is designed to address the following ethical principles such as respect for persons, beneficence/beneficiaries and justice, individual autonomy, minimize harm and maximize benefits and equitably distribute risks and benefits by using procedures that are consistent with sound data use and policies that takes the issues below into consideration.

- **Confidentiality: All the data collected for use will be reported in aggregate form:** No individual respondent will be identified.
- **Staff ethical training:** All the participatory staff and supervisors will be carefully trained on human subjects' protection, especially the importance of privacy and confidentiality.
- **Data collection procedures:** Personal names will not be used in coding the collected data to ensure privacy and confidentiality. This will establish that collected data will be treated as anonymous and that individual response in the collected data will not be linked to identifying information.
- **Data collection and management supervision:** Collected data will be used under strict supervision by the relevant authority and explain how the data use will benefit the target groups, stake holders and the society at large
- **Benefits:** (Maximizing Benefits and Minimizing Harm)
  Benefits of the study
    a) This project provides facilities, IPs, States and the Federal Ministry of Health with reliable information to guide quality improvement initiatives and fiscal planning to improve quality of care provided to patients.
    b) The project will highlight areas in care and treatment, organizational/financial management, logistics/supply change management that require additional effort to strengthen services delivered to patients.

4.9 Data use and Ownership

The NigeriaQual project is for primary analysis for evaluation and improvement purposes only however, there exists the risk of unauthorized use of data collected from the NigeriaQual performance measurement for secondary/research analysis purposes. The Federal Ministry of Health shall constitute a committee / review board which will reserve the right of authorization for research using the NigeriaQual data in and out of the country. No individual or organization shall unilaterally use the NigeriaQual data for publication/presentation of any form without FMOH approval.

The **Terms of Reference** for such a committee shall be as follows

Constitution and composition

- The Federal Ministry of Health shall constitute an appropriate committee to oversee all issues regarding use of the NigeriaQual performance measurement data for secondary analysis.
- This committee shall be headed by the Federal Ministry of Health and shall include one representative each from all the IPs that participated in the NigeriaQual project.
- The management of each Implementing Partner shall nominate one staff to serve on the committee as a member.
- Other members from related agencies (e.g. NACA, NHREC and other relevant agencies and units in FMOH) may be nominated by the FMoH as members of the committee.

Functions and Responsibilities

- Anyone that wishes to use the data collected during the NigeriaQual performance measurement for secondary analysis will have to obtain clearance from the national committee.
- This committee shall provide a template for such clearance including guidelines for submission of concept sheet and even protocols to committee before submission to an ethical committee/ board for clearance.
- Every researcher shall submit a protocol describing in detail the purpose of the research, the specific research questions to be answered, a clear description of the benefits of the study, how the data will be used and how results will be disseminated.
- The committee will evaluate the protocol for relevance, originality and inclusiveness. The committee may suggest a review of the study team/investigators to align with the scope of the study.
- On in agreement with the protocol and topic for research, the committee shall give the approval for submission of the protocol to an ethics committee/ Institutional Review Board for ethical clearance if required. This should clearly state the time allowed for the study, timelines for routine reports of study and terms and conditions upon which the study shall be terminated and approval of topic withdrawn.
- After receiving committee approval, the investigators shall send the protocol through an Institutional Review Board for approval.
- Upon receipt of necessary ethical clearance, the investigator shall then proceed with the study.
- This committee will suggest/nominate co-authors for every study in line with the sites/partners where the study is conducted.

Table 4.7: Levels of reporting and feedbacks

		USER LEVELS				
Levels	**REPORT TYPES**	**Site**	**IP**	**State**	**National**	**Source level**
1	Site-specific Report (individual charts and grouped histograms)	√	√	√	√	Desktop
2	Multi-site IP-specific Reports (Grouped by sites and indicators)		√	√	√	Web
3	State-Wide Reports (Grouped by Sites, Indicators and districts)			√	√	Web
4	Nation-Wide Reports (Grouped by States, IP, Funding agency, geopolitical zone)				√	Web
5	National Summary Reports and feedback to stakeholders on sites specific, multisite, Statewide and Nationwide QI and performance data	√	√	√	√	Web

Table 4.7 shows the level of reporting and feedbacks

Level 1 Reports: Site-specific reports

A user with site-level access should be able to generate and view pie charts or histograms of individual indicators as well as indicator reports grouped by Evaluation areas e.g. All 8 adult ART indicators grouped in one histogram. This will be at the site/facility level.

Level 2 Reports: Multi-Site IP-specific Reports

A user with access to Level 2 reports should be able to generate and view reports of sites that are supported by a specific IP. This user should have the option of viewing site-based reports (as the site user will view it), IP-wide reports and reports grouped by indicators, States or Zones. By indicator, this user can view reports for Indicator A1 on one histogram for all sites they support, all sites in a given state or region.

Level 3 Reports: State-Wide Reports

A user with access to Level 3 reports should be able to generate and view reports of all sites in a specific State. This user should have the option of viewing site-based reports (as the site user will view it), state-wide reports and reports grouped by indicators. By indicator, this user can generate and view reports for Indicator A1 on one histogram for all sites in a State or sites in different districts. At a glance, pictorial representation of each indicator result on a state map should tell this user where the weaker and stronger sites are located in a state

Level 4 Reports: National Reports

A user with access to Level 4 Reports should be able to generate and view reports as the sites, IPs and States will view (Site-based, State-wide, IP-wide). In addition, this user will have access to national

reports disaggregated by indicator, indicator and funding agency (PEPFAR vs Global Fund), indicator and State, indicator and geopolitical zone). At a glance, pictorial representation of each indicator result on a national map should tell this user where the weaker states or zones are.

Level 5 Reports: National Summary Reports and feedback on sites specific, multisite, Statewide and Nationwide

There will be reports for feedback from each level down to the lower levels so that the information on any level such as site, state wide/ nation-wide performance will be available to all for use. The general public through this can have access to the programme performance. These will be accessible regularly on the webpage using a feedback tab.

Use of NigeriaQual Data and reports

The generation of the NigeriaQual report will be twice a year and programmatic will be used for programmatic and service delivery improvement.

Every organization is expected to have a CQI team made up of the core CQI officers and officer responsible for development of policies/service models and also those responsible for the delivery of services. Once the analyzed results of the thematic indicators are ready, it is expected to be a reflection of the programme's performance.

The mode of sharing involves the SI/HSS unit or CQI team's disseminating the findings to the leadership of the institution and the relevant officers responsible for the service delivery and policy formulation.
The dissemination will involve all the spectrum of performance score from the best to even the worst.

Some of the methods of dissemination involves publications; development of wall charts; meetings-monthly, quarterly and biannual; Re-measurement of the tracking Indicators will be repeated to assess improvement very six months.

