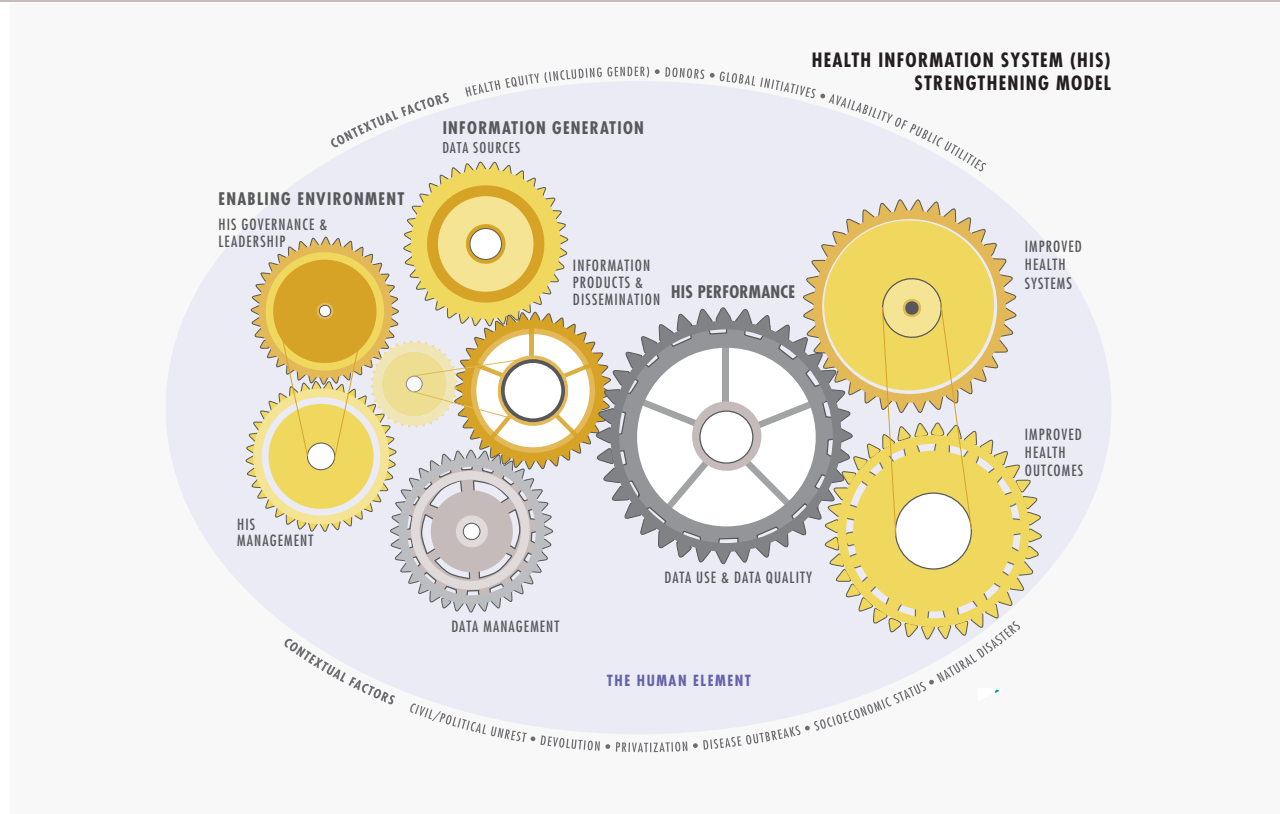# Strengthening Health Information Systems in Côte d'Ivoire

MEASURE Evaluation, which is funded by the United States Agency for International Development, worked in Côte d'Ivoire from 2004-2019 to support health information system (HIS) strengthening and improve the availability and use of high-quality health data. Efforts to upgrade and make several of the vertical data subsystems interoperable have been central to this work: subsystems that manage the country's patient-level HIV data (SIGDEP 2), data for orphans and vulnerable children (OVC), and the electronic logistics management system (eLMIS), along with routine health data in the DHIS 2.[1] This work with the Ministry of Health (MOH) and the National OVC Program strengthens elements of the HIS identified in MEASURE Evaluation Health Information System Strengthening Model (HISSM), shown at right.

