A Case Study to Measure National HIV Monitoring and Evaluation System Strengthening

Côte d'Ivoire

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Stakeholders and Key Informants: Kouame Abo (Director of the National HIV Care and Treatment Program, PNPEC); Armand Abokon (Director, Health Systems Strengthening and Operational Research, ARIEL); Nicole Aboua (Charge de Suivi et Evaluation, DRSLS Abidjan, Direction Regionale, Abidjan 2); Marie-Solange Achou-Tchimou (Chef de Service M&E, DRSLS Abidjan, District de Treichville Marcory); Franck-Alex Ahoty (Information Dissemination Director, DIPE/DPSES); Eric Alladé (Chef de Service Traitement et Analyse les donees, DIPE/DPSES); Prosper Allechi (Chef de District, Dimbokro); Kassy Roger Angaman (Resp S&E, MFFE/PN-UE); Roger Angaman (Chef de Service M&E, PNOEV et DPED); Kouadio Dandama (M&E Staff, PLS HV); Charles Bila (Statistician, DIPE); Patrice Bosso (M&E Advisor, UNICEF); Jean-Bapist Brindou (Directeur, DRSLS N'Zi Iffou); Eric Coulibaly (Manager for Quantification and Procurement, SCMS [Supply Chain Management System]); Nicole Dakouri (Chef de Service Information Strategique, ACONDA); Florence Damey (Director-Surveillance, DIPE); Aka Laurence Ebah (CT S&E, ARIEL Glaser); Marie Laure Essis (Doctor, INSP); Michel Guella (Director, DIPE/DPSES); Roger Guinan (IT Advisor, DIPE); Nathalie Irie (Technical Advisor-Quantification, SCMS [Supply Chain Management System]); Bini Kobena-Kra (Evaluation and Health Action Sub-Director, DIPE/DPSES); Eric Kobenan (M&E Assistant, SEV CI); Karine Kodo (Coordinatrice Cellule de Gestion des ARV, Pharmacie de la Sante Publique); N'dri Eric Konan (Administrateur de base de données, ACONDA); Jean-François Kouakou (Administrateur de base de données, ACONDA); Isabelle Kouame (Program Officer, UNAIDS); Ali Kouassi (GF Activity Coordinator, DIPE/DPSES); Kouakou Kra (Head of Studies, Direction Generale de la Santé); Nathalie Mahoussi (Responsable Suivi Evaluation de la Cellule de Gestion des ARV, Pharmacie de la Sante Publique); Félix Momine (Chef de Service Collecte les donnees, DIPE/DPSES); Sosthène N'guessan (Charge de la Qualité de Données, PNOEV et DPED); Bernard N'guessan (M&E Staff, PLS HV); Serge N'guessan (MIS Specialist, SCMS); Ibodé Valeri Oulai (M&E Information Assistant, PNLT); Justine Pango (M&E Officer, EGPAF); Adama Sanogo Pongathie (Deputy Director, DIPE); Yaya Samake (Charge de Suivi et Evaluation, PNOEV et DPED); Kanbou Edouard Sansan (Head, M&E, CARITAS-CI); Hyppolite Sihi (Deputy Director of M&E of Community Programs, DPSES); Marcel Tchodo (Program Assistant, CECI); Margarite Thiam (Directeur de la programme, PLS HV); Salamata Traore (Coordinator, Interventions and Education, PLS HV); Zanga Moise Tuho (Head of the Strategic Information Department, PNPEC); and Venance Wongnin (M&E Chief, PLS HV).

USAID-Washington Advisors: Rachel Lucas (Senior Technical Advisor, Office of Population and Reproductive Health, USAID) and Erin Balch, (Public Health Analyst, Office of HIV/AIDS, USAID) provided technical review, Ana Diapovic Scholl (M&E Advisor, Office of HIV/AIDS, USAID) and Gaelen Ritter (Program Assistant, USAID) provided support.

The MEASURE Evaluation Country Team in Côte d'Ivoire: Léontine Gnassou (Resident Advisor); Edwige Bosso (M&E Advisor); Moussa Traore (Statistics, MEASURE Evaluation and GTT HMIS); and Romain Tohouri (IT Advisor).

The MEASURE Evaluation Technical Team: Shannon Salentine (Activity Lead and Principal Investigator, ICF International); Verne Kemerer (Lead Consultant and Institutional Team Leader, ICF International); Siân Curtis (Evaluation Specialist, Carolina Population Center, University of North Carolina, Chapel Hill); Heidi Reynolds (Deputy Director HIV and other Infectious Diseases, Carolina Population Center, University of North Carolina, Chapel Hill); David Hotchkiss (JP Morgan Chase Professor of Health Care Finance and Vice Chair Department of Global Health Systems and Development, Tulane School of Public Health and Tropical Medicine); Stephanie Mullen (Principal Investigator, JSI); Tara Nutley (Senior Technical Specialist, Futures Group); Christina Bernadotte (M&E Officer, Carolina Population Center, University of North Carolina, Chapel Hill); Caitlin Chapman (Assistant M&E Officer, Carolina Population Center, University of North Carolina, Chapel Hill); Ashley Garley (Associate, ICF International); Amy Handler (Graduate Research Assistant, Carolina Population Center, University of North Carolina, Chapel Hill); and Josh Kizler (Analyst, ICF International).

Executive Summary

Background: Monitoring and evaluation (M&E) are integral and individually distinct parts of program preparation and implementation. They are critical tools for forward-looking strategic positioning, organizational learning, and sound management. Monitoring and evaluation are meant to influence decision-making, including decisions to improve, reorient, or discontinue the evaluated intervention or policy; decisions about wider organizational strategies or management structures; and decisions by national and international policy makers and funding agencies.[1]

To a large degree, monitoring and evaluation depend on sound health information systems with reliable, timely, high-quality input and usable and available information output. National governments and subnational entities need this information to set policy, plan for needed resources, and design and implement effective, targeted programs. At the global-level, donors and partners use the information to track progress toward the goals of special initiatives in low-resource countries, such as the President's Emergency Plan for AIDS Relief (PEPFAR),[2] the President's Malaria Initiative[3], Family Planning 2020[4], and Ending Preventable Child and Maternal Deaths,[5] among others. The stronger a health information system is, the more available, accurate, and useful the information output is to meet the various needs. Global investment, therefore, should continue to support sustainable country-led health information systems.

Measurement of those monitoring and evaluation (M&E) systems strengthening has proven difficult from technical and political perspectives (OED 2005; Porter et al. 2012). Evaluations of the success of systems strengthening must take into account the specific sensitivities of environments where multiple donors, investors, and recipients operate when crafting findings and recommendations (Bennett et al. 2006; IOM 2013, 39). This case study of Côte d'Ivoire was successful in documenting the M&E system strengthening interventions and investments from 2007–2012 because it produced evidence of how the systems have been strengthened and identified the remaining existing needs to further strengthen the M&E system.

Since 2007, the Côte d'Ivoire national HIV M&E system has been returning to the regular collection of routine data, with collation and report production now centralized and harmonized among development partners and government. By 2010, a new information system had been rolled out and a new National

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[1] UNICEF, Programme Policy and Procedures Manual: Programme Operations, UNICEF, New York, Revised May 2003, pp. 109-120.

[2] Since 2005, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) is the U.S. Government initiative to help save the lives of those suffering from HIV/AIDS around the world.

[3] Since 2005, the President's Malaria Initiative (PMI) strives to reduce the intolerable burden of malaria and help relieve poverty on the African continent.

[4] Family Planning 2020 (FP2020) is a global partnership that supports the rights of women and girls to decide, freely, and for themselves, whether, when, and how many children they want to have.

[5] On June 25, 2014, the U.S. Agency for International Development (USAID) and the Governments of Ethiopia and India, in collaboration with UNICEF and the Bill & Melinda Gates Foundation, came together for a high-level forum called Acting on the Call: Ending Preventable Child and Maternal Deaths to celebrate progress, assess the challenges that remain and identify the steps needed to sustain momentum in the future.

Strategic Plan, 2011–2015 (CNLCS, 2012) was finalized. The current system assigns data management and reporting capacities to the Epidemiologic Surveillance Officer (Chargé de Surveillance Epidémiologique, or CSE) at the district level, with data flowing from facilities and social work centers to districts, then regions, and finally the national or central level collates and translates data into reports. In 2010, a workshop, "12 Components M&E System Strengthening," was held to address the lack of data management personnel in the national HIV M&E system. The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and The Global Fund provided funds and training, and data managers were put to work to reduce the burden on districts while also improving data quality. This laid the foundation for the development of the Management Tool for Electronic Patient Files, referred to as SIGDEP, which contains an HIV database. Between December 2010 and March 2011, sporadic violence shook Côte d'Ivoire, the third crisis in just over a decade. The crisis clearly interrupted on-going HIV M&E systems strengthening.

Methodology: This case study used a mixed-methods retrospective approach. It drew information from a participatory self-assessment to determine the most significant changes experienced by stakeholders in the improvement of the HIV M&E system, key informant interviews obtained through a semi-structured questionnaire, and extraction of data from documents and routine information systems to compile selected indicators to measure M&E system performance. Côte d'Ivoire was selected deliberately after a review of the 12 PEPFAR focus countries in Africa, based on donor interest and the level of U.S. Government investment in HIV strategic information over the last 5 years. Researchers made two data collection visits to Côte d'Ivoire in August 2013 and November 2013. The objective of the first visit was to identify areas of improvement in the HIV M&E system. During the second visit, researchers collected data through key informant interviews and in a verification workshop. Data analysis was both qualitative and quantitative.

Most Significant Changes Identified: The following five most significant changes were identified during the self-assessment workshop, using an adapted version of the 12 Components M&E Systems Strengthening Tool (UNAIDS 2010):

1. Indicators and data collection tools were harmonized and the Indicator Dictionary was produced to improve reporting processes.
2. National databases to process and manage HIV-related data were deployed, with manuals to accompany them, all designed to improve data quality.
3. The National Care and Treatment Program (Le Programme National de Prise en Charge Médicale des Personnes Vivant avec le VIH, or PNPEC) and the National Orphans and Vulnerable Children Program (Programme National de Prise en Charge des Orphelins et Enfants Vulnérables, or PNOEV) adopted the National Supportive Supervision Guide for HIV and Orphans and Vulnerable Children (OVC) to improve facility and community-based data.
4. Surveys and surveillance produced data for the production of a new National Strategic Plan in 2009.
5. Evaluation and research findings were used in policy formation, planning, and implementation.

Most Significant Changes Explored: This case study of Côte d'Ivoire revealed that routine health information system strengthening has been achieved through the following activities:

- **Development of the HIV Indicator Dictionary.** The HIV Indicator Dictionary has standardized definitions and describes how to calculate each indicator. It includes 36

indicators—30 health indicators and 6 multi-sectoral indicators—and an additional 15 indicators for community-based services. The Indicator Dictionary, stocked in every health post, is used as a reference guide. Since the Indicator Dictionary became available in 2012, significant changes have occurred in how data quality is assessed through the availability of standard definitions, improved report completion and timeliness, reduction of errors identified in submitted reports, and decreased reporting burden.

- **Production of the Data Management and Procedures Manual.** The development of the Indicator Dictionary made existing data collection tools irrelevant to the new data requirements. In 2010, efforts began to produce a new manual. The Data Management and Procedures Manual, disseminated in 2012, comprises paper forms used to capture data, with definitions for each variable and instructions on how to collect and aggregate data. The manual formalizes procedures and provides institutional memory of standard operating procedures, which are designed to reduce errors, answer questions, and share skills. The manual needs to be updated with explanations that describe the use of the data collection tools.
- **Deployment of three national databases to process and manage routine data.** Three new national databases were deployed: (1) a national HIV/AIDS electronic patient monitoring system (SIGDEP) was developed cooperatively by Côte d'Ivoire's Directorate of Information Planning and Evaluation (Direction de l'Information, de la Planification et de l'Evaluation, or DIPE) and the Ministry of Health and Fight Against AIDS (Ministère de la Santé et de la Lutte Contre le SIDA, or MSLS), and MEASURE Evaluation, which is the USAID Global Health Bureau's primary vehicle for supporting improvements in monitoring and evaluation in population, health, and nutrition worldwide. The SIGDEP software and its user manual provide standard data collection procedures in facilities that serve a minimum of 200 HIV patients each month. SIGDEP uses unique patient identification numbers to track prescriptions and services delivered to each patient. (2) Monitoring Reporting System (MRS) is a national database that captures community-level data that are reported directly in national reports. (3) PNOEV is a database that captures data from orphans and vulnerable children services delivered in communities.
- **Enhancement of the Drug and Supply Chain Management System.** Before the establishment of the National Program to Support People Living with HIV (Programme National de Prise en Charge des Personnes Vivants avec le VIH, or PNPEC) Directive Patient Treatment Guidelines and the establishment of NMC, and supply procurement and distribution were uncoordinated. NMC is mandated to produce estimates of the quantities of drugs needed and procures them based on HIV sero-prevalence and the prevalence of co-morbidities among people living with HIV. Since 2008, stock-outs have been greatly reduced at the central level as a result of better coordination of purchases of core stocks.
- **Development of a national strategic information plan that includes second-generation HIV surveillance requirements.** Before 2009, no national strategic plan included surveillance activities. WHO introduced its second-generation guidelines in 2009, and Côte d'Ivoire reviewed its national-level surveillance activities in this context. The revised HIV National Strategic Information Plan 2011–2015 (Plan National de l'information Stratégique, or PNIS) incorporates these second-generation surveillance needs.

Conclusion: Quantitative measurement of M&E system strengthening has proven challenging; however, this case study of Côte d'Ivoire 's efforts to strengthen its M&E systems identified and described several most significant changes. This study used interviews with stakeholders and key informants and other evidence to verify real change in routine health information system strengthening through indicator and data collection tool harmonization, development of an electronic patient record system, and improvement in data quality through the collection, collation, and reporting data cycle. The study also showed that although much has been accomplished, considerations for future M&E system strengthening assessment and implementation should account for a systems thinking approach[6] to strengthen a country-led M&E system. Future interventions also will need to collaboratively and actively identify the work of each national agency and development partner to build partnerships that use substantive, productive feedback on what is and is not working.

[6] Alliance for Health Policy and Systems Research (AHPSR) and The World Health Organization (WHO) (2009). Systems thinking for health systems strengthening. Geneva (Switzerland): WHO.

Acronyms

ARV	Antiretroviral
CDC	United States Center for Disease Control and Prevention
CECI	Coalition des Entreprises de Côte d'Ivoire contre le Sida
CTAIL	Local Initiatives Technical Support Unit (Cellule Technique d'Appui aux Initiatives Locales)
CNLCS	National Counsel for the Fight Against AIDS (Conseil National de Lutte Contre le SIDA)
CSE	Epidemiologic Surveillance Officer (Chargé de Surveillance Epidémiologique)
DIPE	Directorate of Information, Planning and Evaluation (Direction de l'Information, de la Planification et de l'Evaluation)
DPED	Planning Directorate of Studies and Documentation (Direction de la Planification des Etudes et de la Doumentation)
DPSES	Directorate of Planning and M&E for AIDS (Direction de la Planification S&E de SIDA)
DRSLS	Regional Health and Fight against AIDS Directorate (Direction Régionale de la Santé et de la Lutte Contre le SIDA)
DHS	Demographic and Health Surveys (Enquete demographique et de sante et a indicateurs multiples)
GAVI RSS	Global Alliance for Vaccine and Immunization for Health System Strengthening
HMIS	Health Management Information System
INS	National Statistics Institute
INSP	National Public Health Institute
IT TWG	Information Technology Technical Working Group
MEMEASS	Ministry of Social Affairs (Ministère de l'Emploi, des Affaires Sociales et de la Solidarité)
MEN	Ministry of National Education (Ministère de l'Éducation National)
MFFE	Ministry of Families, Women and Children (Ministère de la Famille, de la Femme et de l'Enfant)
MIS	Management Information System (Système d'Information et de Gestion [SIG])
MLS	Ministry of the Fight Against AIDS (Ministère de la Lutte contre le SIDA)
MRS	Central Monitoring and Reporting System
MSHP	Ministry of Health and Public Hygiene (Ministère de la Santé et de l'Hygiène Publique)
MSLS	Ministry of Health and the Fight Against AIDS (Ministère de la Santé et de la Lutte contre le SIDA)

NGO	Nongovernmental Organization
NMC	National Monitoring Committee
NSP	National Strategic Plan for HIV/AIDS Prevention (Plan Stratégique National de Lutte Contre l'infection à VIH, le sida et les IST)
OCAL	Organisation du corridor Abidjan-Lagos
OVC	Orphans and Vulnerable Children
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PLS-PHV	National Program for the Fight Against AIDS in Highly Vulnerable Populations (Programme de Lutte contre le Sida en Direction des Populations Hautement Vulnérables)
PNCM	National Monitoring Supply Chain Plan
PNIS	National Strategic Information Plan (Plan National de l'information Stratégique)
PNOEV	National Support Program for Orphans and Vulnerable Children (Programme National de prise en charge des Orphelin et enfants Vulnérable)
PNPEC	National Program to Support People Living with HIV (Programme National de Prise en Charge Médicale des personnes Vivant avec le VIH)
PSP	Public Health Pharmacy (Pharmacie de la Santé Publique)
SCMS	Supply and Chain Monitoring System
SPD	Service delivery point
SIGDEP	National HIV/AIDS Electronic Patient Monitoring System
TWG	Technical Working Group
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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1. Background

This Côte d'Ivoire case study, a MEASURE Evaluation Project activity funded by the U.S. Agency for International Development (USAID), documents the most significant changes achieved through efforts to strengthen the country's monitoring and evaluation (M&E) systems. The study explored how the sum of multiple interventions delivered by various development partners and host-country agencies have contributed to produce valid, reliable data used for planning, program management, and national and global reporting.

Measuring M&E systems strengthening has proven to be difficult from technical and political perspectives. The difficulties stem from a variety of deficits: baselines were not established of how nascent M&E systems were functioning before interventions; indicators—their large numbers, lack of precision during selection, and lack of operationalized definitions—have not helped to evaluate systems strengthening; and routine monitoring systems, as well as the output data they were intended to produce, often were undermanaged (OED 2005; Porter et al. 2012). Evaluations of the success of systems strengthening must take into account the specific sensitivities of environments where multiple donors, investors, and recipients operate when crafting findings and recommendations (Bennett et al. 2006; IOM 2013, 39).