Section 5

NigeriaQual Software System

5.0 Overview

In order to aid uniform analysis of performance data generated and use of the data for quality improvement activities by the facilities and the tracking of service quality and policy decisions by relevant stakeholders, the FMOH commissioned the development of a software. The software which has both a desktop and web components is expected to enhance the achievement of this goal. This section provides an introduction to the software which was referenced in earlier sections of this document. It provides basic information that would guide the use of the software and technical pre-requisites for computer systems for all that need to use the software irrespective of their existing medical records management system. More detailed reference and help on the software may be obtained on the user manual/guidebook which is available online via www.nigeriaqual.ng

5.1 Software Background

The Software system is made of two components:
A desktop version: This is a compact Microsoft Windows application which runs on a MS SQL Server Compact edition database engine.
The Web reporting interface version: This is a Microsoft.NET web application which runs on a SQL Server 2012 Database engine hosted on a dedicated server.
By deliberate design, the Desktop software will ONLY run on MS windows computers.
On the other hand, the Web Interface will run on any browsers, PCs and hand held devices that include smart phones.

Both components of the software permits data capturing using data entry screens that correspond to the data collection tools (DCTs) for all evaluation areas/domains, namely adult ART, pediatric ART, PMTCT, logistics management, financial management and programme management. As much as possible the data entry screens mimics' the paper version to aid work flow. A different Tab is to be used to access each form or domain. Data that are captured are saved using the save button on each section of the form and may be edited for errors. It is advisable to save all data captured as we work to prevent loss of data. The NEXT or PREVIOUS buttons helps to navigate across the sections while completing the forms. Reports for indicators can be generated for use following data capture for the various domains. In addition to the performance data that is to be captured, details of the facility, facility users and implementing partner would be captured. These are essential information for setting up the software and ensuring appropriate storage of data captured.

The unique features for the desktop application require that the pre-requifacilities be installed prior to installing the application. The individual facility and users would then need to be setup. After every data collection cycle, the administrator for each facility will be expected to upload the evaluation data to the central database for aggregation and central reporting. This is achieved by accessing the menu – ADMINISTRATION > DATA UPLOADS > FACILITY DATA UPLOAD. This process requires internet connectivity.

The use of the web Reporting Interface version requires connectivity to the internet to accessing the URL, logging in and logging out. Since work is already online, there is no requirement for uploading, it is important that all data capture be saved to prevent loss of data.

5.2 Software Requirements

5.2.1 System and environmental requirements listing for the desktop software Version 1.0, Build Version 8.8.8

Operating System:
This version of the desktop software will work with Windows Vista and above. Due to the possibility of Microsoft phasing out support for older systems, it is recommended that this software is deployed on Windows 7 and higher.
Pre-Requifacilities:
Microsoft.NET Framework 4.5.1
Microsoft SQL Server Compact Edition 4.0

Hardware:
Desktop/Laptop display with 15 inches or higher for best results
RAM: Minimum of 1GB memory
Processor: Intel, with minimum of 1MHz Speed

5.2.2 System and environmental requirements listing for the Web software Version

Connection to the internet is the only critical requirement.

5.3 Training Requirement

The software is user friendly. A one day orientation is required for new users who are computer knowledgeable. For computer naïve users, a few days (2-3days) practice should suffice. The training should also be facility-based to minimize training cost. . Sample tools for data capture is useful for hands on experience. The secret to using the software is practice, practice, practice.

5.4 User Defined Access

Various level of user level access definition obtains for data security purpose. Access to data capture and editing obtain at facility level only and by specified personnel. Report generation and viewing access would depend on the category of access of the user which is password controlled. The category of expected users and the functions they can execute are summarized in Table 5.1

Table 5.1: Software Users (Web) and Access Capacity

	Users	Data capture and editing	Analysis	Report generation	View standard reports	Analysis and report generation using patient level data
1	Facility	Yes	Yes	Yes	Yes	Specific to facility
2	States	No	Yes	Yes	Yes	Specific to states
3	Federal	No	Yes	Yes	Yes	All facilities and states
4	Implementing partners	No	Yes	Yes	Yes	Specific to facilities /states supported
5	Donors	No	Yes	Yes	Yes	Specific to facilities states supported
6	General public	No	No	No	Yes	Only through request

Section 6

Implementing Quality Improvement Activities

6.0 Overview

This section, in addition to section 2.6 focuses on how to enhance the development of CQI projects and improved service delivery in the NigeriaQual programme. Generally, CQI is built on the principle of three tripods:

i. Base infrastructure- Leadership, political will, manpower, and systems
ii. Performance Measurement-Periodic evaluation of levels of quality of care and services
iii. Quality Improvement Activities- Real activities and decisions that lead to improved quality of care.

It will provide an introduction to how to initiate improvement activities in response to data results. It will introduce decision making tools and how to use data/information for decision making and project designs including CQI projects.

6.1 Developing QI Activities.

Quality Improvement Tools

At every level of QI project designs, QI tools should be used to make decisions that will impart positively on quality of care. These will be fully elaborated on during NigeriaQual trainings focusing on use of performance data for quality improvement.

Categories of tools that can be used are:

- Performance measurement tools
    - Chart abstraction tools/software, prioritization matrix, reporting tools

- Problem analysis tools
    - Flow charts
    - Cause –effect analysis tools: fish bone or Ishikawa diagram, problem tree/but- why analysis
- Activity planning tools
    - Improvement matrix
    - Work plan template

An integral part of performance measurement involves:

- Summarizing of problems/performance gaps
- Clarifying each problem to generate a shared understanding amongst all QI Committee members
- Prioritization (criteria) Matrix

Process analysis (Flow chart): Graphic representation of how a process works, showing, at a minimum, the sequence of steps. Flow chart uses a set of standard symbols. This helps to clarify how things are currently working and how they could be improved. It also assists in finding the key elements of a process, while drawing clear lines between where one process ends and the next one starts.

Root Cause Analysis (RCA): Class of problem solving methods aimed at identifying the root causes of problems or incidents. Based on the theory that problems are best solved by attempting to correct or eliminate root causes, as opposed to merely addressing the immediately obvious symptoms. By directing corrective measures at root causes, it is hoped that the likelihood of problem recurrence will be minimized. Since prevention of recurrence by a single intervention is not always possible, RCA is often viewed as an iterative process, and considered to be a tool of continuous improvement. RCA Techniques examples are Ishikawa (fishbone) diagram and the Tree diagram

Cause-Effect Analysis: A *cause-and-effect analysis* generates and sorts hypotheses about possible causes of problems within a process by listing all of the possible causes and effects for the identified problem

6.2 Project Design and Management:

A project is directed at specific goal. It Involves coordination of interrelated activities and has limited duration- a beginning and an end. It should have a balance between cost, time and quality. The NigeriaQual QI projects should satisfy these criteria. Since it is Continuous Quality Improvement, the projects should continuously build on preceding successes.