For example, in the model's area of an "enabling environment" for a strong HIS, MEASURE Evaluation has coordinated stakeholders across the various subsystems to harmonize national health indicators and to ensure the regular use of data to support program policy and action. In the "information generation" area, MEASURE Evaluation has supported the implementation of decentralized databases and capability building to utilize subsystems and analyze data at all levels of the health system.

The graphic below superimposes on the HISSM descriptions of MEASURE Evaluation's activities in the
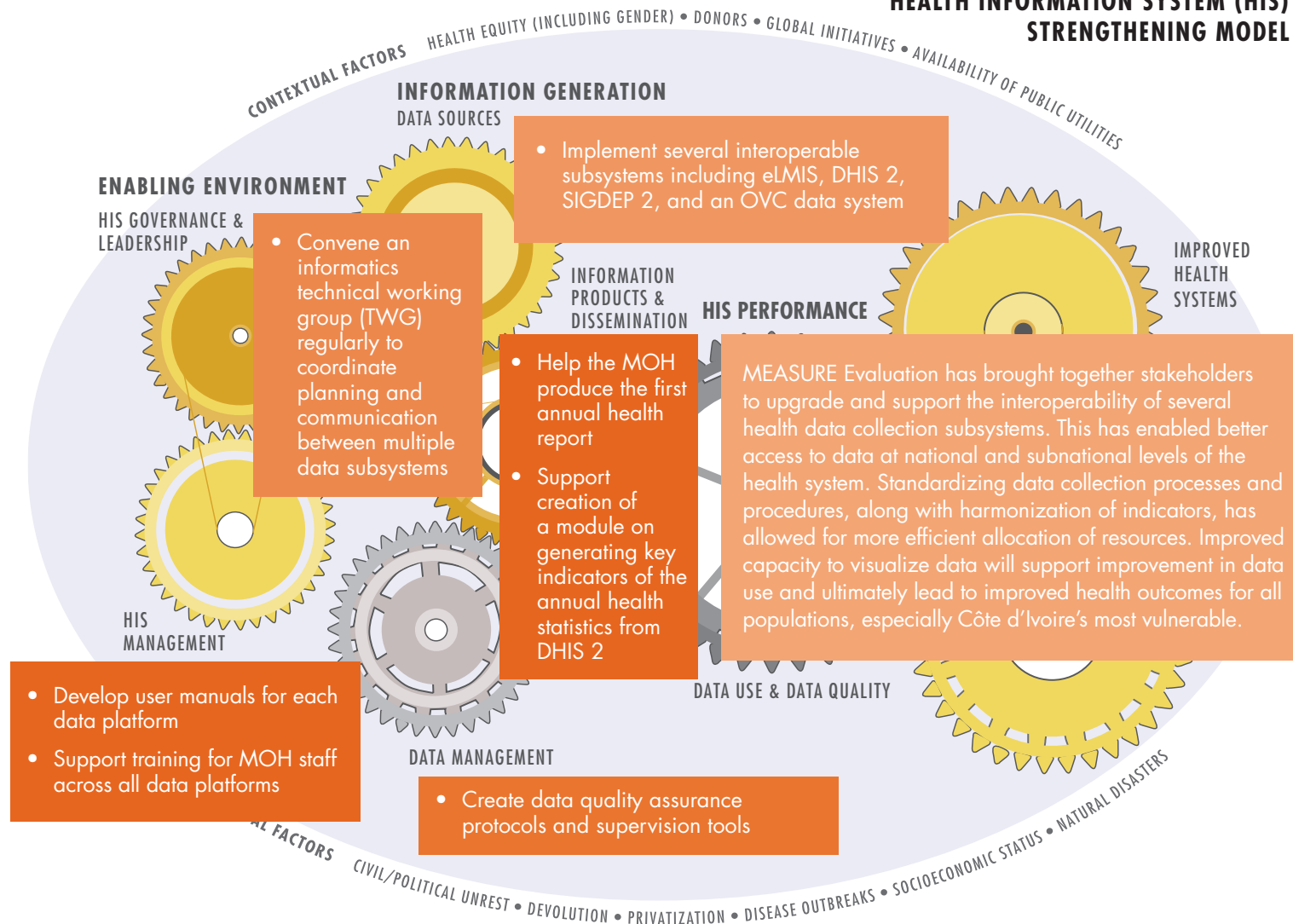

