Landscape Survey

Understanding the Monitoring of Nutrition Assessment, Counseling, and Support

April 2018

USAID FROM THE AMERICAN PEOPLE

PEPFAR

MEASURE Evaluation

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Cover photo: Community health workers at Mwangoya Health Centre in Nzega District of the Tabora Region in Tanzania, by David Hales

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ABBREVIATIONS

ARV	antiretroviral drugs
ART	antiretroviral therapy
HMIS	health management information system
LEAP	Livelihood Empowerment Against Poverty
LIFT	Livelihood and Food Security Technical Assistance
M&E	monitoring and evaluation
MOH	Ministry of Health
MUAC	mid-upper arm circumference
NACS	nutrition assessment, counseling, and support
PEPFAR	President's Emergency Plan for AIDS Relief
PHFS	Partnership for HIV-Free Survival
PLHIV	people living with HIV
PMTCT	prevention of mother-to-child transmission (of HIV)
PROMISE	Promoting Maternal-Infant Survival Everywhere
USAID	U.S. Agency for International Development

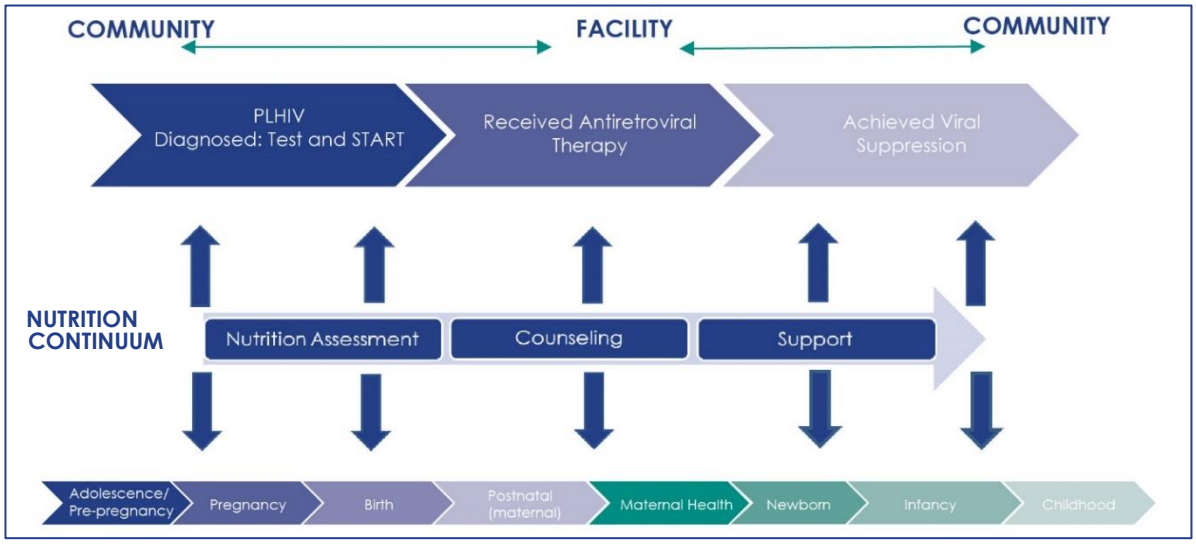
BACKGROUND

The Nutrition Assessment, Counseling, and Support (NACS) framework is a systems approach for integrating nutrition in routine health service delivery at the facility and community levels. In the context of HIV, NACS can be an effective way to track health in adolescent girls before they experience pregnancy, in young women most vulnerable to HIV infection, and in mother-baby pairs in antenatal and postnatal care.

Although NACS is associated with HIV and a food-by-prescription model, the framework also addresses identifying malnutrition for all—regardless of age, gender, or HIV status—and creates a platform for linking nutritional health with other services, thereby contributing to overall health system strengthening. In addition, understanding how NACS might contribute to health system strengthening is an important aspect of the global learning agenda.

The primary components of NACS are (1) nutrition assessment and classification, (2) nutrition counseling, and (3) nutrition support within a health care continuum. The approach is comprehensive; no component of NACS should exist without the others. The figure below illustrates how NACS supports all aspects of the healthcare continuum for HIV and maternal-child health (Figure 1).

Figure 1. Model of NACS integration in the HIV care cascade and the maternal, newborn, and child health continuum



Although many countries have accepted the concept of NACS as a means to integrate nutrition with overall healthcare, country uptake of the system, implementation practice, and scaling vary widely. The integration of nutrition in existing health structures continues to be challenging in many contexts, owing to the following:

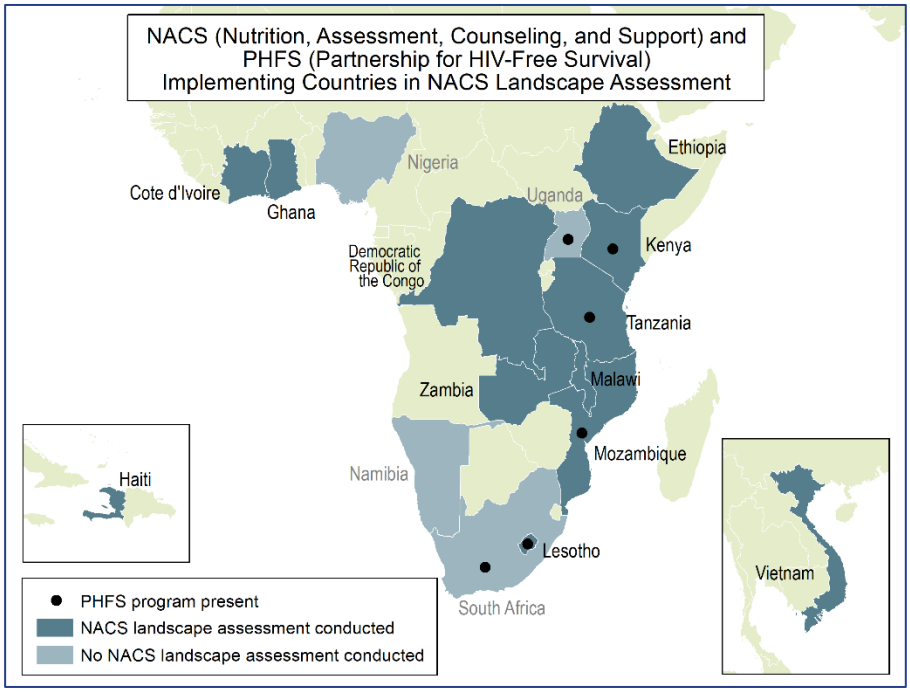
1. Limited capacity of health systems and health information systems to integrate NACS interventions and indicators, because of human resource constraints, poor training, lack of equipment, poor information technologies, and incomplete or ineffective policies
2. Inadequate metrics for tracking and assessing NACS performance