Good project management considers:

- What needs to be done
- /The standard to guide its implementation
- Who will do it
- How much it will cost

- Who pays for it/who to sponsor it

To develop/implement a successful QI project, it should have the following qualities:

- Clearly defined & achievable objectives
- Effective leadership
- A plan that manages and measures progress
- Management commitment and support
- Stakeholders agree on the project's goals
- Continuous communications
- Stakeholders are appropriately involved

Three fundamental areas of skill needed by all CQI project managers are;

- **Planning –** The ability to plan the use or organizational resources of time, personnel, budget etc. to achieve organizational objectives
- **Technical -** The specific professional technical skills needed for a project
- **People -** The ability to manage and motivate people who will implement the project activities, communicate effectively with stakeholders and resolve conflicts and interpersonal problems

6.2.1 Recommended steps in developing a QI project

Initiate and Define

1. Select project & define scope

Plan

2. Define project activities

3. Determine task dependencies

4. Develop schedule

5. Allocate resources

6. Create plan to address risks

7. Create plan to communicate with stakeholders

Implement and Control

8. Implement the project

9. Monitor & take corrective action

Close

10. Close out and document progress/findings/lessons learnt

6.3 Conclusion:

The concepts above will guide development of QI projects that will lead to CQI. The approach of implementation should be in line with the PDSA already discussed in section 2. The topics discussed in this section are part of the training modules for the NigeriaQual. Every organization involved in NigeriaQual is expected to key into the processes and strategies as outlined in the guideline and framework, and also the required trainings as being organized in NigeriaQual program.

APPENDICES
APPENDIX 1
NIGERIAQUAL
ADULT ART AUDIT CHART

A. FACILITY DETAILS

FACILITY NAME: _____

STATE: _____ LGA: _____

IMPLEMENTING PARTNER: _____

NAME OF ASSESSOR: _____

Date of Assessment (dd/mm/yyyy): ___/___/_____

Review Period ___/___/_____ To ___/___/_____

B. LEVEL (Check one)

☐ Primary Health Centre ☐ Secondary Hospital

Tertiary Hospital
☐ Federal med. Centre ☐ Specialist Hospital
☐ Teaching Hospital

Ownership ☐ Public ☐ Faith-based ☐ Private

C. PATIENT DEMOGRAPHICS

Patient ID ___-___-_____ Hospital No. _____ RNL Serial No. _____ Gender ☐ Male ☐ Female

Last name: _____ Date of Birth: ___/___/_____

First name: _____ Age: ___

Has the patient had a clinical visit 6 months prior to review period? ☐ Yes ☐ No

(If No, Please discard form)

Hospital admission during review period: ☐ Yes ☐ No

Date of Enrollment: ___/___/_____

Marital Status ☐ Single ☐ Married ☐ Separated ☐ Divorced ☐ Widowed

Occupation ☐ Unemployed ☐ Employed ☐ Student ☐ Retired

Education ☐ None ☐ Quranic ☐ Primary ☐ Junior Secondary ☐ Senior Secondary ☐ Post Secondary

Ward/Village/Town of residence: _____

LGA of residence: _____ State of residence: _____

State of Origin: _____ Tribe: _____

D. BASELINE PARAMETERS *(Initial)*

CD4 Count: _____ CD4 count date (dd/mm/yyyy) ___/___/___ ☐ CD4 value not recorded

Weight (kg): ___.___ Weight date (dd/mm/yyyy) ___/___/___ ☐ Weight value not recorded

WHO Clinical Stage: ___ WHO clinical stage date (dd/mm/yyyy) ___/___/___ ☐ WHO clinical stage not recorded

E. ART

Was the patient ever started on ART? ☐ Yes ☐ No

Was the treatment preparation completed before the start of ART? ☐ Yes ☐ No ☐ Not on ART

If 'Yes', what is the date of starting ART? (HAART) (dd/mm/yy) ___/___/_____

F. ART ADHERENCE (For ART patients only)

Was ART Adherence assessment performed during the last 3 months? ☐ Yes ☐ No If yes, last date of assessment ___/___/_____

Highest CD4 since ART initiation: _____ Date of highest CD4 test (dd/mm/yyyy) ___/___/___

G. CLINICAL EVALUATION VISITS IN THE REVIEW PERIOD

Visit1 (dd/mm/yy):	Visit 2 (dd/mm/yy):	Visit3 (dd/mm/yy):	Visit4 (dd/mm/yy):
___/___/___	___/___/___	___/___/___	___/___/___

NIGERIAQUAL
ADULT ART AUDIT CHART

H. PATIENT MONITORING DURING REVIEW PERIOD (Values/Test Dates)

CD4 Count	PCV/Hct	Weight (kg)	WHO Stage	Creatinine	ALT

I. ART REGIMEN DURING REVIEW PERIOD (Use codes listed below to indicate date started and changed) (dd/mm/yyyy)

Was the patient on ART on the first day of the review period? ☐ Yes ☐ No

Was the patient on ART any time during the review period? ☐ Yes ☐ No **If Yes, continue**

1st Regimen: ____ Start: __/__/____ Change __/__/____

2nd Regimen: ____ Start: __/__/____ Change __/__/____

3rd Regimen: ____ Start: __/__/____ Change __/__/____

If Other (10 or 22), Indicate Regimen Here

Duration of medication coverage

Date of last drug pick-up: __/__/____ ☐ 1 month ☐ 2 months ☐ 3 months ☐ Other (specify):_____

ART Medication Regimens

Codes	1st line	Codes	2nd line	Codes	2nd line	Antiretroviral (ARV) Abbreviations	
1	NVP/AZT/3TC	11	LPVr/TDF/FTC or 3TC	23	ATVr/AZT/3TC	AZT	Zidovudine
2	NVP/TDF/FTC or 3TC	12	LPVr/AZT/3TC	24	ATVr/TDF/AZT/FTC or 3TC	3TC	Lamivudine
3	NVP/D4T/3TC	13	LPVr/TDF/AZT/FTC or 3TC	25	ATVr/D4T/3TC	NVP	Nevirapine
4	NVP/ABC/3TC	14	LPVr/D4T/3TC	26	ATVr/ABC/3TC	D4T	Stavudine
5	EFV/AZT/3TC	15	LPV/ABC/3TC	27	2nd line Other	ABC	Abacavir
6	EFV/TDF/FTC or 3TC	16	SQVr/TDF/FTC or 3TC			EFV	Efavirenz
7	EFV/D4T/3TC	17	SQVr/AZT/3TC			TDF	Tenofovir
8	EFV/ABC/3TC	18	SQVr/TDF/AZT/FTC or 3TC			FTC	Emtricitabine
9	ABC/AZT/3TC	19	IDVr/TDF/FTC or 3TC			SQVr	Saquinavir+Ritonavir
10	1st line Other	20	IDVr/AZT/3TC			IDVr	Indinavir+Ritonavir
		21	IDVr/TDF/AZT/FTC or 3TC			LPV/r	Lopinavir+Ritonavir
		22	ATVr/TDF/FTC or 3TC			ATV/r	Atazanavir

