Monitoring, reporting, and assessment. FANTA worked with FMOH to develop and integrate NACS indicators into the National Health Management Information System (HMIS) for Nutrition, then developed monitoring tools. In collaboration with SIDHAS, FANTA also coached staff in how to use those tools to record height, weight, BMI, nutritional status and nutrition counseling, and technical support provided to monitor provision of services and record keeping. Monitoring data were collected over the 10 months of implementation in the four sites (see Figure 3). An end-line assessment was conducted to complement these quantitative data with qualitative perspectives. Ten semi-structured interviews were conducted, five each with stakeholders[2] and implementing health facility staff, as well as 10 client exit polls and one focus group discussion with SIDHAS team members in Rivers State.

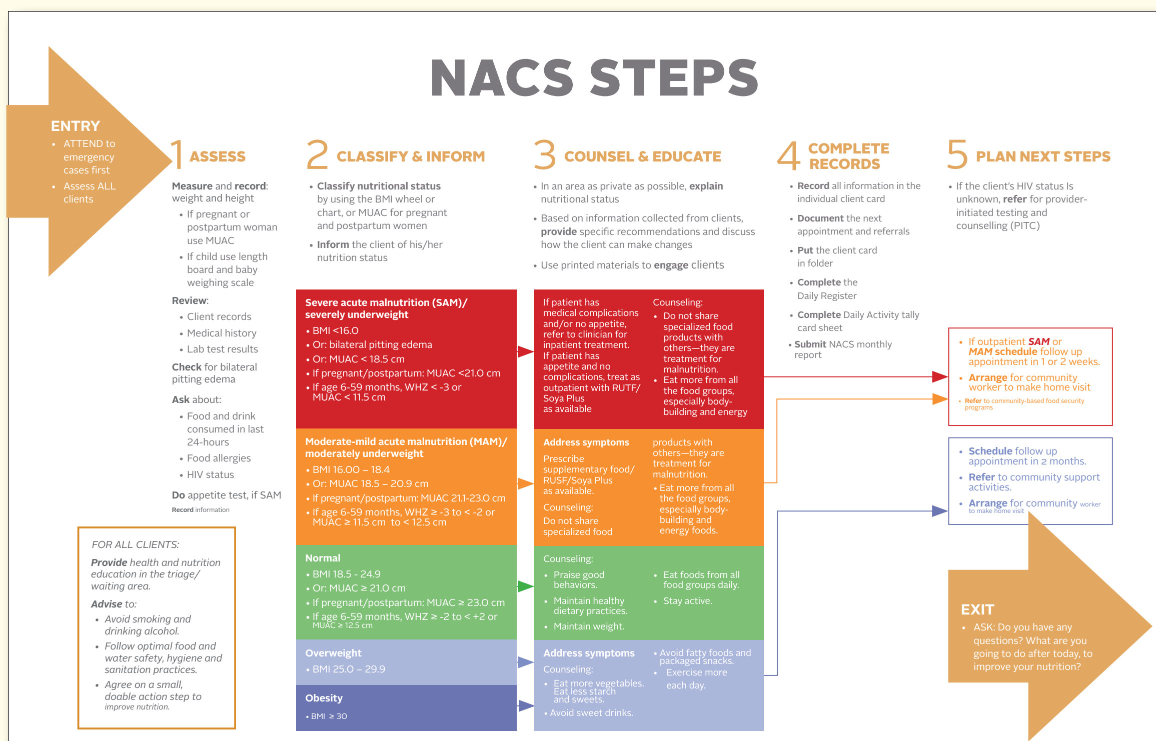
The objectives of the routine monitoring and final assessment were to:

- Document changes in target facilities' capacity to deliver quality NACS services.
- Document changes in the scope and quality of services that were provided and identify factors that affect capacity and service quality.
- Inform the required deliverable to USAID/Nigeria and USAID/OHA: a report on lessons learned and recommendations for further NACS improvement and integration.
- Establish the best performing of the four sites as a NACS learning site to facilitate future replication.

Quality improvement. Quality Improvement (QI) teams were established in each of the facilities to define improvement objectives and work on solutions to challenges encountered in implementation. QI teams met regularly to review QI data, discuss progress, and implement changes as needed. QI team work was tracked and supported by the FANTA technical team and Rivers State Primary Health Care Management Board as part of their monthly support visits, during which they reviewed records to reinforce the need for quality data and provide mentoring and coaching on any aspect of implementation as needed.