3. Limited ability to link health facilities to community-based economic strengthening and livelihood programs/activities

A set of harmonized nutrition and HIV indicators was developed in 2012 to assist in the monitoring and evaluation of NACS. These indicators fall into three thematic areas: nutrition care and HIV; prevention of mother-to-child transmission of HIV (PMTCT) and infant feeding; and food access and HIV (Appendix, Table 4). In 2013, the Partnership for HIV-Free Survival (PHFS) launched an initiative—integrating NACS—in six countries: Kenya, Lesotho, Mozambique, South Africa, Tanzania, and Uganda. The initiative was designed to assist with existing national efforts to improve antenatal and postnatal HIV care and to increase maternal, infant, and child nutrition through the optimal uptake of World Health Organization guidelines on breastfeeding and HIV using quality-improvement methods.

To better understand how these harmonized indicators are collected, used, and reported within the NACS framework, MEASURE Evaluation—funded by the United States Agency for International Development (USAID) and the United States President's Emergency Plan for AIDS Relief (PEPFAR)—conducted a landscape assessment in 2014 of NACS implementation in 12 of 16 priority NACS countries (Figure 2). This research aligns with USAID's goals to prevent child and maternal deaths and to control the HIV epidemic, and also with the global 90-90-90 targets.[1] Findings from the landscape assessment also have helped shape ongoing discussions and activities related to the overlap between nutrition and HIV, including a multipronged independent evaluation of the PHFS program, scheduled for publication in early 2018.

Figure 2. NACS and PHFS implementing countries targeted in NACS landscape analysis



Source: MEASURE Evaluation

[1] By 2020, 90 percent of those who are HIV-positive will have been diagnosed, 90 percent of those diagnosed will be on antiretroviral therapy (ART), and 90 percent of those on ART will be virally suppressed (http://www.unaids.org/en/resources/documents/2017/90-90-90).

Findings from the survey are shared below and provide critical insights on the progress of NACS implementation; monitoring, evaluation, and reporting; the integration of NACS in existing national health systems; and lessons learned about the strength and challenges of NACS implementation.

Survey Goal and Objectives

The goal of the landscape survey was to identify the harmonized nutrition and HIV indicators collected and used across 16 PEPFAR-supported countries and to expand the evidence base for NACS as a means to strengthen health system performance. The specific objectives were to identify the following:

1. NACS indicators and data currently collected, used, and reported
2. Data sources for NACS indicators
3. Strengths and challenges of NACS data collection and use
4. The extent to which NACS indicators are integrated in national health information systems
5. Strengths of and challenges to NACS reporting systems within the health system
6. Use of NACS indicator data for decision making

This study was designed to contribute to the global learning agenda on the opportunities and challenges of tracking nutrition and HIV interventions in routine health systems and existing national monitoring and evaluation (M&E) systems.

METHODS

The survey used a mixed-methods approach:

a. Three separate survey tools were developed for the national, regional, and facility levels to collect quantitative and qualitative data on 13 nutrition and HIV indicators, identify data sources for these indicators, and investigate the use of data from these indicators for decision making and reporting. National-level surveys were designed to be completed online; regional and facility surveys were designed to be conducted in person. Regional and facility sites were purposely selected to include variations in location (rural or urban) and level of service delivery (dispensary, clinic, health center, or hospital).

b. For the first eight indicators, on nutrition care and HIV and PMTCT and infant feeding, detailed qualitative and quantitative data about source, reporting, and use were gathered. For the food and security indicators (9–13), only a few clarifying questions about the collection of these indicators were asked, because of the paucity of data found from previous desk reviews.

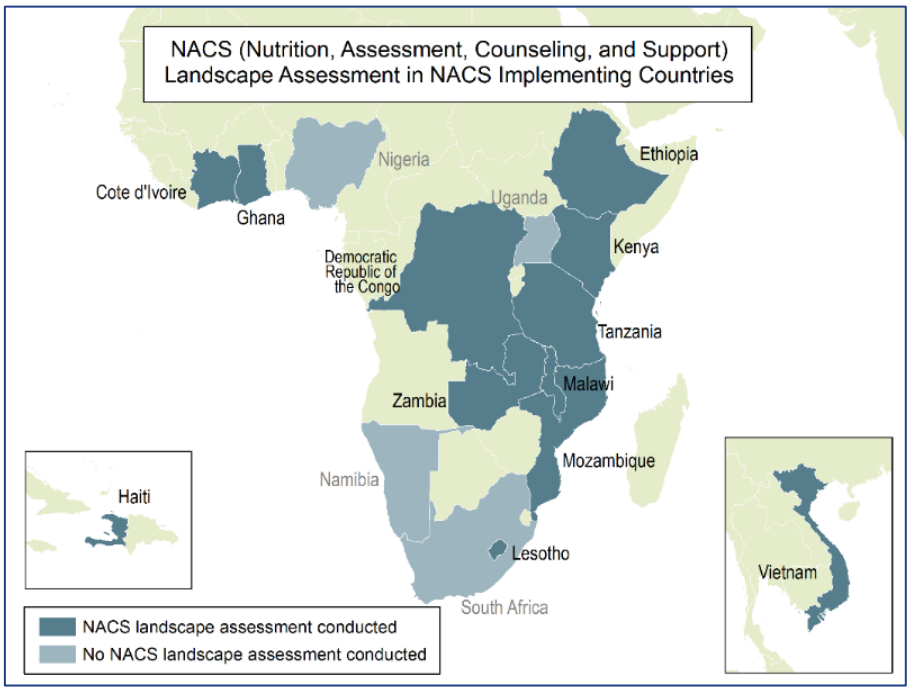
c. Key informant interviews focused on nutrition were used to gain a deeper understanding of the NACS implementation process and the broader nutritional context for each country.

d. Supplemental interview questions and field notes from in-country reviews were used to collect additional qualitative data on NACS implementation.

Survey Sample

Twelve countries participated in the national landscape survey: Côte d'Ivoire, the Democratic Republic of the Congo (DRC), Ethiopia, Ghana, Haiti, Kenya, Lesotho, Malawi, Mozambique, Tanzania, Vietnam, and Zambia (Figure 3). In addition to the national survey, regional and facility surveys were conducted in Haiti, Malawi, and Zambia (Table 1).