J. VIRAL LOAD TESTING (for ART pts only)

Has this patient received VL testing:

☐ Yes ☐ No ☐ Not on ART If yes, Date (dd/mm/yyyy): __/__/____ Result (copies/ml): _____

K. TUBERCULOSIS

Was the patient on TB treatment at the begining of the review perdiod? ☐ Yes ☐ No

Was the patient clinically screened for TB during the review period? ☐ Yes ☐ No ☐ Receiving Treatment

(TB Screening Criteria)
- Any cough
- Any fever
- Any night sweats
- Any weight loss

Based on screening, was the patient suspected to have TB? ☐ Yes ☐ No

Did the patient have a CXR performed during the review period? ☐ Yes ☐ No

NIGERIAQUAL
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Has the patient been evaluated in the review period for TB with sputum smear and/or culture? ☐ Yes ☐ No

Was the patient diagnosed with TB during the review period? ☐ Yes ☐ No If yes, any date of diagnosis: __/__/____

Did the patient start TB treatment? ☐ Yes ☐ No If yes, TB treatment start date: __/__/____

L. COTRIMOXAZOLE

1.Did patient receive cotrimoxazole during the review period? ☐ Yes ☐ No

2. Is the patient currently on Cotrimoxazole prophylaxis? ☐ Yes ☐ No If yes, Date of last prescription: __/__/____

* Check pharmacy form from last visit

M. PHARMACOVIGILANCE (for ART pts only)

Was patient assessed for adverse effects during the review period? ☐ Yes ☐ No ☐ Not on ART

N. Was Hepatitis B assay ever done for this patient? ☐ Yes ☐ No If yes, Result ☐ Positive ☐ Negative

N. Was clinical evaluation form/ART card completely filled at the last visit? ☐ Yes ☐ No

O. CARE AND SUPPORT ASSESSMENT

O1. Is there a Care & Support assessment form in the patient's folder? ☐ Yes ☐ No **(If Yes, go to O2, If no, go to P)**

O2. Did the patient receive any care and support assessment in the review period? ☐ Yes ☐ No ☐ Not Indicated

O3. Was nutritional assessment ever done for this patient at anytime since enrolment? ☐ Yes ☐ No ☐ Not Indicated

O4. Did the patient receive nutritional assessment within the review period? ☐ Yes ☐ No ☐ Not Indicated

O5. Was the prevention goal documented in the care and support form? ☐ Yes ☐ No ☐ Not Indicated

O6. Has the patient ever received a basic care package? ☐ Yes ☐ No ☐ Not Indicated

O7. Did the patient receive a basic care package anytime within the review period? ☐ Yes ☐ No ☐ Not Indicated

P. PREVENTION

Did the patient receive prevention education during the review period? ☐ Yes ☐ No If yes, Date received: __/__/____

*Guidance: Any education related to sexual or medical transmission in an individual or group session

Q. MISSED APPOINTMENTS AND PATIENT TRACKING *(during review period)*

Misssed appointment (dd/mm/yyyy)	Attempted Contact	Date of attempted contact (dd/mm/yyyy)	Outcome of tracking	Reason for LTFU	Cause of death
1. __/__/____	☐ Yes ☐ No	__/__/____			
2. __/__/____	☐ Yes ☐ No	__/__/____			
3. __/__/____	☐ Yes ☐ No	__/__/____			

CODES

Outcome of tracking	Reason for LTFU	Cause of death
1 = LTFU	1 = Spiritual	1 = HIV related
2 = Transferred	2 = Self discontinuation	2 = Non-HIV related
3 = Dead	3 = Moved out of area	3 = Don't know
4 = Returned to care		

R. PATIENT STATUS DURING REVIEW PERIOD (with documented evidence)

☐ Transferred out	Date __/__/____	Reason for discontinuing care: ☐ Travel ☐ Alternative treatment
☐ Dead	Date __/__/____	☐ Dissatisfaction ☐ Other _____
☐ Discontinued Care*	Date __/__/____	☐ Not Indicated

** Documented that patient's care giver told providers that will not be receiving care anymore at the facility*

APPENDIX 2
PEDIATRIC CHART AUDIT

A. FACILITY DETAILS

FACILITY NAME: _____

STATE: _____ LGA:_____

IMPLEMENTING PARTNER: _____

NAME OF ASSESSOR:_____

Date of Assessment: ____ / ____ / _____

Review Period ____ / ____ / ____ / ____ To ____ / ____ / ____

Ownership: Public Private Faith-based

B. LEVEL (Check one)

Primary Health Centre Secondary Hospital

Tertiary Hospital
Federal med. Centre Specialist Hospital
Teaching Hospital

C. PATIENT TYPE (Check One)

Check the status of the patient as at the beginning of the review period

HIV-infected infant age 0 - 24 months

HIV-infected child age > 2 years

D. PATIENT DEMOGRAPHICS

Patient ID ____ - ____ - _____ Hospital No. _____ RNL Serial No.

Gender Male Female Age: _____ days weeks months years

Last name: _____ Date of Birth: ____ / ____ / ____

First name: _____ Date enrolled in care ____ / ____ / ____

Did the patient have a clinical visit in the 6 months prior to the review period? Yes No ***(If No, Please discard form)***

Delivery Location: This Facility Other Public Facility Private Clinic TBA/Maternity home Home Other Unknown

Primary caregiver: _____ Occupation: _____

Residential address: State: _____ LGA: _____

State of origin: _____ Tribe: _____

Date care ended/Last visit (dd/mm/yyyy): ____ / ____ / _____ Hospital admission during review period: Yes No

E. BASELINE PARAMETERS
(Initial)

CD4 Count: CD4 count date (dd/mm/yyyy) ____ / ____ / ____ CD4 value not recorded

Weight (kg): ____.____ Weight date (dd/mm/yyyy) ____ / ____ / ____ Weight value not recorded

WHO Clinical Stage: WHO clinical stage date (dd/mm/yyyy) ____ / ____ / ____ WHO clinical stage not recorded