[2] 5 key stakeholders represented the FMOH, the Rivers State Ministry of Health (SMOH), the Primary Health Care Management Board, and the SIDHAS project.

Figure 1: NACS process

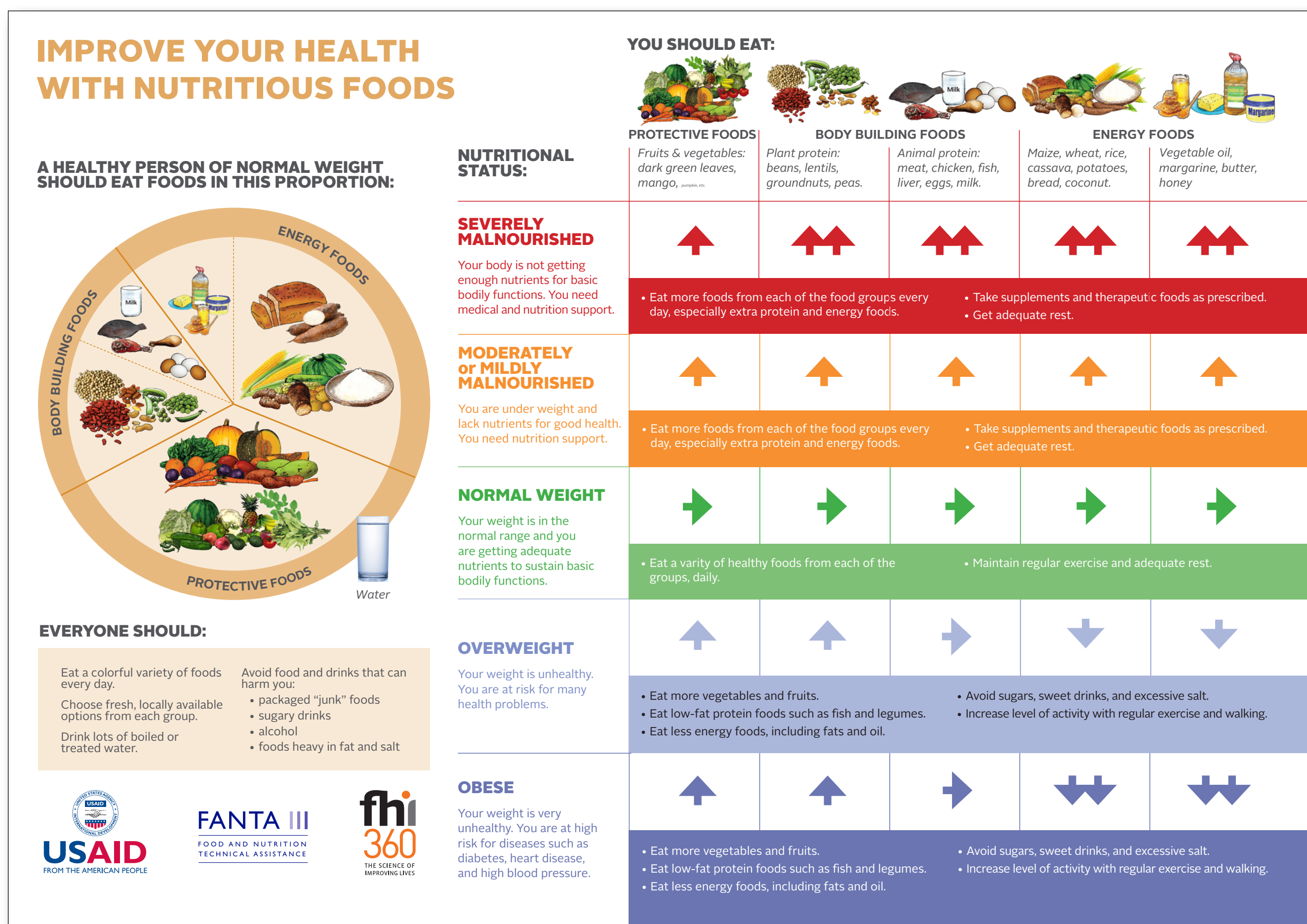


Provision of assessment equipment. FANTA provided the four sites with stadiometers, BMI wheels, length boards, and MUAC tapes for taking anthropometric measurements. This enabled making evidence-based diagnoses of nutritional status and providing individualized advice, rather than basing assessments "only on appearance," which, according to many health workers interviewed for the end-line assessment, often was done in the past.