Figure 3. NACS landscape analysis in 12 of 16 priority countries



Source: MEASURE Evaluation

Table 1. Number of regional- and facility-level surveys in Haiti, Malawi, and Zambia

Country	National	Regional	Facility
Haiti	1	2	2
Malawi	1	3	3
Zambia	1	2	3

RESULTS

Overarching Themes from the Landscape Survey

1. **NACS implementation varies across all countries.** A core tenet of the NACS framework is that it can be easily tailored or adapted to existing national strategies, protocols, and mandates. As a result, the survey found that countries were at varying levels of NACS adoption/implementation, and country understandings of the framework differed widely between early and later adopters of NACS.
2. **NACS barriers and challenges are similar across countries.** Despite variations in NACS implementation, similar challenges and concerns were observed in all the countries. Challenges and barriers arose from a variety of technical or organizational factors, including: poor human resource capacity; need for supportive training; high staff turnover; inadequate supply chain management; poor communication, data ownership, and information feedback; inadequate funding and political constraints. Although the need for supportive systems was emphasized more in countries with poorly defined NACS frameworks, all the countries expressed a need for supportive training and supervision in NACS.
3. **Data demand drives indicator collection and use.** In all the countries, the collection and upward reporting of NACS indicators was driven by demand for them and their use in reports and/or to meet specific targets set by the Ministry of Health (MOH), other government departments, nonprofit organizations, and/or donor agencies. Some facilities measured other relevant nutrition indicators for local decision making; however, those data were not reported to the national level unless specifically requested.
4. **National ownership is essential for scaling up NACS implementation.** Surveyed countries were at varying stages of NACS ownership, implementation, and scale-up. For all programs, the degree of national ownership, as evidenced by the existence of national nutrition plans, budgets, policies/regulations, and protocols, could be correlated with the amount of nutrition data collected, reported, and integrated in national M&E systems. This finding was consistent across countries, regardless of when NACS was adopted.
5. **Health system capacity to implement and track NACS initiatives lags national commitment to the approach.** Although national governments were largely supportive of the idea of NACS in most countries, their support did not translate into the budgets, policies, and legislation required for NACS implementation.
6. **Trends in NACS uptake and use varied by country.** NACS-implementing countries fell into three broad categories of indicator uptake and use: advanced, intermediate, and basic, according to the number and type of nutrition and HIV care and PMTCT and infant feeding indicators integrated in national M&E systems.
    a. In advanced countries (e.g., Kenya and Tanzania), data on at least seven of the indicators were collected at the facility level and shared at the regional and national levels. The data were entered in national M&E systems.
    b. In intermediate countries (e.g., Côte d'Ivoire, Ghana, and Zambia), data were collected on four to seven indicators and entered in national M&E systems.[2]

[2] Despite robust collection of NACS indicator data in Ethiopia, no indicators were included in the national M&E system.

c. In basic countries (e.g., the Democratic Republic of the Congo, Haiti, Lesotho, Malawi, Mozambique, Vietnam), fewer than four indicators were collected at the national level, and no indicators were integrated in national M&E systems.

Key Findings from the Landscape Survey

Indicators for nutrition assessment and counseling were the most commonly collected across all countries. See Table 2. These indicators (1–4) were collected in three-quarters of the surveyed countries. PMTCT and infant feeding indicators (5–8) were collected in half the countries, and food security indicators (9–13) were collected in fewer than half (40%). Although most of the indicators were collected by the MOH, more than half the countries reported that selected indicators were also consistently collected by projects and programs outside the MOH.

When nutrition assessments were conducted, they typically involved only anthropometric measurements of weight, height, and mid-upper arm circumference (MUAC), with no biochemical, clinical, or dietary assessments. The type and frequency of measurements varied within and between countries and were based on the availability of assessment tools and health worker capacity. In some countries, after the initial assessment of new patients, anthropometric measurements were retaken only when a patient's health was observed to be faltering. In general, this approach was due to heavy caseloads at facilities.

Table 2. NACS indicators collection by country

Indicator		Country											
		Côte d'Ivoire	Democratic Republic of the Congo	Ethiopia	Ghana	Haiti	Kenya	Lesotho	Mozambique	Malawi	Tanzania	Vietnam	Zambia
Nutrition care and HIV indicators	1. Nutrition assessment for people living with HIV (PLHIV)	X		X	X		X			*	X		X
	2. Undernutrition in PLHIV	X		X	X		X			X	X		X
	3. Provision of therapeutic or supplementary food to undernourished PLHIV	X		X	X		X	X+	X	*	X		X
	4. Nutrition counseling for PLHIV	X		X	X		X			*	X		X
PMTCT and infant feeding indicators	5. 12-month infant HIV-free survival						X	X			X		X
	6. Maternal nutritional status in postnatal care			X				X		*	X		
	7. Infant nutritional status at 12 months						X				X		X
	8. Infant feeding status at 3 months—exclusive of mixed or replacement feeding	X		X			X				X		X
Food access and	9. Food security of PLHIV	X			††		X	X					

Indicator		Country											
		Côte d'Ivoire	Democratic Republic of the Congo	Ethiopia	Ghana	Haiti	Kenya	Lesotho	Mozambique	Malawi	Tanzania	Vietnam	Zambia
HIV indicators	10. Per capita household expenditures in HIV-affected households	X			X								
	11. Percentage of total expenditures spent on food in HIV-affected households	X			X			‡					
	12. Referral to food security services	X			†			X			X		
	13. Receipt of food security services	X			†						X		

*Collected in eight sites only by ASSIST Project

+ Collected only for HIV-positive and -negative undernourished children under 15 years of age

† Collected by the Livelihood Empowerment Against Poverty (LEAP) Program under the Ministry of Gender, Children, and Social Protection; †† collected in some districts in four regions only

‡ Collected by World Food Programme and other partners

Nutrition counseling indicators were inconsistently tracked when they were collected. In most countries, high caseloads prevented adequate monitoring or tracking of nutrition counseling for clients. When counseling was done, it was typically conducted in group sessions with limited one-on-one patient interaction. Staffs inadequately trained to conduct counseling sessions and the need for capacity building were primary challenges in most countries, as illustrated in this quote by one respondent: "Few clients are counseled because health workers are having little nutrition knowledge." In some countries, when nutrition counseling was conducted as part of routine services, the sessions were not tracked on patient cards or in registries.