Was the patient ever started on ART? Yes No If 'Yes' what is the date of starting ART (HAART) (dd/mm/yyyy) ____ / ____ / ____

F. CLINICAL EVALUATION VISITS IN THE REVIEW PERIOD

Visit 1 (dd/mm/yy): ____ / ____ / ____ Visit 2 (dd/mm/yy): ____ / ____ / ____ Visit 3 (dd/mm/yy): ____ / ____ / ____ Visit 4 (dd/mm/yy): ____ / ____ / ____

G. PATIENT MONITORING DURING REVIEW PERIOD (Values/Test Dates)

CD4 value	CD4 %	Weight (kg)	WHO Stage	PCV/Hct	ALT

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PEDIATRIC CHART AUDIT

	Result	Date Collected (dd/mm/yyyy)	Result Available in Chart	Date reveived (dd/mm/yyyy)
☐ DNA/PCR				
Age of EID #1 ☐☐ ☐ weeks ☐ months	☐ Positive ☐ Negative	☐☐/☐☐/☐☐☐☐	☐ Yes ☐ No	☐☐/☐☐/☐☐☐☐
Age of EID #2 ☐☐ ☐ weeks ☐ months	☐ Positive ☐ Negative	☐☐/☐☐/☐☐☐☐	☐ Yes ☐ No	☐☐/☐☐/☐☐☐☐
☐ Rapid Test				
Age ☐☐ ☐ weeks ☐ years ☐ Months ☐ Not indicated	☐ Positive ☐ Negative	☐☐/☐☐/☐☐☐☐	☐ Yes ☐ No	☐☐/☐☐/☐☐☐☐
☐ Clinical Diagnosis				
Age ☐☐ ☐ weeks ☐ years ☐ Months ☐ Not indicated				

H. METHOD OF DIAGNOSIS

I. ART REGIMEN SINCE STARTING TREATMENT - During review period (Use codes listed below and indicated dates started and changed ☐☐ ☐☐/☐☐/☐☐

Was the child on ART during the review period? Yes No

1st Regimen ☐☐	Start	☐☐/☐☐	Change	☐☐/☐☐	
2nd Regimen ☐☐	Start	☐☐/☐☐	Change	☐☐/☐☐	
3rd Regimen ☐☐	Start	☐☐/☐☐	Change	☐☐/☐☐	

If Other (11 or 25), Indicate Regimen Here

ART Medication Regimens

Codes	1st line	Codes	2nd line
1	NVP/AZT/3TC	20	LPVr/TDF/FTC or 3TC
2	NVP/TDF/FTC or 3TC	21	LPVr/AZT/3TC
3	NVP/D4T/3TC	22	LPVr/D4T/3TC
4	NVP/ABC/3TC	23	LPVr/ABC/3TC
5	EFV/AZT/3TC	24	LPVr/ABC/ddI
6	EFV/TDF/FTC or 3TC	25	2nd line Other
7	EFV/D4T/3TC		
8	EFV/ABC/3TC		
9	ABC/AZT/3TC		
10	ABC/3TC/D4T		
11	1st line other		☐☐

Antiretroviral (ARV) Abbreviations	
AZT	Zidovudine
3TC	Lamivudine
NVP	Nevirapine
D4T	Stavudine
ABC	Abacavir
EFV	Efavirenz
TDF	Tenofovir
FTC	Emtricitabine
LPV/r	Lopinavir+Ritonavir
NLV	Nelfinavir

J. ART ADHERENCE (For ART patients only)

Was ART adherence assessment performed during the last 3 months? ☐ Yes ☐ No

If Yes, Date of last assessment in the review period: ☐☐/☐☐/☐☐☐☐

K. PMTCT AND PERINATAL

I1. Mother's HIV status: ☐ Positive ☐ Negative ☐ Unknown (if negative or unknown, skip this section)

I2. When was the mother diagnosed with HIV? tick appropriately

☐ Before index pregnancy ☐ Antepartum(During pregnancy) _____ weeks ☐ During labor and delivery ☐ Post-delivery ☐ Not indicated

If diagnosed before index pregnancy, was the mother on ART? ☐ Yes ☐ No

K3. What PMTCT regimen/intervention did the mother receive

Ante-partum	Gestational age at initiation (weeks)	Intra-partum	Post-delivery
☐ ZDV (only opt A)	☐☐	☐ sdNVP+3TC+ZDV (opt A)	☐ ZDV+3TC (option A)
☐ HAART for prophylaxis (opt B)	☐☐	☐ HAART for prophylaxis (opt B)	☐ HAART for breast feeding prophylaxis (opt B)
☐ HAART for treatment	☐☐	☐ HAART for treatment	HAART for lifelong treatment
☐ None	☐☐	☐ None	Not Indicated
☐ Unknown/Not Indicated	☐ ☐☐ ☐	Unknown/Not Indicated ☐	☐
Other	☐☐	Other	

K4. Did the infant receive any of the following?

☐ Daily NVP 1 week until breastfeeding ☐ Daily NVP for 6 weeks ☐ sdNVP + daily ZDV for 6 weeks ☐ Other ☐ Not Indicated

K5. Feeding method in the infants first year *(tick all that apply)*

Exclusive Breast Feeding for 6 months	breast milk supplement before 6 months	Mixed with BF before 6 months	Mixed with BF after 6 months	Regular diet for age	Nutritional supplements
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

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PEDIATRIC CHART AUDIT

L. COTRIMOXAZOLE PROPHYLAXIS

Patient currently on Cotrimoxazole: ☐ Yes ☐ No Date Cotrimoxazole first prescribed (dd/mm/yyyy): ___/___/_____ or indicate age at first prescription ___ ☐ Weeks ☐ Months ☐ Years

M. TUBERCULOSIS (Fill this section for only HIV infected infants and children)

1. Was the patient on treatment for TB during review period? ☐ Yes ☐ No ☐ Not indicated **If YES go to section N, if NO go to M2.**

2. Was the patient screened for TB during the review period? ☐ Yes ☐ No ☐ Not indicated **If YES go to M3, if NO go to section N**

TB Screening Criteria
/ Contact history with a TB case
/ Current cough
/ Poor weight gain/weight loss

3. Based on screening, was the patient suspected to have TB? ☐ Yes ☐ No ☐ Not indicated

4.1 Was the patient evaluated for TB with sputum/gastric aspirate microscopy or culture? ☐ Yes ☐ No ☐ Not Indicated

4.2 Did the patient have a Chest X-ray? ☐ Yes ☐ No ☐ Not Indicated

4.3 Was the child diagnosed with TB? ☐ Yes ☐ No ☐ Not Indicated If Yes, Date of diagnosis: ___/___/_____

4.4 Was the child started on TB treatment? ☐ Yes ☐ No ☐ Not Indicated If Yes, indicated date of starting TB treatment: ___/___/_____