To organize this study and conduct the research, a U.S. study team used the *12 Components Organizing Framework* (UNAIDS 2008), adapted by MEASURE Evaluation from the UNAIDS guidelines, to assess the knowledge, skills, and competencies of people tasked with M&E responsibilities in a mixed-method retrospective approach that included (1) a document review, (2) key informant interviews,[7] and (3) measurement of selected indicators on system performance. The study team identified appropriate indicators, and Côte d'Ivoire stakeholders made the final selection. The framework's middle ring focuses on mechanisms used to collect, verify, and transform data into useful information.[8]

The Côte d'Ivoire case study, in adherence to the Three-Ones Principles,[9] identified the Ministry of Health and the Fight Against AIDS (Ministère de la Santé et de la Lutte Contre le SIDA, or MSLS) formally the Conseil National de Lutte Contre le SIDA (CNLCS), as the national AIDS coordinating authority. The One National HIV M&E System is the source for the national AIDS coordinating authority; it is the repository for all data sources and systems that are necessary for national coordination, including the United Nations General Assembly Special Session (UNGASS) report, the

[7] Key informants were identified during a participatory self-assessment workshop.

[8] The case study used these middle-ring concepts from the framework to evaluate Cote d'Ivoire M&E systems strengthening efforts: Component 7, Routine Monitoring; Component 8, Surveys and Surveillance; Component 9, National and Sub-national HIV Databases; Component 10, Supportive Supervision and Data Auditing; and Component 11, HIV Evaluation and Research.

[9] The Three Ones Principles for concerted country-level action have been recognized by international organizations and national governments to ensure effective coordination of national responses to HIV and AIDS. The principles are (1) one agreed HIV/AIDS Action Framework for coordinating the work of all partners; (2) one National HIV/AIDS Coordinating Authority with a broad-based multi-sectoral mandate; and (3) one agreed HIV/AIDS country-level monitoring and evaluation system.

U.S. President's Emergency Plan for AIDS Relief (PEPFAR), and other international development partner reporting (UNAIDS, 2004).

Figure: The 12 Components of a Functional M&E System

Source: UNAIDS MERG, 2008

The case study goal was to document efforts (activities and investments) in M&E system strengthening that occurred from 2007–2012. Because any intervention in a system has an effect on the overall system (AHPSR and WHO, 2009), these activities and investments influence the availability and use of HIV information. The availability and use of HIV information then can be used to produce evidence-based lessons about measuring M&E systems strengthening activities across the case study countries. The case study objectives are to (1) produce evidence of how M&E systems have been strengthened from 2007–2012 in two to three countries (2) develop country-level case studies to identify M&E system progress and strengths and identify existing needs for strengthening M&E systems.

This Côte d'Ivoire case study, one of these country case studies, answers the overarching research questions: (1) How do key stakeholders perceive changes in the national-level commitment to its health information systems (a subset of the M&E system) during the course of M&E systems strengthening interventions? (2) How has the M&E system performance improved as a result of M&E systems strengthening interventions? (3) How has the capacity of individuals—and an organization's ability to absorb and put to use that capacity—improved as a result of M&E system strengthening? and (4) To what degree does the M&E system draw its data directly from national health information systems?

2. The Ivoirian Context

Based on donor interest and the level of U.S. Government investment in HIV/AIDS strategic information over the last 5 years, Côte d'Ivoire was selected after a review of the 12 PEPFAR focus countries in Africa. Table 1 lists U.S. investments in Côte d'Ivoire from 2007–2013.

Table 1: PEPFAR Funding Allocated to Côte d'Ivoire for Strategic Information, by Year and Agency (U.S. dollars)

Agency	HVSI FY2007	HVSI FY2008	HVSI FY2009	HVSI FY2010	HVSI FY2011	HVSI FY2012	HVSI FY2013
USAID	1,160,000	1,836,000	2,769,000	2,310,000	2,400,000	1,983,000	1,550,000
Centers for Disease Control and Prevention (CDC)	3,311,060	3,553,000	4,229,000	1,300,100	400,000	1,150,000	1,150,000
Department of Defense (DoD)	0	0	0	0	140,000	0	100,000
National Institutes of Health (NIH)	0	0	200,000	440,000	0	0	0
Total	**4,471,060**	**5,389,000**	**7,198,000**	**4,050,100**	**2,940,000**	**3,133,000**	**2,800,000**

Source: PEPFAR, 2013

After a U.S. study team scoping mission in August 2013 to determine technical, program, and logistical eligibility, Côte d'Ivoire was deemed eligible for inclusion in the case study based on its demonstrated technical progress in HIV and AIDS M&E systems strengthening and the level of PEPFAR strategic information funding under PEPFAR I and PEPFAR II. This case study was undertaken in close collaboration with MSLS through the USAID Mission in Abidjan. The time and demands of this case study were balanced against other core and field-funded MEASURE Evaluation activities during the proposed study duration. MEASURE Evaluation, which is the USAID Global Health Bureau's primary vehicle for supporting improvements in monitoring and evaluation in population, health, and nutrition worldwide, also is funded by PEPFAR to work on HIV and AIDS programs and to help identify data needs, collect and analyze technically sound data, and use that data for health decision making.

Côte d'Ivoire has a general HIV sero-prevalence of 3% (World Bank 2013, WHO 2011). Côte d'Ivoire's HIV epidemic is generalized across the country, with markedly higher prevalence levels for females compared to males (6.4% compared to 2.9% for all ages) (CDC, MLS, INS, and ORC Macro, 2005). Higher prevalence in urban than rural areas (4.3% versus 3.1%) and in Abidjan (5.1%) compared with Central-West areas (2.2%) (INS 2011–2012, PEPFAR 2011). Most-at-risk populations include sex workers, men who have sex with men, sero-discordant couples, uniformed services workers, economically vulnerable women and girls, transportation workers, migrants, prisoners, and orphans and

vulnerable children. Post-conflict violence and an associated increase in sexual assault also have been attributed as a risk factor for transmission (CNLCS 2012, PEPFAR 2011). Sexual assault, however, is not unique to politically unstable times; significantly, 17% of women reported rape as their first sexual act (PEPFAR 2011).

PEPFAR funds roughly 70% of Côte d'Ivoire's AIDS interventions, and UNAIDS coordinates much of the efforts with The World Bank and The Global Fund, two primary progressive investors. The Côte d'Ivoire ministries of Health, Education, Social Affairs, and Agriculture have streamlined HIV activities and collaborate in the response under CNLCS coordination (CNLCS 2011). PEPFAR-supported programs implemented in collaboration with the government of Côte d'Ivoire include the provision of basic health care and support for people living with HIV, integrated tuberculosis and HIV services, and orphans and vulnerable children (OVC) programs (PEPFAR 2011).

MSLS acts as the main governing body in the response against HIV. The response is divided into four pillars: (1) prevention, (2) treatment and support, (3) impact mitigation, and (4) governance of the national response. Côte d'Ivoire's National HIV Strategic Information Plan (Plan National de l'Information Stratégique, 2011–2015, or PNIS) is tied directly into the National Strategic Plan 2012–2015 (Plan Stratégique National de Lutte Contre l'infection à VIH, le sida et les IST, or NSP), which was produced by CNLCS (CNLCS 2011).

Indicator data are collected at health and community facilities using various tools and registers. Each facility then collates its data into a monthly report and submits the reports to the district. The district collates these reports and verifies the data monthly before a quarterly review with regional oversight. The verified data are then submitted to the central level, which reviews the data and produces a national report and respective reports for various international donors.

Côte d'Ivoire's health information system is under the management of the Directorate of Information, Planning, and Evaluation (Direction de l'Information, de la Planification et de l'Evaluation, or DIPE). The health information and M&E systems are tied directly to one another; all data used to evaluate interventions are sourced directly from the health information system. DIPE is responsible for collecting, processing, and disseminating system information, as well as producing annual reports on the data. Three tiers of health organizations work to ensure data flow. At the district level, hospitals and health facilities are the first point of collection. Regional and district hospitals operate at the secondary DIPE level, and research institutions and national public hospitals function at the top level.

DIPE is responsible for the regular collection, transmission, review, analysis, and dissemination of health information. DIPE has three subdivisions that focus on routine data collection: (1) Division of Health Information manages data processing and analysis and provides feedback, (2) Division of Planning and Health Cards, and (3) Division of Evaluation, which includes research and studies (CNLCS 2011).

Under the Health Information Division, the Local Initiatives Technical Support Unit (La Cellule d'Appui Technique au Système d'Information Sanitaire, or CTAIL), is responsible for oversight of SIGDEP, a computerized recordkeeping system at health facilities that serve at least 200 HIV patients a month. Data are reported monthly from the health facility reporting level up to the next regional and district level. District regional and central level facilities also can use software called SIGVISION, which collates all national health information system data, to compile data. While the data collection scheme is well elaborated in the PNIS (CNLCS 2011), CNLCS notes that the system is not functioning fully and suffers

from frequent problems, such as schedules are not always followed and data are not always properly aggregated at regional levels.

2.1 The Health System and National HIV M&E System

The routine health information system was functioning and producing routine data from 1995–2000 and was supported largely by The French Cooperation, France's Overseas Development Assistance. No M&E system was available for impact mitigation from 2000–2007 (i.e., OVC). From 2000, software used to collect and manage data did not work, and the Epidemiologic Surveillance Office (Chargé de Surveillance Epidémiologique, or CSE) stopped collecting data from facilities, and reports were not made because no standard paper-based tools had been developed. Since 2007, the system has been returning to the regular collection of routine data, with collation and report production now centralized and harmonized among development partners and the government. By 2010, the new information system had been rolled out and a new National Strategic Plan, 2011–2015 (CNLCS 2012) was finalized. The current system is oriented to data management and reporting capacities at the CSE district level, with data flowing from facilities and social work centers to districts, then to regions, and finally collated and translated into reports at the national or central level.

The Ministry of Health and Public Hygiene (MSHP) reorganized DIPE to manage health data flowing through CNLCS and MSHP systems. This sparked progressive investment from The Global Fund and PEPFAR, which also pushed for a review and revision of data collection tools, indicators, and focus diseases. MSHP and CNLCS were merged and became the Ministry of Health and Fight Against AIDS (MSLS), with CNLCS still continuing to report to its Director and Secretariat. CTAIL was incorporated into regional directorates, which managed the health data but excluded community-based data, resulting in an absence of community data from the 2011 and 2012 national reports. During this period, nursing staff served as district-level data managers. Nurses were selected to attend a class and become CSEs, thereby ending their careers as nurses, which generated motivation for data management and reporting activities.

In 2010, a 12 Components M&E System Strengthening Workshop, held through the M&E Technical Working Group (TWG), identified a lack of data management personnel in the national HIV M&E system. PEPFAR and The Global Fund provided funds and training, and data managers were put to work to reduce the burden on districts and improve data quality by using the developed and standardized tools and indicators to collect, collate, and report data to the district level. This laid the foundation for the development of SIGDEP, the management tool for electronic patient files.

From December 2010–March 2011 sporadic violence shook Côte d'Ivoire after a political crisis and a contested election. This was the third crisis (the first two were 1999–2000 and 2002–2004, known as the First Ivoirian Civil War) in just over a decade, and the latest violence has been described as the Second Ivoirian Civil War. This crisis clearly interrupted on-going HIV M&E systems strengthening.

3. Methodology

The methodology for this case study has a number of advantages, particularly for an empirical, in-depth inquiry that investigates a contemporary phenomenon in its real-world context with multiple partners investing in one HIV M&E system. The focus of this type of inquiry can expand, narrow, and shift as information saturation and convergence is reached and as new relationships and factors emerge (LaFond et al. 2012).

This case study used a mixed-method retrospective approach that included (1) a document review, (2) a participatory self-assessment (3) key informant interviews,[10] and (4) measurement of HIV M&E system performance through the use of selected outcome-level indicators.

3.1 Literature Review

In preparation for the case study, a literature review was conducted to identify and summarize information from peer-reviewed journal articles published after 2001 that included evidence of improvements in M&E systems in the health sector of low-income countries and methods applied to assess or monitor change in M&E systems. Reviewers also compiled and summarized technical tools and guidance on assessing and measuring system strengthening.

Among the 629 independent articles originally identified, 103 met additional selection criteria after two rounds of review. Among the 103 articles were six examples of evidence for M&E system strengthening where both pre- and post-data were used to evaluate changes in M&E system performance as a result of a specific activity or intervention. Another 17 peer-reviewed journal articles explained various methods for assessing specific components or M&E system strengthening activities. Based on the findings, reviewers identified clear gaps in the evidence base. These included the need for more evidence of system-wide improvements in M&E performance and objective, measurable outcome-level evidence that addresses system components.

3.2 Participatory Self-Assessment

A study team comprising U.S.-based and Ivorian-based MEASURE Evaluation staff made two data collection visits to Côte d'Ivoire in August and November 2013. On the first visit, the team identified areas of improvement in the HIV M&E system through a participatory self-assessment workshop with 17 high-level stakeholders chosen for their knowledge and experience in working with the M&E system. The stakeholders represented host-country agencies that included line ministries, the United Nations family, PEPFAR implementing partners, and civil society and community-based organizations (see Appendix 1, List of Participatory Self-Assessment Participants). The workshop used the *Most Significant Change Methodology*, which elicits group prioritization through a participatory self-assessment (Davies and Dart 2005). The self-assessment used the 12 Components Monitoring and Evaluation Systems Strengthening Tool, adapted by MEASURE Evaluation from the UNAIDS guidelines to assess the knowledge, skills, and competencies of people tasked with M&E responsibilities (UNAIDS MERG 2010).

[10] Key informants were identified through a participatory self-assessment workshop.

The adapted tool helps identify the most-significant changes in the middle-ring components of the national HIV M&E system from 2007–2012: Component 7, routine monitoring; Component 8, surveys and surveillance; Component 9, databases; Component 10, supportive supervision and data auditing; and Component 11, research and evaluation. (See Appendix 2, The 12 Components Monitoring and Evaluation Systems Strengthening Tool Adapted for the Case Study.)

The participatory self-assessment workshop followed a three-step process. First, participants self-selected into a group that responded to questions related to one of the middle-ring components. Next, each group used the adapted tool to guide discussion, agree on a response, and then provide an evidence source (key informants, existing datasets, reports produced, and acknowledgements from line ministries and development partners on the success of an HIV M&E-related activity, set of activities, and deliverables) for each response and relevant indicators. Finally, groups reported to the plenary and verified each other's findings. The case study engaged stakeholders by asking them to identify the most significant changes during the workshop, which is why groups were asked to provide detailed responses only to questions answered "Yes, Completely" and "Yes, Mostly."

Engaging stakeholders to identify the most significant changes that resulted from M&E systems strengthening interventions raised interest at the start of the case study, defined the domains of change, and collected stakeholder experiences and opinions. The outputs of self-assessment guided adaption of the key informant interview guide, identified documents to be gathered, clarified the list of quantitative indicators, and identified sources for evidence, such as supporting documents and available M&E system performance data.

3.3 Key Informant Interviews

The study team then conducted 35 key informant interviews with host-country agencies, including line ministries, regional and district health officers, PEPFAR implementing partners, and the UN family. (See Appendix 3, List of Key Informants.) Interviews were conducted using a semi-structured guide (see Appendix 4, Key Informant Interview Guide) that was translated by the interview team. Each interview, conducted primarily in French with occasional lapses in English, was administered by an interviewer, an observer, and a note-taker. All interviews were recorded, then the recordings were transcribed and translated into English, and then the transcripts were compared against the notes taken during the interviews. The purpose of these interviews was to obtain additional details and the perspective of the interviewee on the most significant changes that were identified.

At the end of the data collection and key informant interviews, the study team conducted a verification workshop for a review of initial findings by self-assessment participants, key informants, and other stakeholders. (See Appendix 5, List of Verification Workshop Participants.)

3.4 Secondary Analysis to Determine M&E System Strengthening Outcomes

To address the gap of objective quantitative outcome-level data on M&E system strengthening, the team reviewed existing indictors from global resources derived from measuring M&E system performance to identify outcome-level indicators that could be used to demonstrate performance improvement through the secondary analysis of data sources that should already be available in a functional HIV M&E system. After selection of the indicators, the team reviewed and revised the definitions and developed instructions for calculation and analysis. During the participatory self-assessment, participants reviewed

these indicators and agreed that they would be good measures to demonstrate outcome-level change in the M&E system. The complete list of indicators supported each of the middle-ring components and responded to the case study research questions. This list appears in Appendix 6: List of Indicators, Côte d'Ivoire.

3.5 Data Analysis

Data analysis was qualitative and quantitative. Qualitative data analysis involved researchers coding interview transcripts according to key themes, classifying the data, and then reviewing and summarizing the interview findings. The data analysis included a review of the interview notes, team discussions, and a cross-reference of interview data with collected quantitative data to identify and explore how multiple interventions led to success in M&E systems strengthening.

4. Most Significant Changes Identified During Self-assessment Workshop

The Côte d'Ivoire case study findings are organized according to the most significant changes identified during the participatory self-assessment workshop (see Section 3, Methods). The following paragraphs briefly describe the findings.[11]

HIV Indicator Dictionary Resulted in Significant Changes in Data Quality (Component 7): Before 2007, **Côte d'Ivoire's** national guidelines for entering data in health facility registers used to produce monthly and annual reports had many indicators that were no longer used for decision making. In 2010, when the Indicator Dictionary was introduced, significant changes resulted in how data quality was assessed. Now the Indicator Dictionary provides standard definitions and national guidelines that document the procedures for recording, collecting, collating, and reporting routine program monitoring data from civil society and community-based systems, and outputs of routine program monitoring contribute to the indicators defined in the national M&E plan.

SIGDEP and SIGVISION Deployed with Manuals on Mechanisms for Quality Control (Component 9): To improve the quality of HIV data, a supplemental SIGDEP manual of best practices was developed as a framework for quality control to ensure that data are captured accurately.