Parallel reporting was done for PMTCT and infant feeding indicators. In most countries, vertical reporting structures (e.g., separate registers) resulted in parallel reporting of PMTCT and infant care indicators to specific government agencies or national programs. As a result, information on PMTCT and other infant and maternal indicators was not readily available to national nutrition offices, limiting the comprehensiveness of NACS reporting.

Indicators on food access and security were rarely collected in health facilities. When information was collected, it was typically in conjunction with or by other government ministries, nonprofit organizations, or bilateral or multilateral programs—such as nonprofit organizations working on social welfare, livelihoods, and economic strengthening programs for vulnerable populations, including LEAP and Livelihood and Food Security Technical Assistance (LIFT). National nutrition programs in most countries expressed an interest in collecting food security indicators, but concerns were raised about the quality of the data, increased workloads for health workers in data collection, stockouts in therapeutic and/or supplementary foods, and limited availability of food security services.

Indicator definitions vary across countries. Similar indicators were collected in each country, but the actual definitions and calculations for nutrition and HIV indicators differed among countries. Many tailored their definitions to fit national targets or data reporting guidelines from multilateral or bilateral agencies. Differences were most marked in indicators for PMTCT and infant nutrition status. In some cases, the NACS indicators used in the survey were behind newly updated global recommendations. Selected examples of indicators are shown below:

- **Indicator 5**: 12 months infant HIV-free survival—cutoff points for HIV-free survival were 12, 18, and 24 months.
- **Indicator 6**: maternal nutritional status in postnatal care MUAC <220 mm)—countries used either body mass index or MUAC measures and used different cutoffs, ranging from <210 mm to <230 mm for MUAC measurements.
- **Indicator 8**: infant feeding status at three months—in contrast to the harmonized indicator, infant feeding assessments in most countries were typically conducted at six, rather than at three, months.

Differences exist between PHFS and non-PHFS countries. Among the countries surveyed, no clear differences were identified in the collection and use of HIV and food security indicators between those participating in the Partnership for HIV-Free Survival[3] (Kenya, Lesotho, Mozambique, and Tanzania) and the non-PHFS countries. However, a marked difference was observed in PMTCT and infant feeding indicators (5–8).

[3] The Partnership for HIV-Free Survival (PHFS) was launched in March 2013 as a six-country initiative in Kenya, Lesotho, Mozambique, South Africa, Tanzania, and Uganda to assist those countries with their current national efforts to improve postnatal HIV, maternal, and infant care and nutrition support through effective implementation of the 2010 World Health Organization Guidelines on HIV and Infant Feeding.

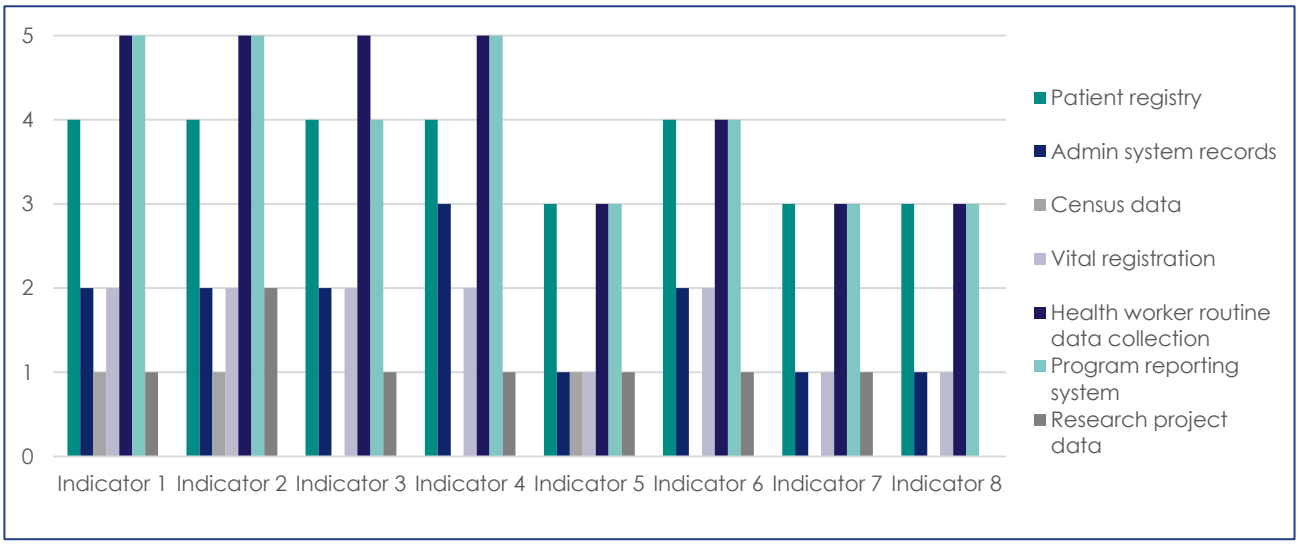
PHFS countries were seven times as likely to collect data on the 12-month infant HIV-free survival indicator and four times as likely to collect data on the infant nutritional status indicator as non-PHFS countries. Additionally, only PHFS countries (Kenya, Lesotho, and Tanzania) or countries involved in the PHFS and/or Promoting Maternal–Infant Survival Everywhere (PROMISE)[4] study in Tanzania and Zambia reported collecting data on 12-month infant HIV-free survival. Notably, both the PHFS initiative and the PROMISE study focused primarily on improving PMTCT and maternal, infant, and child nutrition. The above data, despite limitations due to the sample size, point to the potential benefit of quality-improvement approaches such as PHFS on NACS M&E.

[4] The PROMISE study aims to determine how best to safely reduce risk of HIV transmission from infected pregnant women to their babies during pregnancy and after delivery. Countries involved in the study include Malawi, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe.

Data Sources for NACS Indicators

Multiple data sources were used for indicator collection. The number and type of data sources varied across countries (Figure 4); however, within each country, the actual data sources varied little. Additionally, several data sources were common in all countries, including patient registries, routine data collection by health workers, and program reporting systems. In most countries, the data sources were paper based. No indicators were collected through geospatial data or through surveillance systems.

Figure 4. Data sources by indicator



Note: The number of countries that reported collecting indicator data varied by indicator. Seven countries reported collecting data for Indicators 1, 2, 3, and 4; four countries reported collecting data for Indicator 6 and 8; three countries reported collecting data for Indicators 5 and 7. The maximum number of countries that reported data sources for any indicator was five. None of the countries reported geospatial data or surveillance systems as data sources.