enabling environment and information generation areas to support harmonization of information needs and facilitate better data sharing across entities. By displaying key interventions across the model, we see their strategic interaction, and how this combination of interventions works together to strengthen data quality and data use at all levels of the health system. The table beneath the

graphic lists additional MEASURE Evaluation activities that support HIS strengthening. As a result of these interventions, we expect the quality of the data collected to improve and the use of HIS data to generate health indicators, statistics, and trends for data-informed decision making to increase.

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[1] District Health Information Software, version 2—an electronic platform for the collection and analysis of health data

MEASURE Evaluation's Work to Support Unified Data Systems in Côte d'Ivoire

**HEALTH INFORMATION SYSTEM (HIS)
STRENGTHENING MODEL**

CONTEXTUAL FACTORS

HEALTH EQUITY (INCLUDING GENDER) • DONORS • GLOBAL INITIATIVES • AVAILABILITY OF PUBLIC UTILITIES

INFORMATION GENERATION

DATA SOURCES

ENABLING ENVIRONMENT

HIS GOVERNANCE & LEADERSHIP

- Implement several interoperable subsystems including eLMIS, DHIS 2, SIGDEP 2, and an OVC data system

- Convene an informatics technical working group (TWG) regularly to coordinate planning and communication between multiple data subsystems

INFORMATION PRODUCTS & DISSEMINATION

HIS PERFORMANCE

IMPROVED HEALTH SYSTEMS

- Help the MOH produce the first annual health report

- Support creation of a module on generating key indicators of the annual health statistics from DHIS 2

MEASURE Evaluation has brought together stakeholders to upgrade and support the interoperability of several health data collection subsystems. This has enabled better access to data at national and subnational levels of the health system. Standardizing data collection processes and procedures, along with harmonization of indicators, has allowed for more efficient allocation of resources. Improved capacity to visualize data will support improvement in data use and ultimately lead to improved health outcomes for all populations, especially Côte d'Ivoire's most vulnerable.

HIS MANAGEMENT

DATA USE & DATA QUALITY

- Develop user manuals for each data platform

- Support training for MOH staff across all data platforms

DATA MANAGEMENT

- Create data quality assurance protocols and supervision tools

AL FACTORS

CIVIL/POLITICAL UNREST • DEVOLUTION • PRIVATIZATION • DISEASE OUTBREAKS • SOCIOECONOMIC STATUS • NATURAL DISASTERS

MEASURE Evaluation's Other HIS Strengthening Work in Côte d'Ivoire						
HISSM areas	**HISSM subarea (gears)**	**Health information system strengthening activities**				
		2015	**2016**	**2017**	**2018**	**2019**
Enabling environment	**HIS governance and leadership**	• Provide technical assistance (TA) to revise HIS indicators	• Support the MOH in setting program targets, data analysis, and strategic planning at all levels • Organize stakeholders to identify key OVC dashboard indicators to meet the information needs at various health system levels • Coordinate biannual meetings to use OVC data for program planning • Organize workshops to develop community-level indicators	• Continue to hold regular informatics TWG meetings to support the coordination of subsystems • Support the HIV Care and Treatment TWG	• Support the Informatics TWG • Support the HIV Care and Treatment TWG • Support the DREAMS[2] M&E TWG to develop DREAMS data collection tools • Develop an indicator list for the DREAMS program	• Support the Informatics TWG • Support PMI partner coordination meetings • Support the National Malaria Control Program (NMCP) in organizing data review and use meetings at the central and district levels • Support the NMCP TWG to develop malaria surveillance plan
	HIS management	• Train 20 trainers on the OVC web platform to support cascade trainings • Update DHIS 2 with revised indicators	• Organize workshops to implement DHIS 2 dashboards using agreed-upon indicators • Develop an enterprise architecture document for the national HIS to support the interoperability of various software platforms • Organize a workshop to develop and test a module allowing interoperability of different software • Develop a U.S. President's Emergency Plan for AIDS Relief reporting indicator template for a web-based SIGDEP 2 reporting platform • Assess the functionalities of the newly developed software platforms (DHIS 2, eLMIS, SIGDEP 2, and OVC web platform)	• Conduct a situational analysis of the information technology, organizational, and behavioral environment for the implementation of eLearning and online TA modules • Develop a module to ensure interoperability between DHIS 2, SIGDEP 2, eLMIS, and OVC systems • Conduct TOT on the eLearning platform • Develop a procedural manual for data management of the Côte d'Ivoire Early Warning System • Train central-level staff on data review and data use for validation workshops at district level	• Conduct a PRISM assessment to assess RHIS improvements since 2012 • Transfer the eLMIS system to the National Pharmacy of Public Health server • Hold a TOT on use of DREAMS data collection tools • Support participation of NMCP staff in a Malaria M&E course • Develop data exchange modules for HIS interoperability • Develop a metadata dictionary for interoperability between health information data systems in Côte d'Ivoire	• Develop, install, and implement a server version of SIGDEP 2 to facilitate data exchange between SIGDEP 2 and DHIS 2 • Organize quarterly HIS management follow-up meetings • Support linking of national DREAMS and OVC databases • Provide technical and financial support for a national course on malaria surveillance and M&E for MOH staff • Train regional malaria advisors, private sector staff, and NMCP staff on DHIS 2 and use of data • Conduct TOT on community-level data collection tools • Train MOH staff on routine data quality assessment (RDQA) • Develop a software user manual for Côte d'Ivoire's government ministries