National HIV Care and Treatment Program and National OVC Program Adapted National Supportive Supervision Guide for HIV and OVC (Component 10): Since 2008, the National HIV Care and Treatment Program (Le Programme National de Prise en Charge Médicale des Personnes Vivant avec le VIH, or PNPEC) and the National Support Program for Orphans and Vulnerable Children (Programme National de Prise en Charge des Orphelin et Enfants Vulnérable, or PNOEV) adapted the national supportive supervision guide for HIV and OVC, developed materials, and reached consensus on them. Supportive supervision was conducted according to the national protocols in the 6 months preceding the case study. Supportive supervision for HIV and OVC has been

[11] A timeline of key achievements captured during the self-assessment workshop appears in Appendix 7.

implemented since 2009, using additional paper-based tools produced by PEPFAR and the Global Fund Direction Generale de la Santé, PNPEC, DIPE, and ARIEL.

Surveys and Surveillance Produce Data for the National Strategic Plan (Component 8): Data for NSP indicators are drawn from the results of surveys and surveillance data, which were conducted regularly until 2008.

All Studies and Research Results Used in Policy Formation, Planning, and Implementation (Component 11): Over the past decade, the ethics committee, which meets monthly and is housed at the CI Pasteur Institute, has been strengthened to approve research protocols as mandated. In 2011, during the development of the National Strategic Information Plan 2011–2015, a national evaluation used the 12 components of the M&E system assessment to identify all studies and surveys on HIV conducted to date. During the past decade, all results of studies and research have been used in policy formulation, planning, and implementation. Prime examples are (1) the identification of new highly vulnerable groups and the creation of a program in charge of these groups, which is the National Program for the Fight Against AIDS in Highly Vulnerable Populations (Programme de Lutte Contre le Sida en Direction des Populations Hautement Vulnérables, or PLS-PHV) and (2) the determination of the strategic priorities of the NSP 2012–2015.

5. Most Significant Changes Explored Through Key Informant Interviews, Document Review, and Available Data

This section discusses only the most significant changes identified by stakeholders during the participatory self-assessment workshop and then verified during the key informant interviews as changes substantively improved. These most significant changes then were reviewed substantively by stakeholders during the verification workshop, based on key informants and stakeholders agreeing that a change had happened and that it was significant. Most significant changes were excluded if the consensus among stakeholders and key informants was that it had not actually occurred or that it had been initiated but nothing had evolved from it. Data were available for two of the indicators identified for the Côte d'Ivoire case study (see Appendix 6) and presented in this section: (1) the percentage of M&E plan indicators reported against (for a strategic period or a fixed year, as defined by the national M&E plan) and (2) the percentage of expected reports received from districts on time. These findings are organized in three key areas: (1) routine health information strengthening, (2) drug and supply chain management, and (3) surveillance activities.

5.1 Routine Health Information System Strengthening

Routine data for the one national HIV M&E system in Côte d'Ivoire is drawn from multiple databases. SIGVISION, the health management Information system (HMIS), is managed by DIPE and the decentralized level (district and region). Data from the community-level are managed with the Monitoring and Reporting System (MRS) by CTAIL and by the Directorate of Planning and M&E for AIDS (Direction de la Planification S&E de SIDA, or DPSES) at the central level. SIGLAB, SIMPLE One, and BIOS for laboratory and drugs, are managed by the Public Health Pharmacy (Pharmacie de la Santé Publique, or PSP). A most significant change in the national HIV M&E system has been the development and implementation of SIGDEP, which is specifically for HIV patient records and managed by DIPE.

SIGVISION, the national database for aggregated HMIS data, was developed in 2007 to collate HMIS data at the district and regional levels. It was not designed to manage HIV-related data. In 2008, SIGDEP was developed by revising SIGVISION paper-based tools to capture routine HIV data.

DIPE chairs the Information Technology Technical Working Group (IT TWG), created in 2008 to agree on a national platform and software implementation and to discuss relevant SIGVISION technical aspects to manage the implementation of all national health databases. A team in DIPE administers SIGDEP, and the IT TWG updates SIGVISION and SIGDEP as required and in line with MSLS organizational and health information systems. The vision of the IT TWG is to establish a single database for the health sector that includes HIV facility and community-based data streams and from which all partners can draw necessary data for reporting, program strengthening, and policy development.[12] Organizational members include PNPEC, Ambulatory Care and Consultation Unit (*L'Unité de Soins Ambulatoires et de Consultations*), MEASURE Evaluation, PEPFAR, the United States Center for Disease Control and Prevention (CDC), and PEPFARs' implementing partners.

At facility-based service delivery points, data are recorded on a paper monthly summary sheet at the facility and then reported to the CSE[13] at the district level, where the reports are collated and data quality assurance procedures are conducted. After the summary sheets are collated and validated, data are submitted by the district CSE to the regional CSE. The regional CSE reviews the submitted data for quality before entering it in SIGVISION. This quality assurance process pushes the data quality assurance process closer to the source of the data and the service delivery point, and thereby increases quality.

DIPE has divided Côte d'Ivoire into areas, which are subdivided into sectors. A technical support unit is then responsible for follow up with CSEs and the regional and district levels for data. Data are collected, cleaned, and collated at the central level to produce reports. Three types of reports are produced: (1) monthly HIV care reports, (2) monthly HIV cohort analysis reports, and (3) the HIV annual report (see Section 5.1.5, Performance of the M&E System).

Before the development of these data management systems, all routine health and HIV data were collected through a paper-based system that had significant and inherent data integrity challenges, long lag times between service delivery and data availability, and low report production. Data were captured as number of services-delivered and not by not by the number of clients receiving any combination of services, which resulted in large amounts of double-counting. In 2011, PEPFAR stopped funding physical data collection and requested that SIGDEP, an electronic data capture system that tracks HIV services delivered to patients, be used to assign unique identifiers and collect data to reduce double-counting.

5.1.1 The HIV Indicator Dictionary

Before 2010, multiple data management and reporting systems based on multiple indicator sets were uncoordinated for the following data:

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[12] The District Health Information Systems 2 (DHIS-2) is under development and will integrate community data and replace SIGVISION for national health information. A new version of SIGDEP, based on OpenMRS, is planned for patient records.

[13] The Center of Epidemiology Surveillance (Chargé de Surveillance Epidémiologique) operates at district and regional levels. Each center has a data manager who is responsible for quality assurance.

- The national health care system, through which HIV services are implemented, was collecting data through national registers and summary sheets and being administered by the HMIS through MSHP, which was combined into MSLS.
- Each PEPFAR implementing partner had its own tools and data collection, collation, and reporting processes.
- Each Global Fund implementing partner had its own tools and data collection, collation, and reporting processes, despite Global Fund's stated intention to rely on the national health information system.
- Each bilateral donor and nongovernmental organization (NGO) also had its own data management and reporting system.

These indicators, the national HIV indicator set, were not well-defined and lacked clear instructions to calculate numerators and denominators. The lack of standardization across programs, partners, and government made validity and reliability of reported data highly suspect, at best. PEPFAR and Global Fund, through their implementing partners, identified the lack of consistency and the need to standardize. Simultaneously, the government of Côte d'Ivoire was experiencing great difficulties in producing national reports, such as UNGASS 2010, as a result of the lack of data standardization and the indicator set.

In 2010, MSHP, MSLS, Ministry of Families, Women and Children (MFFE), Ministry of National Education (MEN), and Ministry of Social Affairs (MEMEASS) through the PNOEV participated in the Leadership Development Program (LDP) that was implemented by MEASURE Evaluation. One LDP output was the identification of a weak M&E system that produced poor data quality because the personnel who collected and collated data lacked standard indicator definitions. In 2009, the four ministries agreed to engage in a participatory process with all stakeholders engaged in HIV to develop the Indicator Dictionary.

The Indicator Dictionary (MSLS, PEPFAR, USAID and MEASURE Evaluation 2012) has standardized definitions and describes how to calculate each indicator. According to stakeholders and key informants, the Indicator Dictionary includes 36 indicators (30 in the health sector and 6 that are multi-sectoral). The Indicator Dictionary also includes 15 indicators for community-based programs. Previously, roughly 52 community indicators had been in use. The Indicator Dictionary has a complementary set of standard tools to aid data collection, collation, and reporting processes, housed in the Data Management and Procedures Manual (MEN 2011) (see Section 5.1.2: Data Management and Procedures Manual).

The Indicator Dictionary, stocked in every health post, is used as a reference guide for users to understand the numerator, denominator, and the indicator itself. The Indicator Dictionary also guides the trace and verification process from national to subnational levels and helps set yearly targets for each indicator. The Indicator Dictionary is a management and advocacy tool that has been used by PNPEC and PNOEV to request that The United Nations Children's Fund (UNICEF) integrate national indicators from the Indicator Dictionary into UNICEF's 2011 Côte d'Ivoire Case Study (UNICEF 2011).

Development of the Indicator Dictionary was led by MSLS, with technical support from MEASURE Evaluation through a consensus process among MSHP, MLS, MFFE, MEN, and MEMEASS. Development of the Indicator Dictionary began with production of indicator protocol sheets based on a review of indicators in use by PEPFAR, The Global Fund, implementing partners, and the National Health

Development Plan and shared by MSLS with PEPFAR implementing partners, Global Fund implementing partners, and NGOs. These indicator protocol sheets were then reviewed at the district level. Validation meetings were held to discuss the indicator sheets and to agree on one list of indicators that met indicator and data needs throughout the one HIV M&E system. Each partner and NGO came to these meetings with its own indicators and relevant tools to harmonize with national reporting requirements. Drafts of the Indicator Dictionary were then produced and reviewed to determine the availability of required data and how those data would be collected from the source and flow into selected indicators.

After indicators were agreed across partners, they were piloted, reviewed through a consensus process, and then revised and grouped into the finalized Indicator Dictionary. Following completion of the development process of the Indicator Dictionary in 2012, paper data collection tools were adapted to the selected indicators and incorporated in the Indicator Dictionary.

The Indicator Dictionary was reproduced for health facilities and community-based service delivery points and rolled out with a new training that used a cascade approach. DIPE trained the regions, the regions then trained the districts, and the districts trained constituent health facilities and community-based service delivery points. By the fourth quarter of 2013, roughly 75% of sites had received the Indicator Dictionary training. The remaining 25% are being trained by their respective donors.

The PNIS, 2011–2015 (CNLCS 2011) and the NSP, 2012–2015 (CNLCS 2012) were developed after the production of the Indicator Dictionary, which was a major contributing document to both plans. In principal, all indicators and their required data for the national HIV program M&E are harmonized and contained in these three documents; however, a review of indicators listed in the Indicator Dictionary and the National HIV M&E Plan, 2011–2015 reveal that they are not the same (see Section 5.1.5: Performance of the M&E System and Annex 6: List of Indicators Reported against in Annual Reports).

Since the Indicator Dictionary became available in 2012, significant changes in how data quality is assessed have occurred as a result of the availability of standard definitions. Government and partners are now using the same language—the same definitions, the same calculation methods, and the same tools to collect, collate, and report data. Since 2010, routine monitoring of the one HIV M&E system feeds data to the indicators defined in the Indicator Dictionary, in adherence to the National HIV M&E Plan (CNLCS 2011).

Key informants reported that the Indicator Dictionary has increased report completion and timeliness and reduced errors in submitted reports. According to study participants, before the Indicator Dictionary was developed, the estimated completeness of expected subnational reports reaching the central level was approximately 10%; the perception now is that the completeness of expected subnational reports rose to 95% completeness for 2012.[14] The increase is largely attributed to clarified indicator definitions and the instructions for calculating them. Capacity has improved through the use of the Indicator Dictionary as a reference guide to calculate an indicator's numerator and denominator, produce reports, and build balance sheets.

[14] No evidence, either document review or M&E system performance data, were available to corroborate this claim.

The Indicator Dictionary has reduced the reporting burden from facilities to district to region and to the national level, as well as from the national to the international level, as a result of the harmonization process. This also has reduced the workload on providers by incorporating indicators that help providers at the service delivery points. The complementary tool is integrated with screening visits and consultations, and one form is used for reporting.

The remainder of this section describes how routine data management and reporting systems in the national HIV M&E system have been strengthened (see Section 5.1.2, Data Management and Procedures Manual); the role of national databases, including SIGDEP (see Section 5.1.3, Databases); and how interventions have improved routine data quality (see Section 5.1.4, Data Quality).

5.1.2 Data Management and Procedures Manual

The development of the Indicator Dictionary made existing data collection tools, which were developed after the 2008 PRISM assessment (Aqil, Lippeveld, and Hozumi 2009), irrelevant to the new data requirements. In 2010, the process to revise data collection guidelines and produce the Data Management and Procedures Manual was initiated. This manual was developed for data collection from all tiers of the health sector, including HIV, with MEASURE Evaluation leading the process. It was disseminated in 2012 and comprises paper forms for data capture, with definitions for each variable and instructions on how to collect and aggregate data. MEASURE Evaluation supported the implementation and use at the regional level by disaggregating it by interventions (e.g., antiretroviral therapy, prevention of mother to child transmission of HIV/AIDS, testing and counseling, and orphans and vulnerable children) and setting up registers to track data. Previously these tools were unavailable.

The manual describes the tasks and time to collect, collate, and report; it outlines standard procedures for users (nurses, midwives, medical doctors, and others responsible for reporting from service delivery points) to follow, formalizes procedures, and provides institutional memory of standard operating procedures, which were designed to reduce errors, answer questions, and share skills. The manual needs to be updated with explanations that describe the use of data collection tools.

MEASURE Evaluation produced an initial draft, which DIPE reviewed. A second draft, based on DIPE's review, was produced and reviewed by MSLS directors. DIPE distributed the manual electronically to all regions, and MEASURE Evaluation distributed hard copies to all districts in six regions.[15] The manual has not been applied consistently at all service delivery points due to internal politics, differences in program implementation, and differing levels of buy-in among the range of service providers in the one M&E system. Stock-outs of the data management tools resulted from limited resources at DIPE, and districts were required to reproduce the paper-based tools on their own, which led to ad hoc revisions by service delivery points and introduced a threat to the reliability of reported data by deviating from standardized definitions and agreed-upon data elements. The stock-outs resulted because DIPE depended on MEASURE Evaluation to fully fund data forms production, but MEASURE Evaluation had budgetary obligations elsewhere. Another complication is that the manual is not used outside of the six regions where it was distributed originally.

[15] Abidjan 1-Grands Ponts, Abidjan 2, Kabadougou-Bafing-Follon, Poro-Tchologo-Bagou, Gbèkè, and N'zi-Iffou.

The Data Management and Procedures Manual remains a significant change because it provides (1) a common understanding of the stages of data management, (2) timing for the different stages of data management, (3) standardization of data collection tools, and (4) clear identification of stakeholders and their roles (MEASURE Evaluation 2014b). The manual also laid the foundation for the development of the Indicator Dictionary.

5.1.3 Databases

Efforts to transition from paper-based routine monitoring systems to electronic ones have focused on three databases at the national level: SIGDEP for routine HIV data and the MRS and PNOEV databases for community-level routine data.

SIGDEP: The origins of SIGDEP were in the Monistac software originally used by the PEPFAR implementing partner ACONDA[16] to electronically manage patient records. From August 2008, ACONDA began to migrate to SIG-VIH.[17] All migrations were performed without losing data. ACONDA led the data migration process and relied on DIPE to identify which sites would transfer data. Roll-out and buy-in to SIG-VIH was facilitated by sites' familiarity with Monistac. In 2009, DIPE changed the name of the application from SIG-VIH to SIGDEP in anticipation of the integration of other datasets, such as malaria and tuberculosis. SIGDEP Version 1.5.5 was released in October 2010.[18]

A virtual community of local developers was founded to share experiences, exchange ideas, address challenges, and find solutions together when implementing SIGDEP. DIPE and MEASURE Evaluation created this community to enable local developers to facilitate the expansion of SIGDEP and manage software updates. It comprises database developers and administrators from implementation partners (ACONDA, ICAP, EGPAF, ARIEL, HAI, and SEV CI) and members of the DIPE, CTAIL, MEASURE Evaluation, PSP, and PNPEC.

The IT TWG developed a user manual along with the SIGDEP software (MLS, PEPFAR, MEASURE Evaluation, ISPED, and ACONDA-VS 2012) to provide standard data collection procedures. The manual also provides guidance on software maintenance and data quality assurance through data monitoring. The user manual, designed for data managers in facilities, nurses, midwives, and medical doctors, describes standards of patient care. Data managers assign SIGDEP numbers and enter patient-level data. The user manual is updated each time a new functionality is added to SIGDEP.

SIGDEP is set up only in facilities that provide services to a minimum of 200 HIV patients per month. SIGDEP uses unique patient identification numbers to track prescription and services delivered to each patient, which has reduced the double-counting that plagued parallel data management and reporting systems that tracked services provided but not the number of patients who received a combination of

[16] http://www.acondavs.org/.

[17] ACONDA continues to report to DIPE and PNPEC through a parallel database every 6 months because SIGDEP Version 1.5.5 contains only 80% of the data elements need for reporting by PEPFAR's implementing partners.

[18] The latest SIGDEP version available is suite 4.28 of version RC3 1.5.5.

services. During the verification workshop, stakeholders reported that 60% of sites with more than 200 patients per month (320 out of 537) have SIGDEP installed. SIGDEP has yet to be installed at DIPE.[19]

Each district manages SIGDEP at each facility that provides services to fewer than 200 HIV patients per month. These smaller facilities use paper tools to collect data at the time of service delivery. These paper tools are then summarized, collated, and entered into SIGDEP at the district level. Key informants and verification workshop participants concurred that an 80% completion rate is needed for SIGDEP reporting at the district level before DIPE creates a national report. Participants also reported that before implementation of SIGDEP, completeness was between 40–70% for 2008.[20] Communication channels are used to follow-up on missing data from sites, which has improved data completion rates.

SIGDEP has a fat client computing environment (a networked computer with many locally stored programs or resources with little dependence on network resources, such as auxiliary drives or software applications) in which each facility does most of the data processing before the information is collated on the server housed with MEASURE Evaluation. SIGDEP can be networked at different service delivery points in an individual facility. SIGDEP, which was developed by DIPE, MSLS, and MEASURE Evaluation, has not been institutionalized in the DIPE Information Technology department; it works mainly through MEASURE Evaluation. In November 2013, a server was delivered to DIPE and a process was initiated to transfer collation responsibilities from MEASURE Evaluation to DIPE.

SIGDEP has an annual operational plan to maintain the database. MSLS has the technical capacity to identify and fix database problems, which could equate to technical sustainability at the national level. Some facilities that use SIGDEP no longer receive financial support to identify and fix database problems from either PEPFAR or The Global Fund.