Indicators are not generally integrated in national M&E systems. Virtually all the countries expressed a desire to include more NACS indicators in their national HMIS. Only 42 percent (five) of the 12 countries surveyed included any or all indicators collected in their national M&E systems.

Table 3. NACS indicators collected in HMIS by country

Indicator	Country											
	Côte d'Ivoire	Democratic Republic of the Congo	Ethiopia	Ghana	Haiti	Kenya	Lesotho	Malawi	Mozambique	Tanzania	Vietnam	Zambia
1. Nutrition assessment for PLHIV	X			X		X				X		X
2. Undernutrition in PLHIV	X			X		X				X		X
3. Provision of therapeutic or supplementary food to undernourished PLHIV	X			X		X				X		X
4. Nutrition counseling for PLHIV	X			X		X				X		X
5. 12-month infant HIV-free survival						X				X		X
6. Maternal nutritional status in postnatal care						X				X		
7. Infant nutritional status										X		X
8. Infant feeding status	X					X				X		X

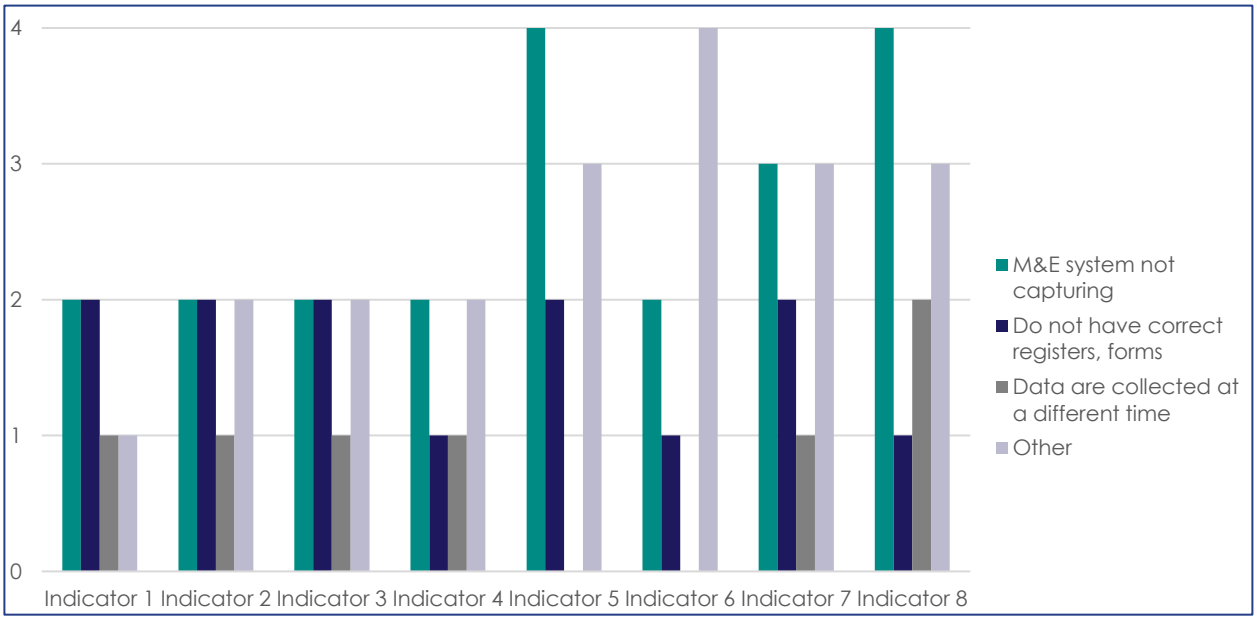
How Data Are Used for Decision Making

Data demand drives data collection and use. In all the countries, collection and reporting of indicators was tied to specific information drivers, including mandated entry in national M&E systems and reports generated by government ministries and/or departments, along with specific donor agencies and nonprofit organizations. To a large extent, the requirements of international donor organizations and agencies drove what data were to be collected and reported. The following major reasons were given for not collecting indicators at the national level:

- The M&E system did not capture the data.
- The data were collected by another program or department.
- There were no forms or registries to collect the data.
- The data were collected at a different point in time.

Common challenges to data use were inaccurate data, low or late reporting rates, and a belief that the national HMIS did not require that data be reported.

Figure 5. Reasons for not collecting data, by indicator

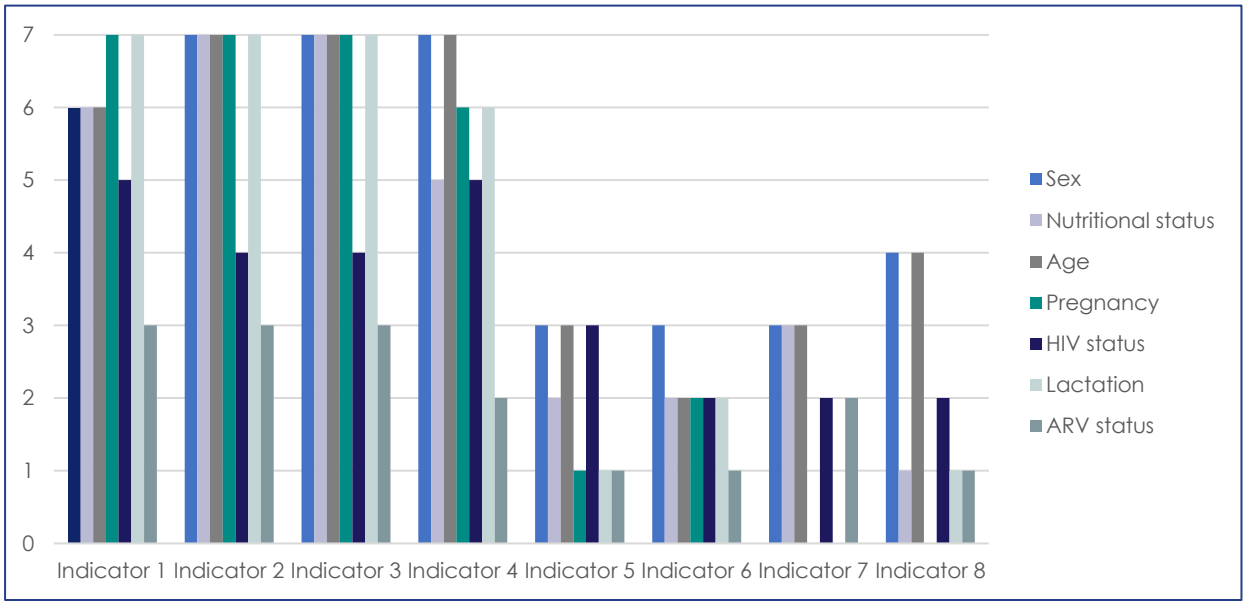


Note: Countries could select more than one reason for not collecting data for an indicator. The maximum number of responses for any single reason for any individual indicator was four.