N. EDUCATION

Did mother receive infant feeding education at any time? ☐ Yes ☐ No ☐ Not Indicated

O. LINKAGES

1. Did patient receive nutrition assessment (documented in chart) during review period? ☐ Yes ☐ No **If YES go to 2, if NO go to 3.**

2. Did the patient qualify for nutritional support? ☐ Yes ☐ No ☐ Not Indicated

2.1. If 'Yes' did the patient receive nutritional support? ☐ Yes ☐ No ☐ Not Indicated

3. Did the patient receive the following services (during review period)? ☐ Water guard ☐ Insecticide treated nets ☐ Not Indicated ☐ None

4. Child's immunization status: ☐ Up to date ☐ Incomplete ☐ Vaccination needed ☐ Not indicated

P. DOCUMENTATION

1. Is the growth chart in the case note? ☐ Yes ☐ No **If YES go to 2, If NO go to 3**

2. Does the patient have the following measurements in the chart/ growth?

Baseline: ☐ Weight ☐ Height/Length ☐ MUAC

Last Visit: ☐ Weight ☐ Height/Length ☐ MUAC

Indicate value of weight and height/length measurement at last visit: ___.___ **kg and** ___.___ **cm**

3. Were the developmental milestones documented in the last visit? ☐ Yes ☐ No **(For children under 5 years)**

4. Is there a Care and Support assessment form in the patient's folder? ☐ Yes ☐ No

Q.MISSED APPOINTMENTS AND PATIENT TRACKING *(during review period)*

	Misssed appointment (dd/mm/yyyy)	Attempted contact	Date of attempted contact (dd/mm/yyyy)	Outcome of tracking	Reason for LTFU	Cause of death
1.	___/___/_____	☐ Yes ☐ No	___/___/_____			
2.	___/___/_____	☐ Yes ☐ No	___/___/_____			
3.	___/___/_____	☐ Yes ☐ No	___/___/_____			

CODES

Outcome of tracking
1 = LTFU 3 = Dead
2 = Transferred 4 = Returned to care

Reason for LTFU
1 = Spiritual 3 = Moved out of area
2 = Self discontinuation

Cause of death
1 = HIV related 3 = Don't know
2 = Non-HIV related

R. PATIENT STATUS (With documented evidence)

☐ Transferred out Date: ___/___/_____

☐ Dead Date: ___/___/_____

☐ Discontinued Care* Date: ___/___/_____

Reason ☐ Travel ☐ Alternative treatment ☐ Dissatisfaction ☐ Other ☐ Not Indicated

APPENDIX 3
NIGERIAQUAL
PMTCT AUDIT FORM

A. FACILITY DETAILS

FACILITY NAME: _____

STATE: _____ LGA: _____

IMPLEMENTING PARTNER: _____

NAME OF ASSESSOR: _____

Date of Assessment (dd/mm/yyyy): ☐☐ / ☐☐ / ☐☐☐☐

Review Period ☐☐ / ☐☐ / ☐☐☐☐ To ☐☐ / ☐☐ / ☐☐☐☐

B. LEVEL (Check one)

☐ Primary Health Centre ☐ Secondary Hospital

Tertiary Hospital

☐ Federal med. Centre ☐ Specialist Hospital

☐ Teaching Hospital

Ownership ☐ Public ☐ Faith-based

☐ Private

C. PATIENT TYPE

☐ Booked
- ☐ HIV-infected prior to booking
- ☐ Unknown status prior to booking

☐ Unbooked
- ☐ Known HIV-infected prior to arriving in labor
- ☐ Unknown status prior to arriving in labor

If unbooked, fill Section D and then skip to Section G

D. PATIENT DEMOGRAPHICS

Patient ID ☐☐ - ☐☐ - ☐☐☐☐☐☐ Hospital No. ☐☐☐☐☐☐ Patient ANC No. ☐☐☐☐

Last Name _____ RNL Serial No. ☐☐☐☐ Age ☐☐ Parity ☐

First Name _____ LMP (dd/mm/yyyy) ☐☐ / ☐☐ / ☐☐☐☐

EDD (dd/mm/yyyy) ☐☐ / ☐☐ / ☐☐☐☐ Date of 1st booking (dd/mm/yyyy) ☐☐ / ☐☐ / ☐☐☐☐ Gestational age at 1st booking ☐☐ weeks

E. ANC TESTING AND COUNSELING *(Complete this section for only booked patients)*

Woman counseled for HCT ☐ Yes ☐ No

Woman accepted HCT ☐ Yes ☐ No *(If YES, complete section E,if NO, go to section G)*

HCT done ☐ Yes ☐ No Date HCT done (dd/mm/yyyy) ☐☐ / ☐☐ / ☐☐☐☐

Time HCT done ☐ Before pregnancy (Past) ☐ ANC ☐ Labor/Delivery ☐ After delivery

HIV status ☐ Positive ☐ Negative Date of HIV diagnosis (dd/mm/yyyy) ☐☐ / ☐☐ / ☐☐☐☐

Infant feeding counseling received ☐ Yes ☐ No

Woman agreed to partner notification ☐ Yes ☐ No

CD4 ordered ☐ Yes ☐ No Date ordered ☐☐ / ☐☐ / ☐☐☐☐ Date done (dd/mm/yyyy): ☐☐ / ☐☐ / ☐☐☐☐

Date result received (dd/mm/yyyy): ☐☐ / ☐☐ / ☐☐☐☐ CD4 count ☐☐☐☐

WHO Clinical Stage ☐☐ ☐ Not Recorded

Patient found to be eligible for ART by Clinician ☐ Yes ☐ No ☐ Not Recorded

ARV received ☐ Yes ☐ No If yes, date regimen started (dd/mm/yyyy): ☐☐ / ☐☐ / ☐☐☐☐

Pre pregnancy HAART ☐ Yes ☐ No

Ante partum ARV: ☐ ZDV (only opt A) ☐ HAART for prophylaxis (opt B) ☐ HAART for treatment ☐ None ☐ Unknown/Not Indicated ☐ Other

Referred for ART: ☐ Yes ☐ No ☐ Not applicable ☐ Not Recorded

F. PARTNER REGISTER

☐ ☐ ☐ Partner of HIV + woman tested and received result ☐ Yes ☐ No ☐ Not Recorded Partner HIV status: ☐ ☐ ☐