SIGDEP is in the process, with technical support from MEASURE Evaluation, of adapting the software to capture data from community service organizations, facilities, laboratories, pharmacies, and dispensaries, which will result in one single, integrated HIV data management and reporting system, and it will facilitate production of various national level reports.

Two other key databases contribute to information produced by the national HIV M&E system: the MRS and PNOEV databases.

The Monitoring Reporting System is a national database that captures community-level data and was made available in Côte d'Ivoire through the International HIV/AIDS Alliance. MRS does not link with SIGDEP or SIGVISION, but it is used to report directly primary HIV prevention efforts in communities through national reports. Data are captured in paper-based tools from community-based organizations' HIV prevention activities. These data are then submitted to the regional level, where they are cleaned and collated by CTAIL before entry into MRS, which collates regional-level aggregations into the national dataset. Regional levels have a coordination officer for community-level activity data.

[19] No evidence, either document review or M&E system performance data, were available to corroborate this claim.

[20] No evidence, either document review or M&E system performance data, were available to corroborate this claim.

The PNOEV database captures data from OVC services delivered in communities. The PNOEV database was created from paper tools to facilitate data transmission, which enables M&E focal points to collate and transmit data electronically to PNOEV. MEASURE Evaluation provided technical assistance to create electronic forms and build the database architecture. PNOEV supervises data collation and transmission from civil society organizations to the national level. Data are recorded on paper monthly summary sheets at community-based service delivery points and then reported monthly to the regional-level local initiatives technical support units, known as CTAILs.[21] CTAIL then reviews each NGO submission before collating and entering the data in MRS for quarterly submission to PNOEV, which in turn reviews and collates submitted data to produce quarterly reports. Each quarter, the regional CTAILs are invited to Abidjan for a meeting when the quarterly report is presented and discussed. (See Section 3.7.2, PNOEV Supportive Supervision Guide.)

5.1.4 Data Quality

Improving data quality has been addressed through the development and implementation of these tools and activities:

- The Supervision Grid guides the implementation of supportive supervision visits from the regional level to health facilities.
- Data validation meetings are held to verify data from health facilities before collation at the regional level.
- The PNOEV Supportive Supervision Guide helps in data quality improvement.

Supervision Grid Guides Implementation of Supportive Supervision Visits to Improve Data Quality: In 2008, MSLS, in collaboration with MEASURE Evaluation, produced a data quality-focused Supervision Grid to conduct supervision with CTAILs to strengthen the capacity of MSLS, regions, and facilities to ensure that data are collected and collated as accurately as possible. Supportive supervision visits are implemented by CTAIL regional supervisors.

The Supervision Grid is a sheet used for problem solving that is adapted by the supervisory team during each supportive supervision visit. The sheet records key health problems identified during quarterly data analysis. Each supervisory visit has a different team to build capacity in data management and data quality among both supervisees and supervisors.

Supportive supervision using the Supervision Grid is conducted in quarterly site visits, with a minimum of two supervisory visits per year. Sites to visit are decided after data are collated and reviewed. Before the team leaves on a supervisory visit, a Supervisory Visit Summary Sheet is filled out. The Supervision Grid is adapted by adding questions or refining questions based on identified specific threats to data quality at the regional level, according to the data challenges identified during the collation process. To structure supportive supervision visits, strengths and areas in need of improvement are identified and discussed with the data collection team, and then an action plan is developed.

[21] The CTAILs are the regional representatives of the decentralized MSLS; they are responsible for local coordination, including support of the one HIV M&E system.

The Supervision Grid is used during visits to assess what the M&E officer at the site is doing compared with what should be done. If discrepancies are detected, they are pointed out and an action plan is agreed upon. Available material, data collection tools, and equipment (noting working order status) are assessed and needs are listed. For items that are not managed by CTAIL, possible solutions are discussed with the M&E officer and added to the action plan. Indicators reported by the NGO that is receiving the supervisory visit are discussed and definitions are reviewed and clarified to ensure that their understanding and operational definition is the same as the other reporting sites, MSLS guidance, and the CTAIL's understanding. The process used to collate data to report against an indicator is then reviewed and any corrections are noted and added to the action plan. Spot-checks verify if services reported as delivered actually were delivered and cross-references of reported data with additional data sources are completed. This process improves the quality of data reported from service delivery points and NGOs, and it helps build M&E partnerships among the CTAIL, service delivery points, and NGOs, which in turn strengthens the enabling environment where M&E activities occur.

The first step to establish the supportive supervision processes for the national HIV M&E system was to build buy-in and capacity for M&E among personnel responsible for data management and the reporting system. The Routine Data Quality Assessment Tool[22] training was implemented in 2008 by MEASURE Evaluation and funded by PEPFAR and USAID. According to the RDQA report, before the training, district directors, pharmacists, and CSEs "…did not know their core M&E job functions…," which are to develop quarterly action plans to review, correct, and improve routine facility-level data.

Data validation meetings are used to verify with health centers the accuracy of the data before it is collated. Stakeholders and key informants report that the completeness of reports has improved to between 75% and 100%. Data validation meetings were instituted after the MEASURE Evaluation regional-level Routine Data Quality Assessment training in 2008. These meetings are attended by district directors, CSEs, and district-level pharmacists. Data validation meetings are to occur annually at the national level and quarterly at the regional and district levels.

Regional data validation meetings began in 2007 when Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) first brought facilities together with district managers to compile and compare data and data sources. Regional meetings are chaired by the CSE, which is responsible for data collection. During the quarterly data validation meetings, all site-level monthly summary sheets are compared, data are checked for accuracy and completeness, and then they are collated into one report. These meetings allow stakeholders to understand the indicators, improve data quality, and also manage data collection tools and data flow. The results of these meetings have been the use of output-level data to assess what the program has delivered compared with the target and the actual demand. If targets have not been met, the region conducts a supervisory visit. If, from the supervisory visit, the cause is unclear, then a process evaluation is to be conducted to diagnose the actual situation and identify solutions.

[22] The Global Fund to Fight Aids, Tuberculosis and Malaria, Office of the Global AIDS Coordinator, PEPFAR, USAID, WHO, UNAIDS, MEASURE Evaluation. (2008). Routine Data Quality Assessment Tool, Guidelines for Implementation for HIV, TB, and Malaria Programs.

PNOEV Supportive Supervision Guide: From 2005–2007, MEASURE Evaluation supported the creation of an M&E System in the social system by providing technical assistance, identification of M&E needs, and teaching and coaching of PNOEV to manage implementation of M&E at service delivery points. Situational analyses were conducted for capacity, human resources, and the various parties involved and were implemented by PNOEV, with technical assistance from Family Health International (FHI), CDC, and PEPFAR. These situational analyses identified care needs to be addressed (PNOEV, PEPFAR, and FHI 2009). This study also identified the need for M&E of social services, leading to the establishment of an M&E unit in PNOEV that operated from 2009–2010.

In 2007, a situation analysis led by the government, with technical support from PEPFAR, identified significant gaps in data availability, data flow, available human resources, and development of M&E skills. To address this gap, PNOEV Reporting Guidelines (MFFE and PNOEV 2011) were developed, with technical assistance from MEASURE Evaluation. The PNOEV Reporting Guidelines include supervision training, supervision guides, and supervision forms, which the Indicator Dictionary complements. The PNOEV Reporting Guidelines contain scenarios to guide service delivery points through challenges; however, the CTAIL team needs to provide guidance to explain difficulties and how things work. The PNOEV Reporting Guidelines are taken to the field during quarterly supportive supervision visits for data management and reporting. In addition to quarterly supportive supervision visits, CTAIL routinely keeps in contact with community-based organizations by providing services by telephone.

In 2009–2010, after the situational analysis, MFFE was requested to begin to monitor service provision in community sites, which required M&E capacity development. A training of trainers was initiated, and 732 M&E staff from line ministries engaged in HIV and MLS were trained by PNOEV, with technical support from MEASURE Evaluation. This training covered data collection tools, data collection, and data use. This training also served as a forum for M&E advocacy, engaging the Côte d'Ivoire Cabinet in HIV activities.

M&E officers and data managers also have been oriented by MEASURE Evaluation on the use of all OVC data collection tools, including the OVC Identification Card, which allows community workers to track beneficiaries and the services they have received. Community counselors in NGOs use the user-friendly interface card to circle services delivered to the beneficiary. The OVC Identification Card and other tools were developed for OVC service providers to complete reports. OVC service providers summarize the data from the cards, then map the data to the appropriate indicators, plug in the sum, and then enter the information in their client-level OVC database to submit electronically to the server. Before development of the OVC Identification Card and SIG-OEV, the OVC database, OVC data were not captured. Services were offered, but they were not documented. Now, OVC data are available to answer questions about service coverage, population reached, and supply chain management.

According to respondents, before the PNOEV Reporting Guidelines, reports received from OVC providers were on time 30–50% of the time and were 70–80% complete. Today, OVC providers realize that blanks on their summary sheets are impossible to interpret and result in compromise of the overall report. The manual also supports the need to meet deadlines. The manual improved providers' understanding of the relationship between different parts of the report, data submission timeliness, completeness of submitted reports, and overall improved data quality.

5.1.5 Performance of the M&E System

The first of the two accessible indicators for the Côte d'Ivoire case study was Indicator 1: Percentage of M&E plan indicators reported against (for a strategic period or fixed year, as defined by the national M&E plan).[23] The analysis for Indicator 1 began with a compilation of indicators from the seven source documents (Annual Reports[24] 2007–2008, 2009, 2011, and 2012, [but the 2010 report was not available]; M&E Plan 2006–2010; M&E Plan 2011–2015; and the Indicator Dictionary) into a matrix that identified the 208 indicators, many of which were similar but not exactly the same.

A review of the Indicator Dictionary, as informed by stakeholders and key informants, produced a nuanced, complicated picture of the 36 indicators it contains. The central level (DIPE, PNPEC, and PSP), has 32 indicators used in the regional and district health departments. The district health department level also has 32 indicators, identical to the central level indicator set, but organized into three programs: (1) HIV testing and counseling, (2) prevention, and (3) support (PEC). The indicators are grouped in three categories: (a) process, (b) output, and (c) outcome. Each health site has 83 output-level indicators that are organized into at least seven unique program areas. In addition, the Directorate of Planning and M&E for AIDS (Direction de la Planification S&E de SIDA, or DPSES) has 15 community indicators, and the national HIV response in the community sector has an additional 21 key indicators organized into three program areas: (1) prevention, (2) support (PNPEC), and (3) impact mitigation, which are each categorized as impact, impact evaluation, monitoring, and performance or quality. Indicators in the Indicator Dictionary are not assigned unique indicator numbers, which makes it challenging to trace indicators across levels (central, regional, district), programs (prevention, support (PNPEC), and impact mitigation), and type (output, outcome), and to identify duplicates.

Stakeholders and key informants reported plans to revise the Indicator Dictionary to align it to the National Strategic Plan and address the challenges with national indicators. The revision process is intended to mirror the initial development process and be flexible to incorporate new stakeholders. Improvements already have been made to the data collection tools since they first were released; however, during data collection, the case study team was unable to obtain the revision plan or elicit a clear description of how the Indicator Dictionary is to be updated.

After all indicators were captured in a matrix, they were sorted by strategic area and indicator name to identify duplicates and determine the number of indicators reported across all the annual reports (see Appendix 8, List of Indicators Reported Against in Annual Reports). The results showed that no indicator in either the M&E Plan 2006–2010 or the M&E Plan 2011–2015 were reported in any annual report, and no indicators from the Indicator Dictionary have been reported in any of the annual reports during the case study period (2007–2012). [Note that the Indicator Dictionary was released in 2012, and

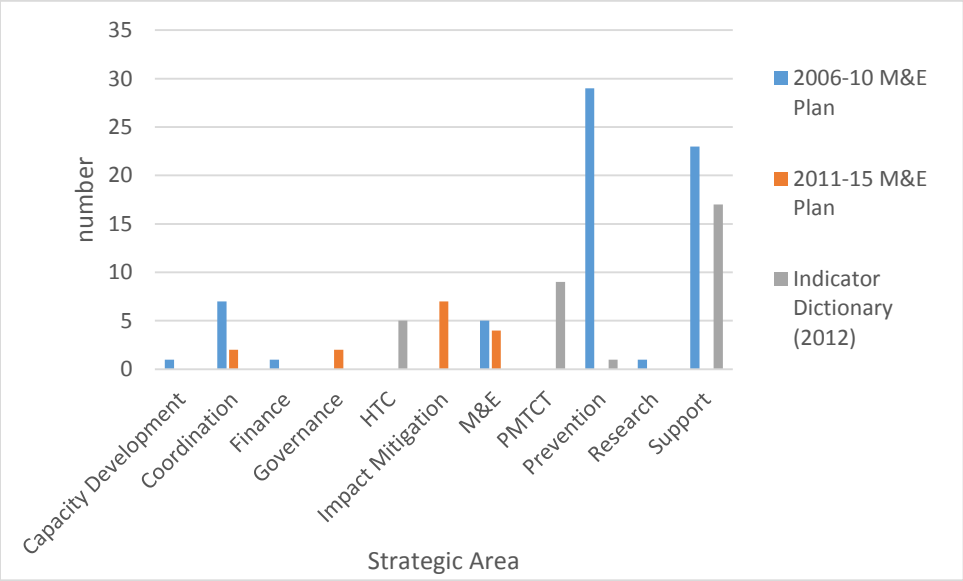
[23] Source: UNAIDS MERG, page 39, question 16, and page 40, question 2, 2010.

[24] The Government of Côte d'Ivoire, with technical and financial support from UNICEF, produced four annual reports: 2007–2008, 2009, 2011, and 2012, which was delayed due to late submission of health data and community-level data that were largely unavailable because of structural changes in the transition from a directorate at the regional level to the local initiatives technical support unit, known as CTAIL. From 2005–2010, external consultants produced the annual reports, with no formal feedback mechanisms, and the reports were sent directly to donors. Since 2010, UNICEF has supported capacity development efforts with the Directorate of Information, Planning and Evaluation (DIPE) to have internal, systematic production in place.

the 2012 annual report became available in May 2013.] The results of the data review can be summarized this way (shown in Figures 1 and 2):

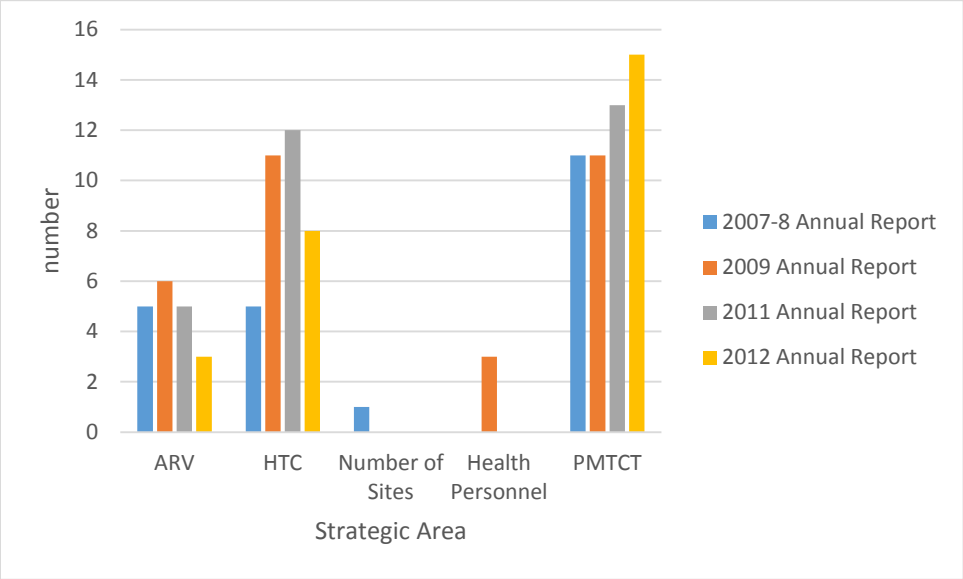
- 136 indicators (65%) in the two M&E Plans and the Indicator Dictionary have not been reported in any annual reports.
- 44 indicators (21%) that were reported in the annual reports were not listed in either of the M&E plans or in the Indicator Dictionary.
- 28 indicators (14%) have been reported in more than one annual report.

Figure 1: Number of National HIV Indicators by Strategic Area



Data Source: CNLCS, 2006; CNLCS, 2011; and MSLS, PEPFAR/USAID, and MEASURE Evaluation, 2012

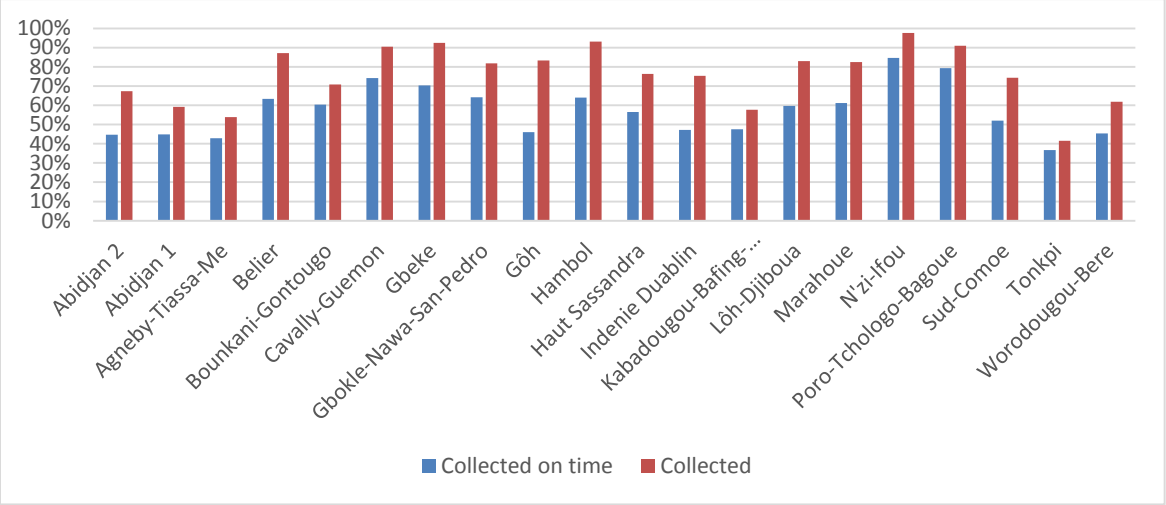
Figure 2: Number of Indicators by Strategic Area and Annual Report



Data Source: MSP, DIPE, PNPEC, 2009; MSP and DIPE, 2010; MSLS and DIPE, 2012; MSLS and DIPE, 2013

The data for the second of the two indicators available for the Côte d'Ivoire case study were for Indicator 20: Percentage of expected reports received from districts on time.[25] The study team received two data files that tracked data completeness, one from January to July 2013 (data through June 2013) and a second to November 2013 (data through October 2013). Only aggregated data were available over that time. Only cumulative data were available for January to June 2013, but monthly data were not available; only cumulative data were available through November 2013, and included the preceding dataset. A trend analysis presented in Figure 3 analyzed these two overlapping data points. Also, the study team intended to conduct an analysis of the most recent data (November 2013); however, this second dataset did not capture the proportion of expected reports that were received complete and on-time, and therefore, it was less useful than the July 2013 version of the dataset.