The importance of data demand to information uptake was also observed at facility levels, where a wide range of nutrition-related information was collected, although only information required at the national, regional, or district level was reported. The primary reason for reduced upward reporting was that information was neither required nor requested. When specific indicators were requested by donor agencies, nongovernmental organizations, or government offices, existing registries were redesigned, patient registry cards improvised, or separate nutrition registries created to collect the requested information.

Data disaggregation and reporting focuses on under-five-year-olds and pregnant and lactating mothers. In all the countries, nutrition data typically focused on maternal and child health. This focus was reinforced by how data were commonly disaggregated: according to sex, age, nutrition status, HIV status, pregnancy, and lactation. Nutrition information for adolescents was typically about orphans and vulnerable children.

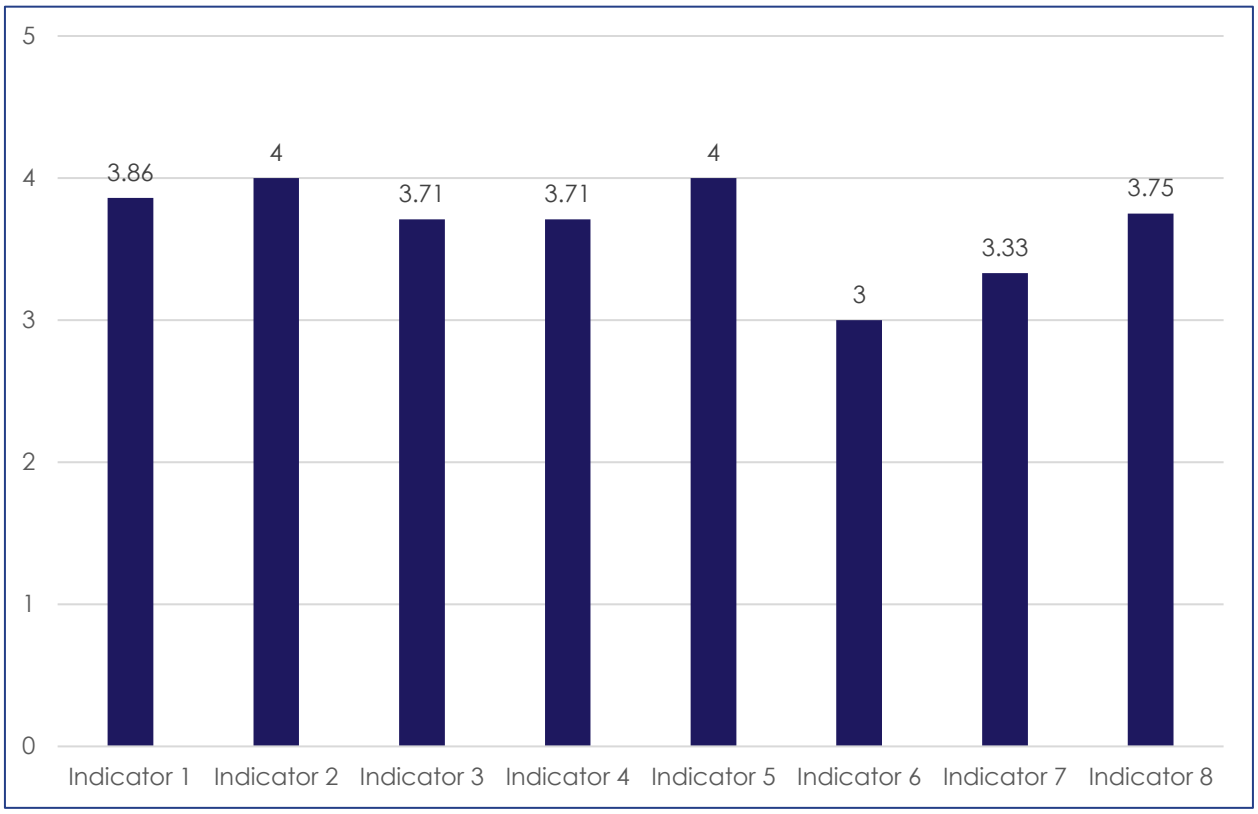
Figure 6. Disaggregation of data by indicator



Note: The number of countries that reported collecting indicator data varied by indicator. Seven countries reported collecting data for Indicators 1, 2, 3, and 4; four countries reported collecting data for Indicator 6 and 8; three countries reported collecting data for Indicators 5 and 7. The maximum number of countries that reported disaggregation for any indicator was seven.

NACS data are frequently used despite information gaps. Across all the countries, NACS data reported to the MOH were used to set targets and incorporated in annual reports, even though the data were not always complete. The frequency with which NACS indicators were used was ranked from 1 to 5, with 1 = never, and 5 = always. Rankings averaged approximately 4 across all the countries (Figure 7). However, the level of completeness for NACS data was ranked lower, at 3 out of 5 (1 = not at all complete; and 5 = very complete). Rankings for data quality, also on a five-point scale, were between 3 and 4 in most countries.

Figure 7. Average frequency of data use on a scale of 1–5 (1 = never, 5 = always)



Note: The number of countries that rated the frequency of use of the NACS indicators varied by indicator. Seven countries provided frequency data for Indicators 1, 2, 3, and 4; four countries provided it for Indicator 8; 3 countries provided it for Indicators 5 and 7; and 2 countries provided it for Indicator 6.