NIGERIAQUAL
PMTCT AUDIT FORM

G. DELIVERY REGISTER *(Fill this section for all booked and unbooked patients)*

Date of delivery (dd/mm/yyyy): ☐☐ / ☐☐ / ☐☐☐☐

Maternal intrapartum ARV regimen received: ☐ Yes ☐ No

Maternal intrapartum ARV regimen received

☐ sdNVP+3TC+ZDV (opt A) ☐ HAART for prophylaxis (opt B) ☐ HAART for treatment ☐ None ☐ Unknown/Not Indicated ☐ Other

Mode of delivery: ☐ Vaginal ☐ Elective C section ☐ Emergency C section ☐ Other (specify): _____

Gestational age at delivery ☐☐ weeks

Episiotomy: ☐ Yes ☐ No

Infant feeding choice: ☐ Exclusive breastfeeding ☐ Exclusive breast milk substitute ☐ Mixed feeding ☐ Other (specify): _____

Maternal outcome: ☐ Alive ☐ Dead

Child status: ☐ Still birth ☐ Neonatal death ☐ Alive

H. CHILD FOLLOW-UP REGISTER

Was a Dried Blod Spot (DBS) sample collected? ☐ Yes ☐ No If Yes, date of collection: ☐☐ / ☐☐ / ☐☐☐☐

			RESULT	Date of Sample collection (dd/mm/yyyy)	Date Caregiver received results (dd/mm/yyyy)
1st PCR (EID)	Done: ☐ Yes	☐ No	☐ Positive ☐ Negative	☐☐ / ☐☐ / ☐☐☐☐	☐☐ / ☐☐ / ☐☐☐☐
2nd PCR (EID)	Done: ☐ Yes	☐ No	☐ Positive ☐ Negative	☐☐ / ☐☐ / ☐☐☐☐	☐☐ / ☐☐ / ☐☐☐☐
Rapid Test at <12 months)	Done: ☐ Yes	☐ No	☐ Positive ☐ Negative	☐☐ / ☐☐ / ☐☐☐☐	☐☐ / ☐☐ / ☐☐☐☐
Rapid Test at 18 months)	Done: ☐ Yes	☐ No	☐ Positive ☐ Negative	☐☐ / ☐☐ / ☐☐☐☐	☐☐ / ☐☐ / ☐☐☐☐

Referred to ARV clinic:

ARV prophylaxis given: ☐ Yes ☐ No

Did the infant receive NVP within 72 hours of delivery? ☐ Yes ☐ No

Did the infant receive any of the following:

Daily NVP until 1 week ☐ cessation of breastfeeding ☐ Daily NVP for 6 weeks ☐ sdNVP + daily ZDV for 6 weeks ☐ Other ☐ Not Recorded ☐

Infant received CPT: ☐ Yes ☐ No If YES, age of cotrim initiation: ☐☐ days ☐ weeks ☐ months

I. MATERNAL FOLLOW-UP REGISTER

Mother accessed Family planning: Yes No

If yes, method used: Hormonal Condom IUD Abstinence Other (specify):_____

Infant feeding method used: Exclusive breastfeeding Exclusive breast milk substitute Mixed feeding Other (specify):_____

Mother received CPT: Yes No

Maternal referral: Family Planning Support group Pap smear Other

Infant referral: EID OVC ART TB Evaluation

APPENDIX 4
LOGISTICS AUDIT FORM

FACILITY IDENTIFICATION

Name of Facility:_____

Facility Location

Date form filled (dd/mm/yyyy) ___/___/____

City/Town:_____ State:_____

LGA:_____

Facility Code: ___

Facility Type: ☐ (1) Warehouse ☐ (2) SDP

If SDP, mark type of facility
- ☐ (1) Tertiary Hospital
- ☐ (2) General Hospital
- ☐ (3) Primary Health Center
- ☐ (4) Other

If warehouse, mark level
- ☐ (1) Central
- ☐ (2) State
- ☐ (3) LGA

Source of commodities (Check all that apply):
☐ (1) FMOH ☐ (2) SMOH
☐ (3) NGO ☐ (4) Other (specify): _____

Type of HIV/AIDS Service:
☐ (1) ART Comprehensive Center ☐ (3) HCT Stand Alone
☐ (2) PMTCT/HCT Stand Alone ☐ (4) Other

Type of Support: ☐ (1) PEPFAR ☐ (2) Global Fund ☐ (3) Other ☐ (4) No Support

Interviewer(s):_____ Interview date (dd/mm/yyyy) ___/___/____

Name of person interviewed:_____ Job title of person interviewed:_____

Review Period ___/___/_____ To ___/___/_____ Total number of months in review period: ___

STANDARD STORAGE CONDITIONS

	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6
1. Does the facility have a policy of storing and issuing stock according to first-to-expire, first-out (FEFO) inventory control procedure?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
2. In practice, does the program manage and issue stock according to FEFO inventory control procedures at all levels?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
3. Are damaged/expired products removed from stock records?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
4. Does the facility have written guidelines for storage and handling of all products, at all levels of the system?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
5. Are there written guidelines for disposal of sharp, biohazardous material and other medical waste?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
6. Is the existing storage capacity adequate to handle the current quantities of products at all levels?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
7. Is temperature monitored?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
8. Did this facility meet the acceptable storage conditions?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

How many months, in the review period, did the facility meet acceptable storage conditions?

STOCK OUT RATE - Please indicate if there was a stock out for the following drugs (within the review period)

		MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6		
RTK	DETERMINE	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ ☐	☐ ☐
	STATPACK	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ ☐	☐ ☐
	UNIGOLD	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ ☐	☐ ☐
CTX	CTX TABS CTX Suspension	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ ☐	☐ ☐

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LOGISTICS AUDIT FORM

		MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6
ARVs		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

INVENTORY ACCURACY RATE

ITEM		MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	Accurate Stock balance?
1.	Physical Count							☐ Yes
	Calculated balance							☐ No
2.	Physical Count							☐ Yes
	Calculated balance							☐ No
3.	Physical Count							☐ Yes
	Calculated balance							☐ No
4.	Physical Count							☐ Yes
	Calculated balance							☐ No
5.	Physical Count							☐ Yes
	Calculated balance							☐ No

Please specify the number of items with accurate stock balance for items reviewed over the last 6 months |____|

ORDER FILL RATE *(within the current review period)*

Total number of items in the ARV/OI CRRIRF supplied in the correct quantity: Total ____	Number of items supplied:
number of items in the HIV Test kit CRRIRF supplied in the correct quantity: Total ____	Number of items supplied:
number of items in the Laboratory reagents CRRIRF supplied in the correct quantity:	Number of items supplied:

Percentage of quantities of each product expired per total quantities available for use (opening stock plus quantities received) in a defined period			
	ITEM/COMMODITY	Total quantities (no. of smallest units, e.g. pills) of each item lost due to expiry/expiration in the review period	Total available quantities (no. of smallest units, e.g. pills) of each item (opening stock plus quantities received) during the same period
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