Figure 3: January–June 2013 Timeliness and Completeness of Data Collected by Health Region, Côte d'Ivoire



Data Source: DIPE, 2013

Nationally across all regions, 58% of the data received from January–June 2013 were complete and on time.

5.2 Drug and Supply Chain Management

Before the establishment of PNPEC's Directive Patient Treatment Guidelines and the National Monitoring Committee (NMC) in 2007, supply procurement and distribution were uncoordinated among PEPFER, UNICEF, The Global Fund, The World Bank, Organisation du corridor Abidjan-Lagos (OCAL), and the Public Health Pharmacy (PSP), which meant that some facilities were stocked with inventories of unneeded drugs and supplies or expected deliveries did not arrive. NMC comprises 27 representatives from the national system: The Ministry of Health, through PNPEC and DIPE, The Global Fund, and PEPFAR implementing partners. The NMC, a subcommittee of the Technical Committee for Monitoring and Management of HIV-related Products, holds monthly meetings with

[25] Source: Aqil et al, 2009; The Global Fund et al, 2007.

quarterly web-based feedback. The NMC produces a 2-year National Monitoring Supply Chain Plan (PNCM) of estimated antiretroviral drug and laboratory products that is revised quarterly based on the feedback. NMC uses set parameters that require each pharmacy to maintain a 5-month supply of appropriate drugs and supplies. Inventories are compared to delivery schedules and, if necessary, the inventory is redistributed between pharmacies. Quarterly feedback from these monthly meetings is web-based.

NMC estimates of procurement quantities are based on HIV sero-prevalence and prevalence of co-morbidities determined from among people living with HIV and the Directive Patient Treatment Guidelines, which describe first- and second-line therapies, including for multiply-diagnosed individuals, such as HIV and TB or HIV and hepatitis B. Then, based on the reports, the actual consumption of drugs and supplies is compared to the estimates. If, after a quarter, consumption exceeds or is less than estimates, then the estimates are adjusted up or down and procurement is increased or decreased.

In 2007, PSP mobilized partner support to use Bios Software[26] to develop a Management Information System (MIS), an integrated database to enable PSP to compile monthly reports, product orders, and patient enrollment from the subnational levels and service delivery points. MIS forms are paper-based tools used to make orders for medications and supplies, maintain inventory records, and manage changes in the formulary, such as addition of new drugs and removal of drugs no longer to be used. Health facilities use MIS tools each month to report available stock, consumption during the past month, and administrative activities. MIS collects data from facilities to send to the districts, where they are collated and then submit to the national level. Hospitals and larger facilities submit directly to the national level. All data are then entered in a central-level database, which does not function in real-time but has a 1-month delay. The delay allows time for procurement and distribution decisions to be based on the previous month's consumption. MSLS human resources and technical support are provided by The Global Fund and PEPFAR implementing partners. MIS was rolled out initially as an antiretroviral system, but since 2012, malaria has been included, and other PSP data needs were integrated in 2013. The NMC oversees MIS, LoGIS/SIGtics Management, and ENSEA (LoGIS/SIGtic Manager). PSP is responsible for managing the overall system through the NMC.

Since 2008, central-level stock-outs have been reduced significantly. The combination of the Directive Patient Treatment Guidelines, NMC, and PNCM has enabled better coordination of purchases to make core stocks of inventory always available, and as a result, the practice of individual partner purchase and import of products not expressly identified as essential to the HIV program have halted. Despite this central-level organization, stock-outs are frequent at the facility level.

5.3 National Strategic Plan for Second-Generation Surveillance

Before 2009, no national strategic plan included surveillance activities, although sero-surveillance was routine. The World Health Organization (WHO) introduced second-generation guidelines in 2009 (WHO 2009) and asked for a review of surveillance activities at the national level and development of a

[26] http://www.biossoft.net/.

national strategic plan to meet second-generation surveillance needs. Stakeholders were convened, with technical assistance through MEASURE Evaluation and funding from PEPFAR. A situational analysis that included consideration of WHO recommendations and the 2009 guidelines identified most-at-risk populations and guided inclusion of all necessary epidemiological surveillance activities to address those weaknesses in the revised PNIS that was developed in 2010; however, as the 2011–2015 PNIS says, "…not all [surveillance] activities have been carried out" (CNLCS, 2011).

The self-assessment workshop (MEASURE Evaluation 2014a) identified surveys as a most significant change, and key informant interviews corroborated. Key informants discussed the Demographic Health Survey, which engaged the National Statistics Institute (INS); the Technical Working Group for Highly Vulnerable Populations; most-at risk populations mapping; men who have sex with men study; a national survey of sex workers; and a cost estimate of HIV programs that targets sex workers and men who have sex with men in 2012–2013. Each of these surveys was discussed as a once-off activity, with no discussion of how their implementation contributed to strengthening Component 8 of the national HIV M&E system through systems building, organizational development, or use of data to develop policies and improve the reach, efficiency, or scope of programs.

Verification workshop participants concluded that surveillance and surveys had not been a high priority, tended to be donor driven, and were conducted following international rather than country-developed protocols that went through an adaptation process for Côte d'Ivoire (MEASURE Evaluation 2014b).

6. Conclusions

The Côte d'Ivoire case study methodology was designed to identify successes and the most significant changes in the M&E system and to evaluate how those changes improved the M&E system functions overall in the middle ring of the 12 Components Organizing Framework. It is now clear, on the basis of the identified significant changes, that substantial progress was made in strengthening the M&E system. It also is clear that additional opportunities exist for further system improvements. The data collection process for this case study brought together the experiences of individuals and institutions to increase an understanding of the successes and lessons learned and to inform future decisions on how to diffuse and scale-up effective strategies for M&E systems strengthening. Conclusions in applying this case study methodology fall into three areas:

1. Evidence of HIV M&E system strengthening following the arrival of PEPFAR and The Global Fund exists.
2. Highlights for future investment involve building on current successes and further understanding how greater outcomes could be realized through the assessment, prioritization, and implementation of activities through a systems-thinking lens (AHPSR and WHO, 2009).
3. Performance measurement of the HIV M&E system in Cote d'Ivoire is limited.

6.1 Evidence of HIV M&E System Strengthening

This case study initially identified five most significant changes:

1. Indicators and data collection tools are harmonized and the Indicator Dictionary was produced to improve reporting processes.

2. National databases to process and manage HIV-related data and their manuals are deployed to improve data quality.
3. PNPEC and PNOEV adopted the National Supportive Supervision Guide for HIV and OVC to improve facility and community-based data.
4. Surveys and surveillance produced data used in the production of a new National Strategic Plan in 2009.
5. Evaluation and research findings are used for policy formation, planning, and implementation.

Of these most significant changes, key informants and other verified evidence demonstrated changes in the routine health information system through strengthened indicator and data collection tool harmonization, movement to an electronic data management and reporting system by adapting SIGDEP, and improvement in data quality at the end of the collection, collation, and reporting data cycle.

6.2 Highlights for Future Investment

Although much has been accomplished, as documented by the most-significant changes identified by stakeholders and the key informant interviews, for these successes to lead to system outcomes at a national scale, future technical and financial investment will be necessary, and an approach that considers the factors, context, and dynamics in which the M&E system is implemented will need to be developed. Following is a list of the specific activities for future investment that were identified through the key informant interviews:

- *A need for data management tools for use by districts*. In 2012, DIPE distributed the Data Management and Procedures Manual electronically to all regions, and MEASURE Evaluation distributed hard copies to all districts in six regions. Unfortunately, limited resources at DIPE resulted in stock-outs of the data management tools, and districts were required to reproduce the paper-based tools on their own. The cause of the stock-outs was identified as DIPE's continued dependence on MEASURE Evaluation to fully fund production of data forms, and MEASURE Evaluation budgetary obligations elsewhere limited the funding.
- *Software update for inclusion of data from additional programs and service sites.* In November 2013, a server was delivered through PEPFAR funding to DIPE, and the process of transferring collation responsibilities from MEASURE Evaluation to DIPE began. SIGDEP, with technical support from MEASURE Evaluation, is in the process of adapting the software to capture data from community service organizations, facilities, laboratories, pharmacies, and dispensaries.
- *Integration of performance monitoring for SIGDEP.* The system is producing data, making it available, and reporting overall reporting rates, but better definitions are needed in the automatically generated report to produce monthly trend analyses on these performance indicators. The development of better definitions would require rewriting the query and report functions in SIGDEP.

A key theme in both successes and needs for future investment is the strong reliance on donors in M&E system strengthening efforts. More specifically, interventions were undertaken with substantial initiative and financial and technical support from donors, as evidenced by the examples of the Indicator Dictionary, Data Management and Procedures Manual, SIGDEP, efforts to improve data quality, and second-generation surveillance. For example, application of the Data Management and Procedures

Manual has not been consistent in all districts because of internal politics, differences in program implementation, and differing levels of buy-in among the range of service providers in the one M&E system. This indicates a need to further understand the steps and benchmarks that need to be put in place to establish an enabling environment for M&E that leads to real country ownership and sustainability. One approach is to focus M&E system assessment and interventions on the outer ring of the 12 Components Organizing Framework. These components include the human resources, partnerships, and planning that are required to support data collection and use. A more comprehensive approach would recognize the complex nature of improving the M&E system as a part of the overall health system. Such an approach involves appreciating the dynamic and ever-changing environment, understanding the behaviors of the people who are responsible for the system and how their behaviors are generated, understanding the context of relationships as related to the system, and appreciating the concept of loop thinking where causality is constantly being influenced (AHPSR and WHO, 2009).

6.3 Performance Measurement of M&E Systems Strengthening

The study team faced challenges in compiling case study outcome-level indicators for measuring system performance, which highlights the need to improve the availability and consistent use of performance indicators and develop national and local M&E performance management plans. The study team had hoped to access existing data sources, documents and reports, and performance data produced by the national HIV M&E system to construct reports on identified M&E system performance indicators. Although data were available to compile two out of the 19 pre-determined indicators, the data sources either were difficult to find, such as the annual reports for HIV, or they were still being established and required more detail, such the national data on reporting rates. Subsequently these data and information from the key informant interviews can establish a baseline of national change in the one HIV M&E system and lay a foundation for the development of M&E system performance metrics. These performance metrics will become more and more important as countries and global partners continue to increase their reliance on the M&E system for planning and understanding achievement toward national and health goals.

7. Limitations

This case study methodology presented a number of limitations that should be taken into consideration in the interpretation of these findings and any forthcoming study design to further identify evidence for M&E system strengthening.

Although the selection of MEASURE Evaluation countries for these case studies had benefits, such as gaining a more complete knowledge of the context and ease of stakeholder engagement, this approach may have introduced selection bias. The MEASURE Evaluation team selected stakeholders who identified key informants, and because the stakeholders represented host-country agencies that receive strategic information assistance and those agencies are actively engaged in the one national HIV M&E system, the study team believes that the selection bias was not strong and a representative sample of key informants were interviewed. On the other hand, the potential for recall and social desirability biases is high because the study participants also were involved in developing and implementing the system. To establish case study priorities and parameters, the methodology specified the review of M&E

strengthening at the national level, with a focus on collecting, capturing, and verifying information on components of a functional M&E system (Görgens and Kusek 2009). This means that this study does not capture or reflect all of the strengthening initiatives that may have occurred at the national level or the effects that various national initiatives may have had at a subnational level.

Stakeholders were asked to identify the most significant changes as a starting point for exploration of how the M&E system evolved through activities and investments that were intended to strengthen it. The methodology sought to identify extremes of success and failure and the most exemplary stories, and therefore, it can be biased toward successes (Davies and Dart 2005). In reality, the case study identified several challenges, particularly a lack of systems thinking in developing and implementing activities that were identified as the source for the most significant changes; but because the case study had no clearly defined mechanism to provide follow-on support, the case study was not designed to be a diagnostic assessment.

The protocol called for the collection and analysis of the full list of 19 pre-determined indicators (see Appendix 1). This list of pre-determined indicators, presented during the self-assessment workshop, was selected by stakeholders because they believed those indicators are necessary to the Côte d'Ivoire case study and because the necessary data are produced by the national HIV M&E system, and therefore, they are available. The study team could identify only some of the data sources required, and the team collected data for two of the identified indicators (see Section 5.1.5: Performance of the M&E System).

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Appendix 1: List of Participatory Self-Assessment Participants

Name	Job-title	Institution
Angaman, Kassy Roger	Resp S&E	MFFE/PN-UE
Bila, Charles	Statistician	DIPE
Ebah, Aka Laurence	CT S&E	ARIEL Glaser
Essis, Marie Laure	Doctor	INSP
Guella, Michel	Director	DIPE/DPSES
Kobenan, Eric	M&E Assistant	SEV CI
Kouame, Isabelle	Program Officer	UNAIDS
Kra, Kouakou	Head of Studies	Direction Generale de la Santé
Nguessan, Bernard	M&E Assistant	PLS-PHV
Nguessan, Serge	MIS Specialist	SCMS
Oulai, Ibodé Valeri	M&E Information Assistant	PNLT
Pango, Justine	M&E Officer	EGPAF
Pongathie, Adama Sanogo	Deputy Director	DIPE
Sansan, Kanbou Edouard	Head, M&E	CARITAS-CI
Sihi, Hyppolite	M&E deputy	DPSES/MSLS
Tchodo, Marcel	Program Assistant	CECI
Tuho, Zanga Moise	Head of Strategic Information Department	PNPEC

Appendix 2: The 12 Components M&E System Strengthening Tool Adapted for the Case Study

Break-out Group Self-Assessment Guide

General Instructions

The purpose of this guide is to allow for a structured conversation about the status of one of the selected 12 Components of the national HIV M&E system in Nigeria. The purpose is to clearly identify a *success story* for whichever component you are discussing as well as to begin to provide sources of evidence for that success. Sources of evidence will include, but not be limited to, key informants, existing datasets, reports produced and/or acknowledgements from line ministries and/or development partners on the success of an HIV M&E related activity, set of activity, and/or deliverable.

This self-assessment process will be focused on the following components:

- 7 – Routine Monitoring
- 8 – Surveys and Surveillance
- 9 – National and Sub-national HIV Databases
- 10 – Supportive Supervision and Data Auditing
- 11 – HIV Evaluation and Research Agenda

Each group will be requested to complete a self-assessment for one of the 12 components. Participants will be asked to self-select into group based on knowledge of the component. If there are not at least two people available for a specific component, the *de facto* decision will be that there is no success story to explore in that specific component.

The group will need to answer each of the questions for their component. The questions are from the 12 Components Monitoring and Evaluation Systems Strengthening Tool (UNAIDS MERG, 2010), with modified answers on a Likert scale:

- Yes, completely
- Yes, mostly
- Yes, somewhat
- No, not at all
- Not applicable

For any question answered "Yes, mostly" or "Yes, completely" you are asked to discuss in depth:

1. Why is this a "Yes, mostly" or "Yes, completely"?
2. What evidence may be available to support this answer?

3. How has this situation changed during the past 5 years – that is, 5 years ago, was this also then a "Yes, mostly" or "Yes, completely" or has improvement been made that caused this to improve from a "No, not at all" or a "Yes, somewhat"?

Each Break-out Group will then be requested to report back on the questions answered "Yes, completely" or "Yes, mostly", followed with a plenary discussion to verify the group's findings. Other Break-out groups will verifying the presenting group's findings and a consensus reached on what the most significant change is through a consensus building process, such as the five-dollar method.

The worksheet provided to each group will be collected at the end of the workshop and used to guide next steps of the Case Study.

Break-out Group 7: Routine HIV Program Monitoring Worksheet

NOTE: Please provide an explanation for questions 16 and 17, regardless of the answer.