Strengths and Challenges of Reporting and Data Use at Different Levels

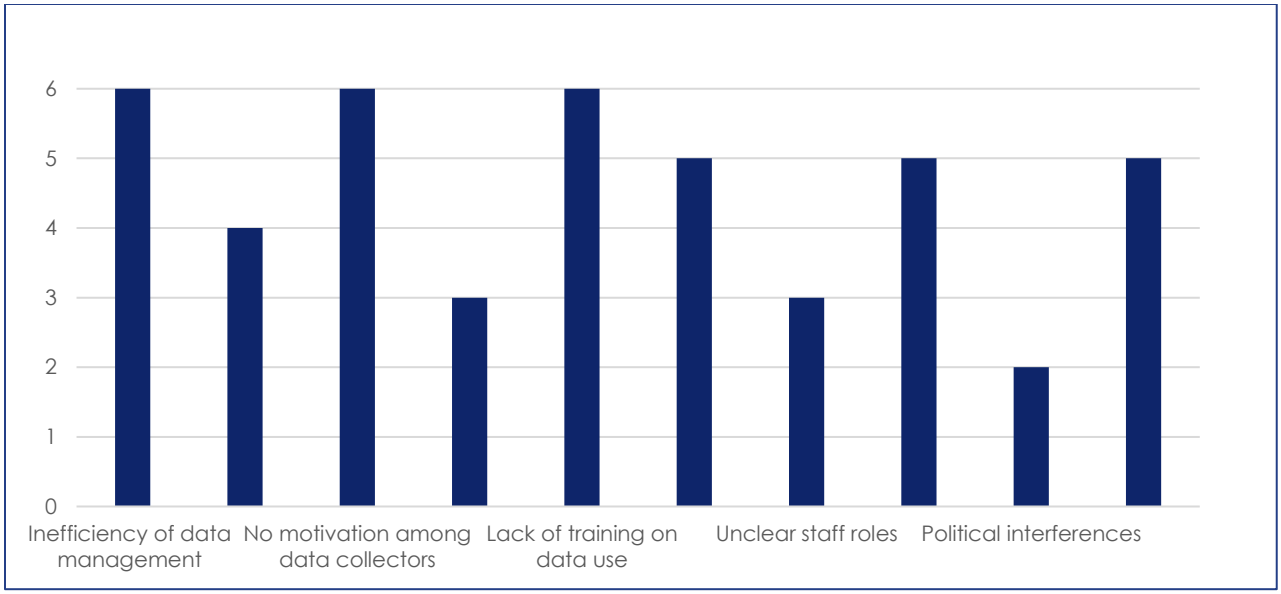
Ownership of NACS is key. Across the surveyed countries, substantial differences in the degree of NACS implementation were observed. Regardless of the date of implementation, the extent to which NACS had been rolled out or scaled up seemed directly linked to the degree of national ownership of NACS as evidenced by the implementation of supportive structures for its integration in health care systems, the existence of national strategic nutrition plans and policies, and the existence of national monitoring and evaluation systems for data collection and health budget allocations. Of the 12 countries surveyed, the five with the most robust NACS implementation systems (Côte d'Ivoire, Ghana, Kenya, Tanzania, and Zambia) also demonstrated more consistent data reporting from the facility level through the regional to the national level.

Strained health worker capacity and inadequate resources and support systems limit NACS reporting. Qualitative data from the national survey reveal that countries experienced many challenges with collecting and reporting NACS indicators. At the facility level, primary challenges centered on the inability of health workers to adequately perform their work, owing to poor support systems or the burden of administrative tasks. These challenges included lack of supportive supervision, inadequate registries, poor motivation among data collectors, lack of stationery, lack of assessment tools, lack of training on data use, structural constraints, and lack of funding.

Barriers to reporting and data use resulted mainly from the process of integrating NACS indicators in the national system, including training staff members and standardizing data management processes (Figure 8).

Suggestions for improving the situation included efforts to increase motivation among volunteers, more harmonization of information across facilities, consistent registries, and the use of electronic medical records. Despite the challenges, health workers tended to be passionate about their work and had a keen interest in providing good health care services to patients.

Figure 8. Barriers to using health data information



LESSONS LEARNED

Variations in NACS indicator definition, collection, and use limits comparability across countries. Differing indicator definitions and the alignment of indicators with nutrition and HIV targets limit the ability to compare data across countries and contexts. As countries continue to tailor NACS to their specific situations, it will be important that indicators show the direct contribution of nutrition to the HIV continuum of care and the critical issues in the continuum such as ART uptake, adherence and retention, and viral suppression.

Improved HMIS does not imply improved NACS integration and use. All the countries were in the process of improving or scaling up their HMIS. Most of them (75%) had at least partially rolled out the DHIS 2 platform nationally; others were in the process of transitioning to it or were using some other HMIS platform. The existence of a national-level HMIS did not ensure improved reporting of NACS indicators, elimination of vertical reporting systems, or adequate integration of NACS indicators in national M&E systems.

National nutritional policies, plans, and targets contribute to nutrition data demand and use. The existence of national nutrition policies, plans, and targets, along with the degree of data utilization at national levels, can have a positive effect on data demand and broader data use. In all the countries, the type of nutrition data collected, reported, and entered in the national M&E system was driven by the national government or by engaged bilateral/multilateral organizations.

Mainstreaming NACS across the health sector improves nutrition data collection. In all the countries, the quality of nutrition information collected for PLHIV was driven largely by ART clinics or PMTCT programs. In addition, the rigorous M&E accountability structures and robust HIV data collection processes within HIV testing and counseling programs and ART and PMTCT programs provide immense opportunities for strategic collaborations and platforms for NACS integration. More work is needed to better incorporate NACS across the health sector, including in HIV programs.

RECOMMENDATIONS

Increase national nutrition budgets. Clearly defined national budgets for nutrition programs are needed. Few of the countries surveyed had defined allocations for nutrition in the health care budget. Lack of adequate funding for nutrition results in abstract paper-based policies and documents with limited use for the targeted populations.

Include other departments and agencies in the assessment of NACS. In all the surveyed countries, selected NACS indicators were collected in departments not necessarily linked to the Ministry of Health. Broadening the scope of future surveys to include departments other than health and nutrition should increase the quantity and quality of nutrition information collected and provide useful insights on the breadth of nutrition's role and impact across the health continuum.

Integrate reporting of NACS indicators in routine health systems. The survey indicated a need for more and better integrating of NACS activities and metrics with those for maternal, newborn, and child health; ART; PMTCT; and HIV testing and counseling at facility, regional, and national levels.

Incorporate NACS indicators in the national HMIS. As countries expand their health management information systems with platforms such as DHIS 2, opportunities arise to incorporate key nutrition indicators in the system. Including those indicators in the HMIS would enhance the ability of national governments to effectively track and monitor nutrition's contributions to key health and development goals. A parallel value would come from the inclusion of key nutrition data points in expanding electronic medical records systems at the facility level.

Get the "S" in NACS. Research on food security and economic support should increase. Most of the countries mentioned challenges with the potential implementation of food security indicators and weak links to community-related "support." USAID initiatives such as LIFT have done work in this area, but further research is warranted to determine appropriate and effective food security programs in an evolving HIV response.