Materials for counseling and education. Printed job aids were created for NACS. These included a poster to guide health workers on the key steps in the NACS process (see Figure 1), from taking anthropometric measurements to diagnosing and addressing nutrition problems; a poster for counseling on how to improve diet based on nutrition status (see Figure 2); and a poster to raise awareness and stimulate action on overweight and obesity.

Health workers shared clients' enthusiasm for the counseling materials, with one health worker noting how easy the dietary guidance was to understand: "Even without being able to read, all could understand the red and green up and down arrows."

Figure 2: NACS counseling and education aid



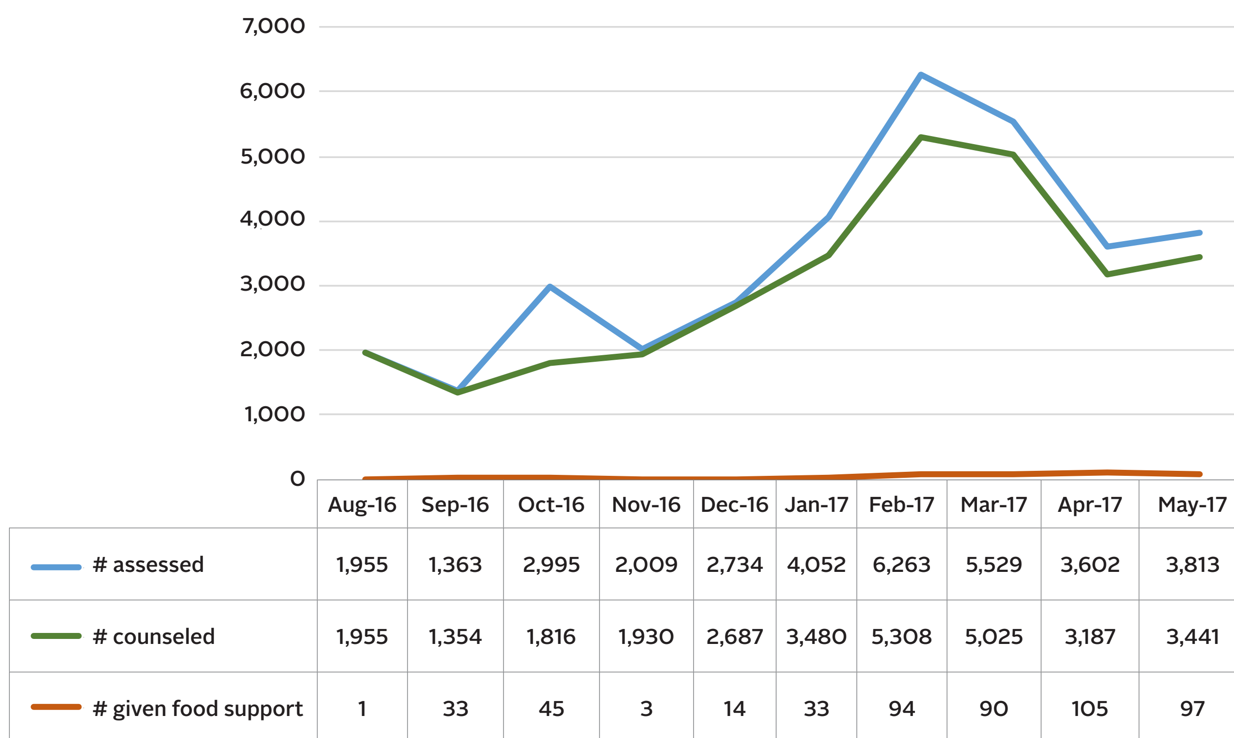
The Results

Improved coverage and integration of NACS services. Progress on NACS integration was positive overall, despite some uneven results. The four target health facilities' records show that the total number of clients nutritionally assessed increased by more than 80 percent; the number of clients that received nutrition counseling also saw a large increase. All interview participants rated NACS as either "partly" (7) or "almost completely" (5) integrated into the service system. Figure 3 presents the number of NACS services delivered over the 10 months at the four facilities.