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
1	National guidelines exist that document the procedures for recording, collecting, collating and reporting program monitoring data from **health information system, and therefore the procedures for managing routine.**	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
2	National guidelines exist that document the procedures for recording, collecting, collating and reporting routine program monitoring data from **civil society/community-based systems.**	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
3	National guidelines exist that provide instructions on how data quality should be maintained from **the health information system(s).**	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
4	National guidelines exist that provide instructions on how data quality should be maintained (e.g., avoiding double counting, assure reliability and validity) **from civil society/community-based systems.**	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				
5	National guidelines and a system exist for monitoring and managing the supply of drugs.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				
6	National guidelines exist to assure that individual medical records support quality and continuity of health care.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				
7	National guidelines exist to support reporting of health data by private sector health facilities.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				
8	The same operational definitions of routine monitoring (program output) indicators (from the national M&E system) are systematically used by all groups delivering services.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
9	Supplies and equipment are available for routine program monitoring.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
10	Entities delivering the same services use standardized data collection forms.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
11	Entities delivering the same services use standardized reporting forms.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
12	People with assigned responsibilities have been assuring data quality prior to submission to the next level.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
13	During data auditing visits conducted by MOH and/or NAC, all source documents (e.g., completed forms) have been available for auditing purposes.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
14	Officers responsible for receiving reports from lower levels, systematically verify their completeness, timeliness and identify obvious mistakes before aggregating the data.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
15	Mechanisms/procedures are in place to reconcile discrepancies in reports and to provide systematic feedback, including reconciliation of discrepancies in reports.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
16	Outputs of routine program monitoring contribute to the indicators as defined in the national M&E plan.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
17	Financial resources and investments for HIV are monitored and reported to the national AIDS coordinating authority and MOH	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

Break-out Group 8: Surveys and Surveillance

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
1	An inventory of all HIV related surveys and surveillance conducted already (and to be conducted) in the country has been updated within past 12 months	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
2	Surveys and surveillance conducted to date have contributed to measuring indicators in the national M&E plan	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
3	Biological surveillance targeting the appropriate populations is conducted every 1–2 years	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
4	National surveys or surveillance with behavioral component in the general population are conducted every 2–3 years	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
5	National workplace surveys (public and private sectors) are conducted every 1–2 years	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
6	Health facility surveys at HIV-related service delivery points are conducted every 2–3 years	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
7	Second generation surveillance (secondary analysis of existing biological and behavioral surveillance data, and program monitoring data) is undertaken every 2–3 years	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
8	National surveys on condom availability and use are conducted every 1–2 years	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
9	The inventory of HIV related surveys conducted in the country is accessible	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
10	This inventory is updated on time according to an agreed upon schedule outlined in the inventory	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
11	All key surveillance and survey reports that should have been produced in country during the past 24 months produced have been produced	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
12	Biological Surveillance is conducted in the country according to schedule that is outlined in either the (a) HIV-related survey inventory and/or (b) national HIV M&E plan	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
13	National surveys or surveillance with a behavioral component in the general population are conducted in the country according to schedule that is outlined in either the (a) HIV-related survey inventory and/or (b) national HIV M&E plan	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
14	National level workplace surveys are conducted in the country according to schedule that is outlined in either the (a) HIV-related survey inventory and/or (b) national HIV M&E plan	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
15	National level school-based surveys are conducted in the country according to schedule that is outlined in either the (a) HIV-related survey inventory and/or (b) national HIV M&E plan	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
16	Health facility surveys in HIV-related services are conducted in the country according to schedule that is outlined in either the (a) HIV-related survey inventory and/or (b) national HIV M&E plan	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
17	Second-Generation[27] Surveillance is conducted in the country according to schedule that is outlined in either the (a) HIV-related survey inventory and/or (b) national HIV M&E plan.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
18	Surveys on condom availability and use are conducted in the country according to schedule that is outlined in either the (a) HIV-related survey inventory and/or (b) national HIV M&E plan.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

[27] Second generation surveillance for HIV/AIDS is the regular, systematic collection, analysis and interpretation of information for use in tracking and describing changes in the HIV/AIDS epidemic over time that also gathers information on risk behaviors, using them to warn of or explain changes in levels of infection. Second generation surveillance includes STI surveillance to monitor the spread of STI in populations at risk of HIV and behavioral surveillance to monitor trends in risk behaviors over time (WHO, 2013: http://www.who.int/hiv/topics/surveillance/2ndgen/en/).

Break-out Group 9: National and Subnational HIV Databases

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
1	Database/s for electronically capturing and storing data generated for/by the national HIV M&E system is/are functional.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
2	There is a functional integrated database for electronically capturing and storing data on a wide range of health services, including but not limited to HIV/AIDS services.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
3	Structures, mechanisms procedures and time frame for transmitting, entering, extracting, merging and transferring data between databases that support the national HIV M&E system exist.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
4	IT equipment and supplies are available for maintaining the national and sub national HIV databases.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
5	Quality control mechanisms are in place to ensure that data are accurately captured.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
6	Human resources for maintaining and updating the national and sub national HIV databases are adequate.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
7	Human resources for maintaining and updating the IT equipment and infrastructure are adequate.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

Break-out Group 10: Supportive Supervision and Data Auditing Worksheet

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
1	National guidelines and tools for supportive supervision on M&E exist (as standalone or as a chapter/module of more comprehensive supervision guidelines).	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
2	Supportive supervision was conducted as per the national protocols, in the past 6 months.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
3	Supportive supervision results have been recorded and feedback provided to supervisees.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
4	Entities can access supervision and data auditing results, and follow up on recommendations made during supervision visits.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
5	A protocol for auditing routine HIV service data from **health service delivery points** exists.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				
6	A protocol for auditing routine HIV service data from **civil society/community-based programs** exists.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				
7	National protocol for auditing data used in the national set of HIV indicator values exists.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				
8	Data auditing is conducted as per the time frames stipulated in the national data auditing protocol.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				
9	Data auditing results have been recorded and feedback provided to those entities whose data were audited.	□ Yes, completely □ Yes, mostly □ Yes, somewhat □ No, not at all □ Not applicable				

Break-out Group 11: HIV Evaluation and Research Agenda Worksheet

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
1	An inventory (register/database) exists of HIV research, and evaluation institutions and their activities in the country (completed, proposed and active) and has been updated in past 12 months.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
2	A mandated national team/committee and procedures exists which is responsible for coordinating and approving (new) HIV research and evaluations.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
3	The team/committee mandated for coordinating and approving HIV research and evaluations has met as scheduled in the last 12 months.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all Not applicable				
4	Procedures exist for the mandated team/committee to coordinate (new) HIV research and evaluation.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
5	An HIV research and evaluation agenda exists that directs future HIV research and evaluation.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
6	The HIV research and evaluation agenda has been prioritized based on input from key HIV and research stakeholders.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
7	The HIV research and evaluations agenda is being used to approve new studies.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all Not applicable				
8	The HIV research and evaluations findings are being used in policy formulation, planning and implementation.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
9	Research and evaluation findings are regularly disseminated and discussed.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all ☐ Not applicable				
10	Financial resources are earmarked/available for conducting planned research and evaluations.	☐ Yes, completely ☐ Yes, mostly ☐ Yes, somewhat ☐ No, not at all				

#	Question	Answer (Only select an answer after consensus has been reached)	Explanation (Only complete for questions answered "Yes, Completely" or "Yes, Mostly". Use additional paper as necessary)	List Suggested Key Informants	List Suggested Documents, Datasets and Other Information Sources	List Most Relevant Indicators from Appendix 1: List of Indicators
		☐ Not applicable				

Appendix 3: List of Key Informants

Organization	Name	Postion
ACONDA	KONAN, N'dri Eric	Administrateur de base de données
ACONDA	KOUAKOU, Jean-François	Administrateur de base de données
ACONDA	DAKOURI, Nicole	Chef de Service Information Strategique
ARIEL	ABOKON, Armand	Director, Health Systems Strengthening and Operational Research
Dimbokro	ALLECHI, Prosper	Chef de District
DIPE	DAMEY, Florence	Director, Surveillance
DIPE	GUINAN, Roger	IT Advisor
DIPE/DPSES	MOMINE, Felix	Chef de Service Collecte les donnees
DIPE/DPSES	ALLADÉ, Eric	Chef de Service Traitement et Analyse les donees
DIPE/DPSES	GUELLA, Michel	Director
DIPE/DPSES	KOBENA KRA, Bini	Evaluation and Health Action Sub-Director
DIPE/DPSES	KOUASSI, Ali	GF Activity Coordinator
DIPE/DPSES	AHOTY, Franck Alex	Information Dissemination Director
DPSES	SIHI, Hyppolite	Deputy Director of M&E of Community Programs
DRSLS Abidjan, Direction Regionale, Abidjan 2	ABOUA, Nicole	Charge de Suivi et Evaluation
DRSLS Abidjan, District de Treichville Marcory	ACHOU-TCHIMOU, Marie-Solange	Chef de Service M&E
DRSLS N'Zi Iffou	BRINDOU, Jean-Bapist	Directeur
MEASURE Evaluation	TOHOURI, Romain	IT Advisor
MEASURE Evaluation	BOSSO, Edwige	M&E Advisor
MEASURE Evaluation	GNASSOU, Leontine	Resident Advisor
MEASURE Evaluation et GTT HMIS	TRAORE, Moussa	Statistics
PLS HV	TRAORE, Salamata	Coordinator, Interventions and Education
PLS HV	THIAM, Margarite	Directeur de la programme
PLS HV	WONGNIN, Venance	M&E Chief
PLS HV	BANDAMA, Kouadio	M&E Staff
PLS HV	N'GUESSAN, Bernard	M&E Staff
PNOEV et DPED	N'GUESAN, Sosthène	Charge de la Qualite de Donnees
PNOEV et DPED	SAMAKE, Yaya	Charge de Suivi et Evaluation
PNOEV et DPED	ANGAMAN, Roger	Chef de Service M&E
PNPEC (National Care and Treatment Program)	ABO, Kouame	Director of Care and Treatment Program
PSP (Pharmacie de la Sante Publique	KODO, Karine	Coordinatrice Cellule de Gestion des ARV
PSP (Pharmacie de la Sante Publique	MAHOUSSI, Nathalie	Responsable Suivi Evaluation de la Cellule de Gestion des ARV
SCMS (Supply Chain Management System)	COULIBALY, Eric	Manager for Quantification and Procurement
SCMS (Supply Chain Management System)	IRIE, Nathalie	Technical Advisor, Quantification
UNICEF	BOSSO, Patrice	Politique Social and Monitoring & Evaluation

Appendix 4: Key Informant Interview Guide

Key Informant Interview Guide

COVER PAGE

[This cover page is to be completed prior to interview and verified prior to consent. Once cover page has been completed and verified, remove it and place in file prior to continuing interview.]

#	Question	Resonse Categories	Response
i	Name of Participant:		
ii	Participant contact details:		
iii	During this interview, you plan to answer questions for the following components:	__7: Routine Monitoring __8: Surveys & Surveillance __9: Databases __10: Supportive Supervision & Data Quality __11: Evaluation & Research __M/Eval R1 __M/Eval R2 __M/Eval R4 __M/Eval R5 __M/Eval R6	
iv	What is the gender of the participant?	1 Female 2 Male	
v	At what organization does he or she work?		
vi	What is his/her designation (job title)?		
vii	In which department or unit does he or she work?		
viii	How long has he or she been with [**Name of Organization**]?	Number of Years (Round to nearest year; 00 = Less than six months)	__ __ years
ix	How long has he or she been working in your present job?	Number of Years (Round to nearest year; 00 = Less than six months)	__ __ years
x	How many years in total of education has he or she completed, including primary school?	__ __ Number of Years (Round to nearest year; 00 = Less than six months)	__ __ years

#	Question	Resonse Categories	Response
xi	What is the highest level of education he or she has attained?	1 Certificate 2 Diploma 3 Degree 4 Masters degree 5 Doctoral degree 96 Other (Specify):	
xii	What was his or her specialization?		
xiii	How many years ago did he or she complete the highest level of education?	__ __ Number of Years (Round to nearest year; 00 = Less than six months)	__ __ years

Consent Form—Key Informant Interview Participants

This consent form explains the research study you are being asked to join. Please review this form carefully and ask any questions about the study before you agree to join. You may also ask questions at any time after joining the study.

Purpose of the Study: The retrospective Case Study will seek to answer how national level commitment to its health information systems has changed, how M&E system performance improved, how the capacity of individuals and organizations improved and the degree to which the M&E system draws its data directly from national health information systems.

Procedures: If you decide to take part in this study, you will be asked questions about your experience working in and/or with the national HIV monitoring and evaluation system. This interview will be done in a private place and will take no more than one hour.

Risks: Some of the questions in the interview may be about your professional performance and you might feel uncomfortable answering them. You may skip any questions you don't want to answer. You will be named as having participated in a key informant interview and cited as a source when necessary. You may also stop the interview any time.

Benefits: There are no direct benefits to you from taking part in this study. You will help us identify what has contributed to a more successful national HIV monitoring and evaluation system. This information may be used by various development partners to guide future investments in the national HIV monitoring and evaluation system.

Costs: There is no cost to you to participate in this study.

Confidentiality: Every effort will be made to keep confidential the answers you give and the information we take insofar as it is legally possible to do. Notes taken during the interview will be kept locked up and labelled only with a code, not your name.

Voluntariness: It is up to you whether or not to be in this study. If you do volunteer to participate, you can stop being in this study at any time. If you decide to be in the study, or if you decide later to drop out, no one will be informed of this.

Who to contact: You should ask the people in charge of this study any questions you may have about this research study. If you want to talk to anyone about this research study because you think you have not been treated fairly or have been hurt by being in the study, you should contact the person in charge, Ms. Shannon Salentine (ICF International) at 308 W. Rosemary Street, Chapel Hill, NC 27707 USA; +1 919 240 4969. You may also call Dr. Léontine Gnassou (MEASURE Evaluation, Côte d'Ivoire) at +225 22 52 67 85. Or you may call +1 703 225 2426. The people in charge of this study will answer your questions.

Participant's Signature Date

Signature of the Witness to the Consent Process Date

Introduction

[**Start at** ___ ___ **:** ___ ___] NOTE: Total time to be no more than 60 minutes.

Welcome

Thank you for agreeing to participate in this interview. My name is [**NAME**] and I will be talking with you today. This activity is being conducted by MEASURE Evaluation, a project in cooperative agreement with The United States Agency for International Develop, or USAID. The purpose of this activity, Case Study to Document M&E System strengthening, is to explore how multiple and uncoordinated interventions delivered by a variety of partners have contributed to the strengthening of the national HIV M&E system. A stronger M&E system is one that is able to produce valid and reliable data that are put to use for planning, program management and internal (national level) and external (global level) reporting.

Ground Rules

Everything you tell us will be kept confidential. To protect your privacy, we will not connect your name with anything you say. At any time during the interview, please feel free to let me know if you have any questions or if you would rather not answer a specific questions. You are under no obligation. You may stop the interview at any time for any reason. There are no right or wrong answers; we are attempting to understand how the M&E system has been strengthened based upon your expert opinion.

I will ask you to sign a consent form, indicating your willingness to participate. Please read this form and then sign if you agree to participate. The signed consent form will not be kept with interview notes and it will not be possible to trace any response to any question that you provide back to you through the signed consent form.

[Give the participant a form. Once signed, place the form in a separate folder until you return for the daily debrief.]

Is it OK if I record the interview? Once transcribed, the recording will be deleted.

[If agreed, turn on recording device. If consent is not granted for recording, be certain that the interviewer and observer both take notes that can be compared and synthesized after the interview.]

Background

I would like to begin by asking you questions about your current job:

1. What is your position at [Name of Organization]?
2. What are your major responsibilities in your current position?
3. How long have you been with [Name of Organization]?

Can you tell me a bit about your work and experience as it relates to monitoring and evaluation? What aspects of your current job relate to M&E? During a recent workshop with stakeholders a number of key successes were highlighted. These include:

- The indicator dictionary (2010)
- CBO, civil society organizations reporting guidelines
- DHS and EIS surveys (until 2008)
- SIGDEP and SIGVISION databases
- Supportive supervision of HIV and OVC
- Evaluation and research of vulnerable groups

Today I would like to learn more from you about the about the following successes (use cover sheet):

Component 7: Routine Monitoring

I would like to explore with you what changes have occurred in the routine monitoring system, how those changes came about and what improvements you have witnessed as a result of those changes. I would like our conversation to stay focused on the positive – that is the successes, or most significant changes, you have seen happen to the routine monitoring system since roughly 2007. Also, keep in mind that The Case Study is concerned with what successes have been reached to date *and not what is planned to happen in the future*.

In 2010, an indicator dictionary became available that resulted in significant changes in how data quality was assessed, presumably by providing standard definitions. Since 2010 outputs of routine program monitoring contribute to the indicators as defined in the national HIV M&E plan. Also in 2010, national guidelines that document the procedures for recording, collecting, collating and reporting routine program monitoring data from civil society and community-based systems were produced.

4. What is the title of the indicator dictionary?
5. Is the Indicator Dictionary for HIV or for the entire health sector? Please describe.
6. What organization produced and disseminated the indicator dictionary?
7. How complete, would you say, is the Indicator Dictionary?

Suggested probe: Are all of the indicators in the M&E plan in the indicator dictionary?

8. Please describe briefly what the M&E system looked like before the Indicator dictionary was in existence.

Suggested probes: Were there other documents being used in its place? Did something like this exist before? What led to the development of the indicator dictionary?

9. Please describe the experience of producing the indicator dictionary?

Suggested probes: What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners, such as PEPFAR, the United Nations family, The World Bank, and other bilateral organizations? What were critical lessons learnt? What are the plans for sustaining this overtime? How has the production of the indicator dictionary changed the quality of these data?

10. How has the integration of HIV indicators, through the harmonization process, improved the availability/use of quality HIV data?
11. How has the production of the indicator dictionary changed how these data are put to use?

Suggested probes: What types of decisions? Who makes them? In what kinds of forums? How frequently? How were data used prior to the indicator dictionary? What benefit do you see coming from the use of these indicator data?

12. How are outputs of the routine monitoring system fed into indicators? Please describe the process from source to collection, collation, analysis, reporting to use.
    I would now like to shift and talk briefly about the guidelines that were produced for recording, collecting, collating and reporting routine program monitoring data from civil society and community-based systems.
13. What is the title of the guidelines for recording, collecting, collating and reporting routine program monitoring data from civil society and community-based systems?
14. What organization produced and disseminated these guidelines?
15. Are these guidelines for HIV or for the entire health sector? Please describe this is the case.
16. How comprehensive would you say the Indicator Dictionary is? Probe: Are all of the indicators in the M&E plan in these guidelines?
17. Please describe the experience of producing guidelines for recording, collecting, collating and reporting routine program monitoring data from civil society and community-based systems?

Suggested probes: What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners, such as PEPFAR, the United Nations family, The World Bank, and other bilaterals)? What were critical lessons learnt? What are the plans for sustaining this overtime?

18. How has the production of guidelines for recording, collecting, collating and reporting routine program monitoring data from civil society and community-based systems changed the quality of these data?
19. How has the production of guidelines for recording, collecting, collating and reporting routine program monitoring data from civil society and community-based systems changed how these data are put to use?

Suggested probes: What types of decisions? Who makes them? In what kinds of forums? How frequently? How were data used prior to the indicator dictionary? What benefit do you see coming from the use of these indicator data?

20. What other significant changes have you witnessed in the routine monitoring system since 2007?
21. What value have these changes added to the national health M&E system as a whole?

22. How have these changes benefited the national HIV M&E system?

Component 8: Surveys and Surveillance

I understand that data for national strategic plan and M&E plan indicators were drawn from the results of a variety of surveys (such as DHS and EIS) and surveillance data, which were regularly conducted up to 2008.

23. How were surveys and surveillance implemented prior to 2008?
24. What surveys have been routinely conducted since 2008?
25. What has happened to surveys and surveillance since 2008?

Suggested probes: Has the situation improved or worsened? Why is this the case? Are surveys still routinely conducted?