Expand the use of quality-improvement initiatives linked to nutrition. The Partnership for HIV-Free Survival demonstrated the contribution that quality improvement can make at the intersection of nutrition and HIV in PMTCT programs. Ensuring quality-improvement initiatives in the HIV response and in health care more broadly would help address nutrition-related issues and would communicate the value of nutrition to a wider audience.

Allot adequate staff time and training for nutrition. In all the countries, strained human resources and inadequate knowledge of/training in nutrition issues were mentioned as key limitations on data quality and use. With test-and-treat becoming the norm in the HIV response, it will be increasingly important that health workers have the time and training to maximize nutrition's contributions to long-term adherence/retention and viral suppression.

CONCLUSION

Note: The findings from the Landscape Survey were originally intended to be published in concert with the findings from the external evaluation of the Partnership for HIV-Free Survival. Delays in the start of the PHFS evaluation, due in large part to modifications to its design, had a secondary effect on the release of the survey findings.

In 2014, the Landscape Survey captured a useful snapshot of the benefits, opportunities, and challenges presented by monitoring nutrition assessments, counseling, and support. It highlighted the importance and the utility of having accurate and applicable data on nutrition while also calling attention to the difficulties in consistently collecting this data, ranging from the absence of NACS indicators in national M&E plans and HMIS systems to limited capacity of health workers to inadequate financial resources.

In 2017–2018, members of the PHFS evaluation team visited four countries—Kenya, Lesotho, Mozambique and Tanzania—which also participated in the 2014 Landscape Survey. Though there were some incremental improvements in the situation, particularly in regions and districts that had participated in PHFS, the shortfalls in data collection and, consequently, data use remained a significant missed opportunity.

With the rising double burden of undernutrition and obesity in many countries in Africa, there is a greater need and a greater value in countries developing programs to implement effective nutrition programs and the systems to monitor them.

APPENDIX. NACS INDICATORS

Table 4. NACS indicators with designations of each indicator level

Nutrition Care and HIV

Indicator Level	Name and Definition
Impact	**Undernutrition in PLHIV**: The number and proportion of PLHIV in care and treatment who were identified as undernourished at any point during the reporting period
Output	1. **Provision of therapeutic or supplementary food to undernourished PLHIV:** The number and proportion of undernourished PLHIV who received therapeutic or supplementary food at any point during the reporting period
	2. **Nutrition assessment for PLHIV:** The number and proportion of PLHIV in care and treatment who were nutritionally assessed during the reporting period
	3. **Nutrition counseling for PLHIV:** The number and proportion of PLHIV in care and treatment who were nutritionally assessed with anthropometric measurements and who also received nutrition counseling at any point during the reporting period

PMTCT and Infant Feeding

Indicator Level	Name and Definition
Impact	**12-month infant HIV-free survival:** The percentage of infants born to HIV-positive women in PMTCT programs who are alive at 12 months of age and HIV negative
Outcome	1. **Maternal nutritional status in postnatal care:** The number and percentage of HIV-positive women who have a mid-upper arm circumference < 220 mm at the first postnatal visit
	2. **Infant nutritional status:** The number and percentage of HIV-exposed infants with acute malnutrition at the 12-month follow-up visit
	3. **Infant feeding status:** The percentage of HIV-exposed infants who are exclusively breastfed at 3 months of age; the percentage of HIV-exposed infants who are replacement feeding at 3 months of age; and the percentage of HIV-exposed infants who are mixed feeding at 3 months of age

Food Access and HIV

Indicator Level	Name and Definition
Impact	**Food security of PLHIV:** The number and proportion of PLHIV receiving care and treatment services whose households have poor access to food according to the Household Hunger Scale
Outcome	1. **Per capita household expenditures in HIV-affected households:** The percentage change in average per capita household expenditures among HIV-affected households
	2. **Percentage of total expenditures spent on food in HIV-affected households:** The average percentage of total household expenditures on food in HIV-affected households
Output	1. **Referral to food security services:** The number and percentage of HIV care and treatment clients vulnerable to food insecurity who are referred from clinical facilities to food security services.
	2. **Receipt of food security services:** The number and percentage of HIV-affected households that receive food security services.

Table 5. Format of HIV and nutrition indicators used in the survey questionnaire at national, regional, and facility levels

Indicator
1. **Nutrition assessment for PLHIV:** The number and proportion of PLHIV in care and treatment who were nutritionally assessed during the reporting period
2. **Undernutrition in PLHIV:** The number and proportion of PLHIV in care and treatment who were identified as undernourished at any point during the reporting period
3. **Provision of therapeutic or supplementary food to undernourished PLHIV**: The number and proportion of undernourished PLHIV who received therapeutic or supplementary food at any point during the reporting period
4. **Nutrition counseling for PLHIV:** The number and proportion of PLHIV in care and treatment who were nutritionally assessed with anthropometric measurement and who also received nutrition counseling at any point during the reporting period
5. **12-month infant HIV-free survival:** The percentage of infants born to HIV-positive women in PMTCT programs who are alive at 12 months of age and HIV negative
6. **Maternal nutritional status in postnatal care:** The number and percentage of HIV-positive women who have a mid-upper arm circumference <220 mm at the first postnatal visit
7. **Infant nutritional status:** The number and percentage of HIV-exposed infants with acute malnutrition at the 12-month follow-up visit
8. **Infant feeding status:** The percentage of HIV-exposed infants who are exclusively breastfed at 3 months of age; the percentage of HIV-exposed infants who are replacement feeding at 3 months of age; the percentage of HIV-exposed infants who are mixed feeding at 3 months of age
9. **Food security of PLHIV:** The number and proportion of PLHIV receiving care and treatment services whose households have poor access to food according to the Household Hunger Scale
10. **Per capita household expenditures in HIV-affected households:** The percentage change in average per capita household expenditures among HIV-affected households
11. **Percentage of total expenditures spent on food in HIV-affected households:** The average percentage of total household expenditures that are spent on food in HIV-affected households
12. **Referral to food security services:** The number and percentage of HIV care and treatment clients vulnerable to food insecurity who are referred from clinical facilities to food security services
13. **Receipt of food security services:** The number and percentage of HIV-affected households that receive food security services

Nutrition and HIV thematic areas for NACS indicators: Nutrition Care and HIV Indicators (1–4); PMTCT and Infant Feeding Indicators (5–6); and Food Access and HIV Indicators (9–13).

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