[2] DREAMS is a partnership with the mission of helping girls develop into Determined, Resilient, Empowered, AIDS-Free, Mentored, and Safe women

MEASURE Evaluation's Other HIS Strengthening Work in Côte d'Ivoire						
HISSM areas	**HISSM subarea (gears)**	**Health information system strengthening activities**				
		2015	**2016**	**2017**	**2018**	**2019**
Information generation	**Data sources**	• Assist in the development of an eLMIS to manage drugs • Develop the OVC web-based system aligned with newly identified information needs	• Deploy web-based SIGDEP 2 in 28 sites for enhanced monitoring of prevention of mother-to-child transmission programs		• Integrate a module of community-based indicators for malaria into DHIS 2 • Deploy DHIS 2 to 11 general hospitals • Develop an electronic DREAMS database	
	Information products and dissemination			• Develop SIGDEP 2 and DHIS 2 data analysis dashboards	• Provide TA to develop and distribute malaria newsletters • Develop a dashboard to monitor implementing partner activities and trainings related to malaria • Develop a health data visualization portal for the central, regional, and district levels • Develop a dashboard of malaria indicators	• Support development of malaria bulletins

MEASURE Evaluation's Other HIS Strengthening Work in Côte d'Ivoire

HISSM areas	HISSM subarea (gears)	Health information system strengthening activities				
		2015	**2016**	**2017**	**2018**	**2019**
Information generation	**Data management**	• Conduct supportive supervision at the regional and district levels • Support revision of indicators, data collection tools, and reporting systems for routine monitoring of the prevention of mother-to-child transmission Option B+ program • Facilitate on-site training for data analysis and use of indicator dashboards at the regional and district levels	• Provide eLMIS site supervision and online assistance • Organize workshops to develop data collection tools for epidemiologic disease surveillance • Conduct a pilot phase of new data collection tools for community-level surveillance	• Conduct regular data quality audits to comply with national guidelines	• Train hospital staff on DHIS 2 • Develop data collection tools for DREAMS interventions • Develop standardized community-based data collection tools for malaria • Train health district and regional staff on malaria data • Facilitate data review meetings with district and regional malaria staff • Provide TA to the NMCP and regional malaria advisers to conduct a data review and validation meeting for private sector malaria data • Train private health sector staff on DHIS 2 and use of data	• Support revision of national OVC program data collection tools • Support targeted supervision visits on electronic tool deployment • Supervise implementation of data collection tools in private health clinics • Supervise implementation of data collection tools at the community level • Provide TA for RDQAs at the community level • Support data validation meetings at the regional level • Develop and validate performance standards for malaria case management • Support RDQAs in public health facilities at 12 sentinel sites • Provide TA for RDQAs in the private health clinics in one selected district