APPENDIX 5
NIGERIAQUAL
PROGRAM MANAGEMENT AUDIT FORM

A. FACILITY DETAILS

Review Period ____ /____ /_____ To ____ /____ /_____

Name of Interviewee: _____
Designation: _____

Implementing partner: _____

Facility name:_____ State: _____

LGA: _____

Name of Assessor: _____ Date of Assessment: ___ /___ /_____

B. LEVEL (Check one)

☐ Primary Health Centre
☐ Secondary Hospital
☐ Tertiary Hospital (FMC)
☐ Tetiary Hospital (Teaching Hospital)

Ownership ☐ Public ☐ Faith-based ☐ Private

C. ORGANIZATIONAL STRUCTURES AND STRATEGIC PLANNING

Presence of a mission statement? ☐ Yes ☐ No

Presence of an organogram? (if yes, please ask to see) ☐ Yes ☐ No

Are all key positions in the organizations chart filled by staff? ☐ Yes ☐ No

Presence of documented annual operational plan approved by the State or Federal government? ☐ Yes ☐ No

Annual operational plan available and sited? ☐ Yes ☐ No

Are HIV activities integrated into this plan? ☐ Yes ☐ No

Does the organization regularly evaluate its progress in implementing the annual operational plan? ☐ Yes ☐ No

How many activities were planned in the last 6 months? ___

D. STAFFING AND PERSONNEL

Are continuous professional training and education for staff adequately supported? ☐ Yes ☐ No

What is the total number of full-time staff in your organization? ___

What is the number of full-time staff who have received training in the past one year? ___

E. DATA MANAGEMENT AND SECURITY

Are data on organization outcomes routinely collected and used to monitor the quality of service delivery? ☐ Yes ☐ No

Is there a dedicated department or person responsible for management information systems? ☐ Yes ☐ No

Does your organization have automated systems to capture patient health information data? ☐ Yes ☐ No

Does your organization use the HMIS forms? ☐ Yes ☐ No

How many HMIS forms have been completed in the last 6 months? ___

What are the dates of submission for the last 3 reports?

Report 1 (dd/mm/yyyy) Report 2 (dd/mm/yyyy) Report 3 (dd/mm/yyyy)

Are there adequate processes in place to protect organization information? (clinical, financial and administrative) Yes No

Is there dependable power to ensure system security options are continually operable? Yes No

Is there reliable internet access and system security to transmit data reports? Yes No

APPENDIX 6
NIGERIAQUAL
FINANCIAL MANAGEMENT AUDIT FORM

A. FACILITY DETAILS

Review Period ____ / ____ / _____ To ____ / ____ / _____

Name of Interviewee: _____

Designation: _____

Implementing partner: _____

Facility name:_____ State: _____

LGA: _____

Name of Assessor: _____ Date of Assessment: ___ / ___ / _____

B. LEVEL (Check one)

- ☐ Primary Health Centre
- ☐ Secondary Hospital
- ☐ Tertiary Hospital (FMC)
- ☐ Tetiary Hospital (Teaching Hospital)

Ownership Public ☐ Private ☐

C. CHART OF ACCOUNTS

Are the date, description and amount of every transaction recorded in a cashbook? Yes ☐ No ☐

Are all transactions recorded and updated at least weekly? Yes ☐ No ☐

Existence of a standard chart of accounts used to code all the financial transactions in the cashbooks? Yes ☐ No ☐

Is the same chart of accounts used to write budgets and financial reports? Yes ☐ No ☐

D. REPORTING

Do you prepare monthly financial report? Yes ☐ No ☐

How many financial reports have been prepared and submitted in the last six months? ___

Dates at which monthly financial reports were submitted in the last 3 months.

__ __ / __ __ / __ __ __ __ Month 1 (dd/mm/yyyy)

__ __ / __ __ / __ __ __ __ Month 2 (dd/mm/yyyy)

__ __ / __ __ / __ __ __ __ Month 3 (dd/mm/yyyy)

Is an audit carried out of the organization once per year, by a qualified external audit? ☐ Yes ☐ No

Are accounting and finance records kept manually or computerized?

☐ Computarized ☐ Mixed computarized and manual ☐ Manual

E. INTERNAL CONTROL

Are all the cash kept in the office kept in a locked cash box or safe with restricted access? ☐ Yes ☐ No

Are all assets owned by the organization recorded in an asset register? ☐ Yes ☐ No

Asset inventory exercise carried out in the last one year? ☐ Yes ☐ No

How often is this exercise done in a year? ___

Appendix 7: Random Number List (RNL) – Sample

i. ADULT RNL SAMPLE AND PEDIATRIC RNL SAMPLE

SN	PEPFAR_NO	HOSP NO	FOLDER STATUS(found/not found)	DATE LAST SEEN (before the review period)	Tick if Excluded and Indicate Reason (Missing folder, Died or Transferred before Review period; PMTCT, PEP)	INDICATE IF AUDITED / NOT AUDITED	INITIALS

ii. PMTCT RNL SAMPLE

CATEGORY 1 - ANC BETWEEN JULY - DEC. 2013

S/N	HOSP NO	INDICATE IF AUDITED / NOT AUDITED	INITIALS

CATEGORY 2 - UNBOOKED HIV+ DELIVERED IN THE FACILITY JAN - JUNE 2013

S/N	HOSP NO	INDICATE IF AUDITED / NOT AUDITED	INITIALS

ALL DELIVERIES BETWEEN JAN - JUNE 2013

S/N	HOSP NO	INDICATE IF AUDITED / NOT AUDITED	INITIALS

ALL DELIVERIES BETWEEN JULY - DEC. 2011

S/N	HOSP NO	INDICATE IF AUDITED / NOT AUDITED	INITIALS

Appendix 8 HIVQUAL Sample Size Chart

i. **Sample size derivation table**

Population Size	**Sample size for a 95% CI to have a width of 0.16**
Up to 20	**All**
30	**26**
40	**32**
50	**38**
60	**43**
70	**48**
80	**53**
90	**57**
100	**61**
101-119	**67**
120-139	**73**
140-159	**78**
160-179	**82**
180-199	**86**
200-249	**94**
250-299	**101**
300-349	**106**
350-399	**110**
400-449	**113**
450-499	**116**
500-749	**127**
750-999	**131**
1000-4999	**146**
5000 or more	**150**

ii. **New York State Department of Health's 95% CI sampling guide for patient satisfaction surveys**

HIV Program Caseload	**Minimum Sample Size**
Less than 50	All patients up to 30
51-100	40
101-500	75
501-1000	100
More than 1000	125

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