26. Can you think of any other surveys or surveillance activities since 2008?

[**Walk through each survey or surveillance activity mentioned in questions 26 and 27 with the participant.**]

27. What has been the process of implementing survey/surveillance?

Suggested probes: What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners, such as PEPFAR, the United Nations family, The World Bank, and other bilateral organizations? What were critical lessons learnt? What are the plans for sustaining this overtime?

28. What was the data quality assurance process?
29. Into what indicators did that survey feed?
30. Do you see this as a good use of resources?
31. Could the data have been gotten another way?
32. How were the data used?

Suggested probes: What types of decisions? Who makes them? In what kinds of forums? How frequently?

33. Did the findings/report lead to any policy development?
34. Did the findings/report lead to any changes in program implementation?

Component 9: Databases

The most significant change identified by participants during the self-assessment workshop for the Côte d'Ivoire case study in August 2013 was that the existing national databases (SIGDEP and SIGVISION) were deployed with manuals that contain mechanisms for quality control. A supplemental manual of best practices was developed for SIGDEP to improve the quality of HIV data. These documents are the framework for quality control mechanisms that ensure data are accurately captured. We are also interested in exploring how these databases link to DHIS and the process of integration.

35. Do you know anything about SIGDEP or SIGVISION? (If no, skip to question 44)
36. What can you generally tell me about SIGDEP?
37. What can you generally tell me about SIGVISION?

38. What can you tell me about the SIGDEP manual?

    A. What topics does it address?
    B. How was it produced?

Suggested probes: What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners (e.g., PEPFAR, The UN Family, The World Bank and other bi-laterals)? What were critical lessons learnt? What are the plans for sustaining this overtime?

    C. How was it disseminated?
    D. How do you know it is actually in use by people interfacing with the database?
    E. What has been the most noticeable change since the manual's implementation?
    F. What value has that added to the HIV program?
    G. What value has that added to the M&E system?

39. What can you tell me about the SIGVISION manual?

    H. What topics does it address?
    I. How was it produced?

Suggested probes: What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners (e.g., PEPFAR, The UN Family, The World Bank and other bi-laterals)? What were critical lessons learnt? What are the plans for sustaining this overtime?

    J. How was it disseminated?
    K. How do you know it is actually in use by people interfacing with the database?
    L. What has been the most noticeable change since the manual's implementation?
    M. What value has that added to the HIV program?
    N. What value has that added to the M&E system?

40. Is there anything else that either or both databases have caused to change in the HIV M&E system?
41. Is there anything else that either or both databases have caused to change in the overall health M&E system?
42. Are there any other databases in use that are data sources for the HIV or overall health sector M&E System?

Suggested probes: What are they? When did they come online? What value have they added to the M&E system?

43. How has the process of link these databases with DHIS gone?

Suggested probes: What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners (e.g., PEPFAR, The UN Family, The World Bank and other bi-laterals)? How would you

describe the integration of these three databases? What were critical lessons learnt? What are the plans for sustaining this overtime?

Component 10: Supportive Supervision and Data Quality

Since 2008, PNPEC (National HIV Care and Treatment Program), PNOEV (National OVC program) adapted the national supportive supervision guide for HIV and OVC, developed materials and reached consensus on them. Supportive supervision was conducted as per the national protocols, in the past 6 months. Supportive supervision for HIV and OVC has been implemented for the past 4 years (since 2009) using *additional sheets* [produced] by PEPFAR & the Global Fund, DGLS, PNPEC, DIPE and ARIEL.

44. Can you explain for which interventions [Probe: ART, HTC, VMMC, OVC, etc] supportive supervision currently occurring in Côte d'Ivoire?

[For each intervention repeat the following questions.]

45. What specifically happened?

- ***Suggested probes:*** *What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners (e.g., PEPFAR, The UN Family, The World Bank and other bi-laterals)? What were critical lessons learnt? What are the plans for sustaining this overtime?*

46. Do these guidelines contain specific guidance on M&E?
47. Who provides the supervision?
48. Who receives the supervision?
49. What organization funds these visits? From where are resources mobilized to fund such visits?
50. Who reports on these visits?
51. Are there supportive supervision guidelines that are supposed to be used during these visits?
52. Who produced these guidelines?
53. How were these guidelines disseminated?
54. Was there any training on the use of these guidelines? Was a training of trainers conducted?
55. Are these guidelines used?
56. How do you know they are used?
57. What is supposed to happen during a supportive supervision visit?
58. What actually happens during a supportive supervision visit?
59. Have you ever participated in a supportive supervision visit? (If no, skip to question 65)
60. What happened during your visit?
61. How is information from supportive supervision visits put to use?
62. What change have you seen in the national HIV M&E system that you attribute to these visits?
63. What value has that change added to the national HIV M&E system?
64. What change have you seen in the national health M&E system that you attribute to these visits?
65. What value has that change added to the national health M&E system?
66. Is there anything else you would like to add about how supportive supervision has strengthened the M&E system for HIV, health or both HIV and health?

Component 11: Evaluation and Research

During the self-assessment workshop, participants agreed that over the past decade the ethics committee housed at CI Pasteur Institute has been strengthened, and the committee now meets monthly to approve research protocols. In 2011, during the development of the National Strategic Information Plan (PNIS), a national evaluation of the 12 components of the M&E system identified all studies and surveys on HIV to implement from 2011–2015. During the past decade, all results of studies and research have been used in policy formulation, planning, and implementation. Prime examples of how data have been used are (1) identification of new highly vulnerable groups and creation of a program that oversees efforts for these groups (PLS-PHV) and (2) determination of strategic priorities for the NSP 2012–2015.

6. Can you please describe how you perceive the overall state of evaluation and research in Côte d'Ivoire?
    A. What has changed since 2007?

Suggested probes: What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners (e.g., PEPFAR, The UN Family, The World Bank and other bi-laterals)? What were critical lessons learnt? What are the plans for sustaining this overtime?

    B. Has this been a success?
7. What do you see as the role of the ethics committee?
8. When was the most recent evaluation agenda produced?
    A. Does it contain all of the necessary evaluations and research activities?

    B. What is there?

    C. What is missing?

9. How was the most recent evaluation agenda produced?

Suggested probes: What specifically happened? What was Government's role? How much external technical and/or financial support was needed? Could this have been accomplished without this external support? What capacity development activities were required? What was the role of development partners (e.g., PEPFAR, The UN Family, The World Bank and other bi-laterals)? What were critical lessons learnt? What are the plans for sustaining this overtime?

10. How are the results of studies funneled into annual reports?

11. How are the results of studies put to use?

Suggested probes: Have you seen any changes in policy as a result of any evaluation or research activity? Have you seen any improvement in any program as a result of any evaluation or research activity?

12. Is there anything else you would like to comment on about evaluation and research in Côte d'Ivoire?

Conclusion

Thank you for your time and contribution to this activity. I would like to ask four more short questions to double check that I have captured everything you deem most important about what we discussed today.

13. What is the most important message that you want us to take away from this interview?

14. Is there anything else that you would like to add about any of the topics that we've discussed?

Probe *by highlighting areas you thought were critical. If you noted specific questions, comments and/or concerns about those areas, use those to probe now.*

15. Are there any documents you suggested we should review?

16. Is there anyone else you think we need to talk to about this topic?

17. Is there anything last thought you would like to share?

Thanks for all of this very useful information. We will be holding a Stakeholder Validation Meeting on Friday, 15 November at [Name of Venue where meeting will take place]. During this meeting we will be presenting the synthesized findings from this interview and others along with data extracted from the national HIV M&E system. We will ask participants at this meeting to *validate* these initial findings. I would like to invite you to this meeting and hope that you can participate. I will send you an email with all of the details this evening. [**Confirm participant's email and telephone number(s).**]

Côte d'Ivoire will benefit from this case study by highlighting sound, evidence-based recommendations and guidance for future M&E systems strengthening activities. This case study also will contribute to the development of a body of knowledge on systematic approaches and best practices for measuring M&E system strengthening by documenting how activities intended to build and strengthen M&E systems have resulted in improved data quality and availability that has led to greater data use.

Again, thank you for your time.

[**End at** ___ ___ **:** ___ ___]

Appendix 5: List of Verification Workshop Participants

BILA Charles	DIPE	Chargé suivi-évaluation
Oulaï Ibodé Valéri	PNLT	Informaticien, Asst S&E
Akaltia ERIC	ICAP	chargé de suivi évaluation
KEMERER, Verne	ICF International	Lead Consultant Case Study
DOUA ZAKA PHANRE	CECI	Personne Ressource
DANEY-NIABLE Florence	DIPE	S/D surveillance épidémiologi
SANOGO Tenon	SCDS/PSP	Senior Data Specialist
AYEMON Florent	PSP-CI	Agent suivi-Evaluat°
IRO Marius	Caritas	Resp S&E
ABOUA Nicole	DR Abidjan2	Sage-femme spécialiste en santé publique
BOHOUSSOU FRANCK	EGPAF	Ing. Stat Data Base Admin SGI
Kobenan ERIC	Assistant DIESS	Assistant DPESEVG
BOMBO Pacôme	DGIS	Chargé d'études
N'GUESSAN BERNARD	PLS-PHV	chargé de S/E
Woguin K. Venance	PLS-PHV	S/E
Kouassi Brou A	DGIS	Chargé d'études
Alain Somian	RIP+	Responsable SE
Josh Kizler	MEASURE Evaluation	Analyst
Gnamou Leontine	MEASURE Evaluat	Conseiller Resident
TOASSA G. César	Alliance CI	Chargé de S/E
BEHIBRO Rotoud	ANADER	S/E
OUATTARA SERGE G.	REPMASCI	chargé S/E
DJETY Guy Vincent	PNPEC	Chef service CD.
BOSSO Edwige	MEASURE Evaluation	conseiller tech. Suivi Evaluat°
KONATE MAH-K	MEASURE Evaluation	Coordonnateur de programme

Ali Coulibaly Ismaël	DPE	Délégué
Koffi Eponon Serges	DPSES	Assistant SdE
KADIO Aka	DPSES	Chef de service Enquêtes et Etudes
Dakoury-Dogbo Nicole	Aconda	Chef du service SR
Coulibaly Ramata	ONUSIDA	Conseiller en information stratégique

Appendix 6: List of Performance Indicators, Côte d'Ivoire

#	Indicator	In Use	Data Available
Research Question #1: How do key stakeholders perceive national level commitment to its health information systems (a subset of the M&E system) to have changed during the course of M&E systems strengthening interventions?			
4	Instances where country organizations or programs request and/or secure funding for M&E or HIS staff and/or activities[28]	YES	NO
5	Percentage of activities in the national M&E work-plan that are allocated to at least one lead host-country agency for implementation (line ministry, etc.)[29]	YES	NO
6	Percentage of total cost of the current year national M&E work plan which has been secured[30]	YES	NO
7	Percentage of total budget for the current year national HIV M&E work plan which will be funded by government[31]	YES	NO
8	% of total program budget allocated to M&E[32]	YES	NO
Research Question #2: How has M&E system performance improved as a result of M&E systems strengthening interventions?			
33	% of regional, national, or sub-national institutions assisted in M&E/HIS strengthening by MEASURE Evaluation that demonstrate increased capacity to independently carry out M&E/HIS activities independently[33]	YES	NO

[28] Source: MEASURE Evaluation, Indicator 1.1, 2012.

[29] Source: UNAIDS MERG, page 27, question 1.4, 2010.

[30] Source: UNAIDS MERG, page 31, question 4.2, 2010.

[31] Source: UNAIDS MERG, page 31, question 4.3, 2010.

[32] Source: The Global Fund et al, 2007.

[33] Source: MEASUE Evaluation, Indicator 2.1, 2012.

#	Indicator	In Use	Data Available
1	***% of M&E plan indicators reported against (for strategic period or fixed year as defined by the national M&E plan)[34]***	YES	***YES***
20	***% of expected reports received from districts on time[35]***	YES	***YES***
22	% of expected reports received from service sites (facilities or NGOs/CBOs)[36]	YES	NO
26	% of districts receiving feedback from data submitted through routine HIV/AIDS information systems[37]	YES	NO
29	Joint reviews of the HIV response takes place during annual reporting, mid-term and end-of term NSP reviews[38]	YES	NO
30	The HIV research and evaluations findings are being used in policy formulation, planning and implementation[39]	YES	NO
31	There are guidelines to support the analysis, presentation and use of data (e.g. graphs on walls showing cumulative coverage)[40]	YES	NO
Research Question #3: How has capacity of individuals – and organization's ability to absorb and put to use that capacity – improved as a result of M&E capacity development interventions designed to strengthen the M&E system?			
9	% of surveys and surveillance activities planned for in the research inventory implemented within past 12 months[41]	YES	NO
15	% of required DC points with computers to support capture[42]	YES	NO
16	% of human resources required to support IT efforts available[43]	YES	NO

[34] Source: UNAIDS MERG, page 39, question 16, and page 40, question 2, 2010.

[35] Source: Aqil et al, 2009; The Global Fund et al, 2007.

[36] Source: Aqil et al, 2009; The Global Fund et al, 2007

[37] Source: Aqil et al, 2009

[38] Source: UNAIDS MERG, page 48, question 2.1, 2010.

[39] Source: UNAIDS MERG, page 47, question 1.8, 2010.

[40] Source: UNAIDS MERG, page 49, question 5, 2010.

[41] Source: UNAIDS MERG, page 40, question 1, 2010.

[42] Source: UNAIDS MERG, page 43, question 4, 2010.

[43] Source: UNAIDS MERG, page 43, question 6, 2010.

#	Indicator	In Use	Data Available
17	% of identified sites receiving a supervision visit in the last 6 months as per national standards[44]	YES	NO
32	Percent of evaluation agenda implemented during the past completed year that have been disseminated and discussed by identified key stakeholders [45]	YES	NO
Research Question #4: What is the degree to which the M&E system draws its data directly from national health information systems?			
14	There is a functional integrated database for electronically capturing and storing data on a wide range of health services (including but not necessarily limited to HIV/AIDS services)[46]	YES	NO

[44] Source: UNAIDS MERG, page 44, question 2, 2010.

[45] Source: UNAIDS MERG, pages 46–48, 2010.

[46] Source: UNAIDS MERG, page 43, question 2, 2010.

Appendix 7: Timeline for Côte d'Ivoire's National HIV M&E System Achievements

Year	Event
pre-2007	National guidelines developed for entering routine HIV data into health facility registers
2007	HIV information database, SIGVISION, developed to collate routine health data at district and regional levels Significant gaps identified in data availability, data flow, human resources, and M&E skills in the social sector following a situational assessment National Monitoring Committee formed to estimate and manage antiretroviral drugs (ARV) and laboratory supply needs The Public Health Pharmacy, with donor support, develops a Management Information System (MIS) for ARV drug and supply chain management
2008	SIGDEP begins to be developed by revising SIGVISION paper-based tools to capture routine HIV data electronically Information Technology Technical Working Group created to establish a single database for the health sector that includes HIV facility- and community-based data streams Findings from an assessment of the HIV M&E system using the PRISM Assessment Tool[47] leads to production of new data collection tools Electronic management of ARV treatment and HIV patient records initiated by ACONDA using Monistac software Migration of ACONDA data to SIGVIH begins, managed by the Directorate of Information, Planning, and Evaluation Supervision Grid produced to conduct supervision with the local initiative's technical support unit for solving problems related to program management and data quality Data validation meetings instituted by the Ministry of Health in the Fight Against AIDS following a training in the Routine Data Quality Assessment Tool[48] to verify accuracy of HIV data with health centers before collation at the regional level Stock-outs of ARV drug and supplies are noticeably reduced according to key informants
2009	SIGVIH renamed SIGDEP, and SIGDEP version 1.5.5 released Need for new strategic plan for second-generation surveillance identified following a situational analysis
2010	Multiple ministries participate in the MEASURE Evaluation Leadership Development Program and identify a lack of standard indicator definitions that produce poor quality data "Second Ivoirian Civil War" begins New strategic plan for second-generation surveillance developed
2011	PEPFAR ceases to fund paper-based data collection and requests SIGDEP be used to collect PEPFAR data

[47] MEASURE Evaluation. (2009). Performance of Routine Information System Management, PRISM Tools for Assessing, Monitoring, and Evaluating RHIS Performance.
[48] The Global Fund to Fight Aids, Tuberculosis and Malaria, Office of the Global AIDS Coordinator, PEPFAR, USAID, WHO, UNAIDS, MEASURE Evaluation. Routine Data Quality Assessment Tool, Guidelines for Implementation for HIV, TB & Malaria Programs, June 2008.

Year	Event
	"Second Ivoirian Civil War" ends
	National Program for Orphans and Vulnerable Children Reporting Guidelines developed to address significant gaps in social sector M&E system
	Strategic plan for second-generation surveillance incorporated into 2011–2015 National Strategic Plan for HIV
2012	HIV Indicator Dictionary becomes available with harmonized indicators with standard definitions
	National HIV M&E Plan 2011–2015 and National HIV Strategic Plan, 2012–2015 developed using the HIV Indicator Dictionary
	New Data Management and Procedures Manual, developed based on HIV Indicator Dictionary, disseminated
	SIGDEP user manual released
	Roughly 60% of facilities with $\geq$ 200 HIV patients per month have SIGDEP installed
	Malaria drugs and supply chain management data added to Management Information System

Appendix 8: List of Indicators Reported Against in Annual Reports

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Couverture en PEC ARV	ARV				X				
Couverture géographique en offre de PEC médicale des PVVIH	ARV					X		X	
Couverture nationale en offre de PEC médicale des PVVIH	ARV								X
Nombre cumulé de patients ayant pris au moins une fois les ARV	ARV				X	X			
Nombre de patients actifs sous ARV à la fin de l'année	ARV				X	X			
Nombre de patients qui ne sont pas venus chercher leur Traitement ARV	ARV							X	
Nombre total de nouveaux patients ayant commencé le traitement au cours de l'année (nouvelles inclusions)	ARV				X	X		X	X
Nombre total de patients actifs sous ARV à la fin de l'année	ARV							X	X
Proportion des patients ayant arrêté de prendre leur traitement à la fin de l'année	ARV					X			
Proportion des PVVIH sous régimes thérapeutiques ARV de 1ere ligne selon les différents protocoles utilisés en Côte d'Ivoire	ARV				X				
Répartition des sites de PEC médicale des PVVIH par district	ARV					X			

[49] As listed in available documents.

[50] No annual report was produced for 2010 data.

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Taux d'attrition	ARV							X	
Nombre de personnes formées par emploi et par domaine	Capacity Development		X						
Nombre de comités régionaux opérationnels	Coordination		X						
Nombre de comités sectoriels opérationnels	Coordination		X						
Nombre de PV de réunions statutaires du CCLS organisées et transmis au CDLS	Coordination		X						
Nombre de PV de réunions statutaires du CDLS organisées et transmis au CRLS avec rétro information au CDLS	Coordination		X						
Nombre de région disposant d'un plan d'action de lutte contre le VIH/sida	Coordination			X					
Nombre de réunions de coordination organisées par le CNLS	Coordination			X					
Nombre de réunions statutaires organisées avec PV disponible	Coordination		X						
Nombre de sessions du CMP tenues	Coordination		X						
Nombre de sessions spéciales de Conseil de Gouvernement portant sur le VIH/SIDA	Coordination		X						
Taux d'exécution (recettes et dépenses)	Finance		X						
Dépenses intérieures et internationales pour la lutte contre le sida par catégories et sources de financement (NASA)	Governance			X					
Pourcentage du budget de l'Etat consacré à la lutte contre le VIH/sida dans le budget global de l'Etat	Governance			X					
Nombre de formations organisées par structure au cours de l'année	Health Personnel					X			
Répartition des formations et des participants par domaine programmatique	Health Personnel					X			

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Répartition des prestataires formés (participants) par qualification et par domaine programmatique	Health Personnel					X			
Couverture en conseil et dépistage	HTC				X				
Couverture géographique en conseil et dépistage	HTC					X		X	
Couverture nationale en offre de service de conseil et dépistage	HTC								X
Nombre clients ayant retiré leur résultat	HTC							X	X
Nombre clients dépistés positifs au VIH	HTC							X	
Nombre de clients conseillés	HTC				X	X		X	X
Nombre de clients conseillés en moyenne par site	HTC					X		X	
Nombre de clients conseillés et testés ayant retiré leur résultat	HTC				X				
Nombre de clients dépistés ayant reçu leur résultat	HTC					X			
Nombre de clients dépistés ayant reçu leur résultat en moyenne par site	HTC					X		X	
Nombre de clients dépistés en moyenne par site	HTC					X		X	
Nombre de clients dépistés positifs au VIH	HTC								X
Nombre de clients dépistés VIH positif	HTC					X			
Nombre de clients dépistés VIH+ en moyenne par site	HTC					X		X	
Nombre de clients testés	HTC				X				
Nombre des clients dépistés	HTC					X			X
Nombres de clients VIH +	HTC				X			X	
Proportion de partenaires sexuels (sujets contacts) retrouvés	HTC	X							
Proportion de personnes conseillées et dépistées au VIH	HTC	X							
Proportion de personnes conseillées et dépistées au VIH	HTC								X
Proportion de personnes dépistées positifs au VIH	HTC								X

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Proportion de personnes dépistées positives au VIH	HTC	X							
Proportion de personnes dépistées pour le VIH et qui connaissent leur statut sérologique	HTC	X							
Proportion de personnes dépistées pour le VIH et qui connaissent leur statut sérologique	HTC								X
Proportion de poches de sang soumise à un dépistage de qualité du VIH	HTC	X							
Taux d'acceptation de dépistage	HTC							X	
Taux de retrait	HTC							X	
Taux de dépistage	HTC					X			
Taux de positivité	HTC							X	
Taux de retrait du résultat	HTC					X			
Index de stigmatisation et de discrimination	Impact Mitigation			X					
Indice de vulnérabilité des OEV	Impact Mitigation			X					
Les lois sur les PIAVIH sont adoptées et ou appliquées	Impact Mitigation			X					
Pourcentage d'enfants rendus orphelins et autres enfants vulnérables âgés de 0 à 17 ans vivant dans des foyers bénéficiant d'une aide extérieure gratuite pour leur prise en charge	Impact Mitigation			X					
Proportion de femmes et d'hommes bénéficiaires d'AGR pouvant satisfaire au moins 3 besoins de base (alimentation, santé et abri)	Impact Mitigation			X					
Taux de fréquentation scolaire des enfants de 10 à 14 ans dont les deux parents sont en vie et qui vivent avec au moins l'un d'eux	Impact Mitigation			X					
Taux de fréquentation scolaire des orphelins de 10 à 14 ans	Impact Mitigation			X					

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Nombre d'acteurs ayant reçu un exemplaire du répertoire annuel des Enquêtes Epidémiologiques, comportementales et études réalisées	M&E		X						
Nombre de rapport annuel sur le VIH/sida élaboré	M&E			X					
Nombre de rapports produits	M&E		X						
Nombre de revue à mis parcours du PSN réalisées	M&E			X					
Nombres d'études et d'enquêtes réalisés	M&E			X					
Pourcentage [%] de régions menant les activités de surveillance sentinelle,	M&E		X						
Pourcentage [%] de structures opérationnelles en matière de compilation des données par niveau	M&E		X						
Pourcentage [%] d'organes de coordination opérationnels	M&E		X						
Proportion des enquêtes et études planifiées et réalisées sur le nombre d'enquête et d'études planifiées	M&E			X					
Nombre de sites par type d'activités (CDV, PTME, PEC) selon l'année	Number of sites				X				
Couverture en PTME	PMTCT				X				
Couverture géographique en offre de service PTME	PMTCT					X		X	
Couverture nationale en offre de service PTME	PMTCT								X
CPN 1	PMTCT								X
Enfants nés de mères séropositives au VIH dépistés positifs	PMTCT								X
Enfants nés de mères séropositives au VIH dépistés Précocement (2–12 mois)	PMTCT								X
Femmes enceintes ayant bénéficié d'un bilan initial	PMTCT							X	X
Femmes enceintes ayant reçu le resultat du test VIH	PMTCT								X
Femmes enceintes dépistées séropositives au VIH	PMTCT							X	

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Femmes enceintes séropositives au VIH	PMTCT								X
Femmes enceintes séropositives qui reçoivent les ARV pour réduire le risque de transmission Mère Enfant (elle-même+sous traitement)	PMTCT								X
Femmes VIH+ ayant reçu une prophylaxie ARV pour elle-même	PMTCT							X	X
Femmes VIH+ ayant reçu une prophylaxie ARV pour leur enfant	PMTCT							X	X
Femmes VIH+ sous traitement ARV	PMTCT							X	
Grossesses attendues	PMTCT					X		X	X
Nombre d'enfants nés de mères séropositives dépistés positifs au VIH	PMTCT					X		X	
Nombre de conjoints des femmes enceintes vues en PTME testés au VIH	PMTCT	X							
Nombre de femmes enceintes ayant bénéficié d'une thérapie antirétrovirale pour réduire la transmission mère-enfant (7+8)	PMTCT				X				
Nombre de femmes enceintes ayant reçu un conseil et une proposition de test VIH	PMTCT								X
Nombre de femmes enceintes ayant reçu une dose ARV pour elles-mêmes	PMTCT				X	X			
Nombre de femmes enceintes ayant reçu une dose ARV pour leur enfant	PMTCT				X	X			
Nombre de femmes enceintes conseillées	PMTCT				X				
Nombre de femmes enceintes conseillées (CPN+Maternité)	PMTCT					X		X	
Nombre de femmes enceintes conseillées et testées ayant retiré leur résultat	PMTCT				X			X	
Nombre de femmes enceintes séropositives	PMTCT				X	X			
Nombre de femmes enceintes séropositives au VIH sous traitement ARV	PMTCT				X				X
Nombre de femmes enceintes séropositives sous traitement ARV	PMTCT					X			
Nombre de femmes enceintes testées (CPN+Maternité)	PMTCT				X			X	X
Nombre de femmes enceintes testées ayant reçu leur résultat	PMTCT					X			

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Nombre de femmes enceintes vues en CPN1	PMTCT				X	X		X	
Nombre de femmes enceintes vues en CPN1 dans les services PTME	PMTCT					X		X	X
Nombre de grossesses attendus	PMTCT				X				
Pourcentage de nouveaux nés de mères infectées par le VIH, qui ont commencé une prophylaxie par antirétroviraux dans les 72 heures de vie	PMTCT	X							
Pourcentage de femmes enceintes testées pour le VIH	PMTCT	X							
Pourcentage de nourrissons nés de femmes séropositives, ayant bénéficié d'un dépistage du VIH (recherche virologique ou sérologique) avant l'âge de 12 mois	PMTCT	X							
Pourcentage de nourrissons nés de mères séropositives ayant bénéficié d'une alimentation exclusive pendant les 6 premiers mois de vie	PMTCT	X							
Pourcentage d'enfants nés de mères séropositives ayant débuté la prophylaxie au CTX pendant les deux mois après la naissance	PMTCT	X							
Pourcentage des femmes enceintes connaissant leur statut sérologique	PMTCT	X							
Proportion de femmes enceintes fréquentant les services de santé maternelle et infantile séropositives au VIH	PMTCT	X							
Proportion des femmes enceintes séropositives qui reçoivent des antirétroviraux pour réduire le risque de transmission mère-enfant	PMTCT	X							
Incidence des IST au sein de la population sexuellement active	Prevention		X						
Incidence du VIH dans la population des hommes et femmes sexuellement actifs	Prevention			X					
Incidence du VIH/SIDA chez les nouveaux donneurs de sang	Prevention		X						
Nombre d'études menées	Prevention		X						
Nombre de tests de dépistage VIH réalisé	Prevention	X							
Nombre de départements couvets	Prevention		X						
Nombre de nouveaux cas d'AES chez le personnel de santé	Prevention		X						

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Nombre de personnes sensibilisées sur les cas d'accident à l'exposition au sexe	Prevention		X						
Nombre de programmes d'interventions spécifiques faisant la promotion de la lutte contre la stigmatisation et la discrimination liées au VIH au niveau individuel, communautaire et professionnel	Prevention		X						
Nombre de programmes de recherches menées	Prevention		X						
Nombre de régions administratives disposant d'un service de référence IST	Prevention		X						
Nombre de textes de lois élaborés et adoptés	Prevention		X						
Pourcentage d'enfants nés de mères séropositives qui ont reçu la prophylaxie	Prevention			X					
Pourcentage d'hommes déclarant avoir utilisé un préservatif lors de leur dernier rapport annal avec un partenaire masculin	Prevention			X					
Pourcentage de consommateurs de drogues ayant accès au traitement de substitution	Prevention		X						
Pourcentage de femmes enceintes qui utilise les services de CPN	Prevention			X					
Pourcentage de femmes et d'hommes de 15 à 49 ans ayant eu plus d'un partenaire au cours des12 derniers mois et qui ont utilisé un préservatif lors de leur dernier rapport sexuel	Prevention			X					
Pourcentage de jeunes âgés de 15 à 24 ans qui indiquent utiliser un préservatif lors de rapport sexuel avec un partenaire	Prevention			X					
Pourcentage de nourrissons nés de mères séropositives qui sont infectés par le VIH	Prevention			X					
Pourcentage de personnel de santé formé à la prise en charge des AES	Prevention		X						
Pourcentage de poches de sang soumis à un dépistage de qualité du VIH	Prevention			X					
Pourcentage de population a risque touché par les programmes de prévention	Prevention			X					

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Pourcentage de PS atteint par les programmes de prévention	Prevention			X					
Pourcentage de séroconversion chez les donneurs de sang réguliers	Prevention		X						
Pourcentage des patients hommes et femmes victimes d'AES ayant reçu une Prophylaxie Post Exposition	Prevention			X					
Prévalence du VIH chez les adultes de 15 – 49 ans	Prevention			X					
Prévalence du VIH chez les hommes et femmes de la population carcérale	Prevention			X					
Prévalence du VIH chez les HSH	Prevention			X					
Prévalence du VIH chez les PS (hommes et femmes)	Prevention			X					
Prévalence du VIH/SIDA par transmission sanguine chez les consommateurs de drogues injectables	Prevention		X						
Prévalence du VIH/SIDA par transmission sexuelle chez les consommateurs de drogues	Prevention		X						
Proportion de cas d'IST dépistés et correctement traités selon l'approche syndromique	Prevention		X						
Proportion de femmes enceintes séropositives qui reçoivent un traitement antirétroviral complet pour réduire le risque de TME	Prevention			X					
Proportion de femmes enceintes, conseillées dépistées et qui ont reçu leur résultat	Prevention			X					
Proportion de jeunes ayant leur premier rapport sexuel après 18 ans	Prevention		X						
Proportion de la population ayant effectué un dépistage volontaire	Prevention			X					
Proportion de personnes déclarant avoir limité le nombre de leur partenaire sexuel à un	Prevention		X						
Proportion de PVVIH ayant déclaré adopter des comportements responsables	Prevention		X						
Proportion de PVVIH fréquentant les centres de prise en charge	Prevention		X						

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Proportion des cas d'AES du personnel de santé pris en charge correctement	Prevention		X						
Proportion des femmes sexuellement actives utilisant systématiquement et correctement les préservatifs féminins	Prevention		X						
Proportion des jeunes de 15 à 24 ans utilisant systématiquement le préservatif masculine	Prevention		X						
Proportion des personnes sexuellement actives déclarant avoir eu une IST au cours des 12 derniers mois	Prevention		X						
Proportion des structures de consultation prénatale offrant des services de PTME	Prevention		X						
Taux de dépistage des femmes enceintes	Prevention		X						
Taux de dépistage par centre de CDV	Prevention		X						
Taux de sécurisation du sang transfuse	Prevention		X						
Taux de transmission du VIH de la mère à l'enfant chez les femmes bénéficiant des activités de PTME	Prevention		X						
Taux de réalisation des enquêtes et recherches	Research		X						
Nombre d'acteurs en soins palliatifs formés	Support		X						
Nombre de campagne de sensibilisation pour les soins palliatifs organisés	Support		X						
Nombre de campagnes de sensibilisation des communautés sur la problématique des OEV	Support		X						
Nombre de cas de violations assistés	Support		X						
Nombre de centres de prise en charge approvisionnés en micronutriments et kits de nutrition thérapeutique	Support		X						
Nombre de districts sanitaires assurant la prise en charge médicale des PVVIH	Support		X						
Nombre de documents nationaux de normes, guides et standards de	Support		X						

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
qualité des services de prise en charge médicale (clinique, laboratoire, pharmacie) produits									
Nombre de familles d'OEV bénéficiaires d'AGR	Support		X						
Nombre de groupes d'autosoutien mis en place	Support		X						
Nombre de patients ayant bénéficié du paquet minimum de service de prévention positive	Support	X							
Nombre de personnes infectées par le VIH enregistrées dans les services de soins	Support	X							
Nombre de personnes infectées par le VIH ayant débuté le traitement antirétroviral et qui ne sont pas venus retirés leurs ARV	Support	X							
Nombre de personnes vivant avec le VIH ayant reçu au moins une fois la thérapie antirétrovirale (ART).	Support	X							
Nombre de personnes vivant avec le VIH sous ARV et qui reçoivent toujours leur traitement (file active)	Support	X							
Nombre de PIAVIH bénéficiaires d'AGR	Support		X						
Nombre de PIAVIH bénéficiaires d'une réinsertion sociale	Support		X						
Nombre de rapports sur la prise en charge médicale produits	Support		X						
Nombre de ruptures en ARV et intrants stratégiques (médicaments /IOS/TUB/IST/Soins Palliatifs, réactifs et consommables)	Support		X						
Nombre de structures impliquées dans les soins palliatifs à domicile et dans la communauté	Support		X						
Nombre de structures offrant les soins palliatifs	Support		X						
Nombre de supervision des activités de soutien nutritionnel	Support		X						
Nombre de travaux de recherche clinique, thérapeutique et biologique menés	Support		X						
Nombre d'enquêtes annuelles de surveillance épidémiologique du VIH conduites	Support		X						

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
Nombre d'études réalisées	Support		X						
Nombre d'OEV déscolarisés et non scolarisés insérés dans la vie socioprofessionnelle	Support		X						
Nombre d'organisations approvisionnées en micronutriments et kits de nutrition thérapeutique	Support		X						
Pourcentage [%] PVVIH Hommes, Femmes bénéficiant d'une PEC et qui ont une qualité de vie améliorée	Support			X					
Pourcentage d'adultes (Homme, Femmes) et enfant infectés par le VIH dont on sait qu'ils sont toujours sous ARV à 12 mois après le début de celui-ci	Support			X					
Pourcentage de PVVIH Hommes et femmes en besoins de traitement qui bénéficient de traitement ARV selon le protocole	Support			X					
Pourcentage de tuberculeux dépistés séropositifs au VIH recevant concomitamment le traitement antituberculeux et un traitement contre le VIH.	Support			X					
Pourcentage de tuberculeux séropositifs au VIH sous traitement antituberculeux et recevant le traitement ARV	Support	X							
Proportion de personnes vivant avec le VIH éligibles au traitement ARV et ayant débuté une thérapie antirétrovirale (Nouvelle inclusion).	Support	X							
Proportion d'établissements sanitaires offrant des ARV et ayant connu une rupture de stock d'ARV au cours du mois	Support	X							
Proportion d'Accidents d'Exposition au Sang et autres produits biologiques (AES) pris en charge	Support	X							
Proportion de centres de prise en charge du VIH offrant la prise en charge pédiatrique	Support		X						
Proportion de patients d'une même cohorte qui sont passés de la 1ère ligne à la 2ème ligne thérapeutique à 6 mois et à 12 mois	Support	X							
Proportion de patients tuberculeux dépistés positifs au VIH	Support	X							
Proportion de patients tuberculeux dépistés pour le VIH	Support		X						
Proportion de personnes infectées par le VIH chez qui la TB a été	Support	X							

Indicator	Strategic Area[49]	Indicator Dictionary	M&E Plan		Indicators in Annual Reports				
			2006–2010	2011–2015	2007–2008	2009	2010[50]	2011	2012
diagnostiquée									
Proportion de personnes infectées par le VIH éligibles au traitement ARV	Support	X							
Proportion de personnes séropositives recevant la prophylaxie au Cotrimoxazole (CTX).	Support	X							
Proportion de personnes vivant avec le VIH encore en vie et sous traitement, 12 mois après le début de la thérapie antirétrovirale.	Support	X							
Proportion des patients VIH positifs (sous ARV ou pas) dans un centre de prise en charge chez qui le traitement de la tuberculose a débuté	Support	X							
Proportion des patients VIH positifs ayant fait l'objet d'une recherche active de la tuberculose dans un centre de prise en charge	Support	X							