The drop in number clients assessed between October and November 2016 was mainly due to an insufficient number of data collection forms for recording data, which led to a smaller number of clients whose nutritional data were recorded. The drop in number assessed and number counseled between March and April 2017 was the result of transfers of trained staff to other facilities. In addition to resupplying data collection forms, FANTA worked with data entry clerks to improve the quality of data collection and supported the QI teams to improve systems for replenishing the supply of forms as well as overseeing data quality.

System strengthening. The introduction of NACS strengthened the health system beyond the four targeted facilities in several ways. The training curriculum was formally customized to the Nigerian context by FMOH, and is being used in new sites to expand nutrition services. Pre- and post-assessment results showed 15.5 percent improvement in learning outcomes from training (from 69.1% to 84.5% respectively). In addition, 25 representatives from community-based organizations were trained to promote nutrition in their communities as nutrition champions.

Figure 3: NACS services provided: Total for 4 sites in Rivers State, August 2016–May 2017



	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17
# assessed	1,955	1,363	2,995	2,009	2,734	4,052	6,263	5,529	3,602	3,813
# counseled	1,955	1,354	1,816	1,930	2,687	3,480	5,308	5,025	3,187	3,441
# given food support	1	33	45	3	14	33	94	90	105	97

Sixty-eight master trainers were trained in NACS, and they trained 558 health care providers to implement NACS in other health facilities. One of the master trainers from the BMSH convinced the head of Rivers State hospitals management board to organize a NACS training for 40 health care workers (doctors and nurses), comprising 22 males and 18 females from all 22 general hospitals in the Rivers State. The training was a success. The average pre-test score was 36.7 and average the post-test score was 71.8. As a result, the board management has undertaken efforts to ensure that NACS is incorporated into clinical services at the general hospitals.

Integration of NACS into relevant national policies and guidelines. NACS guidelines have been integrated into Nigeria's national guidelines on nutrition for PLHIV and NACS indicators have been integrated into the National HMIS for Nutrition. NACS training materials have been adopted by the Federal Ministry of Health as national technical resources for cascading NACS training at national level.

Impact. Both the quantitative and qualitative data attest to improved knowledge and technical capacity of trained health facility staff to deliver NACS training and direct services, as exemplified by this health worker who was interviewed:

"I have gained increased knowledge and skills, and the satisfaction of providing valuable services to satisfied clients."

According to health staff interviewed, NACS dramatically increased the level of knowledge and awareness about nutrition among their clients. They also observed their clients making dietary changes resulting in improved nutritional status.

"You know what your nutritional status is, you know the possible consequences, after being assessed. You are now empowered."

Perhaps the greatest impact was heightened provider and client awareness of overweight and obesity as a health and nutrition problem, which was mentioned by most health workers interviewed:

"My clients are now conscious of their nutrition; there is reduction in their weight gain. You know the hazards of overweight, they are conscious; they eat right now."

The Lessons Learned and Recommendations

Two keys to successfully integrate NACS into health service systems are:

1. Cultivating buy-in from government and local partners is essential for building local ownership and enhancing the prospects for sustainability. Strong buy-in by River State was accomplished by:
    - Investing considerable time up front to build relationships with key stakeholders at federal and state levels
    - Advocating for NACS with sensitivity to Nigeria's unique nutrition situation, and making a compelling case for how NACS fills key gaps the government wants to fill
    - Including government partners as leaders of the planning process and working together to adapt training materials, plan trainings, design a QI process, and develop communication materials.
2. Implementing NACS in collaboration with the existing clinical partner on the ground (SIDHAS project), and leveraging resources, enhanced efficiencies and facilitated the expansion of NACS tools and approaches beyond the FANTA demonstration sites to over 200 health facilities across ten states.

Recommendations to consider for future NACS implementation in Nigeria include:

- Define clearly NACS ownership and roles and responsibilities with relevant stakeholders.
- Expand sensitization and engagement of stakeholders to build awareness of the value of NACS and shared commitment.
- Provide regular capacity-building opportunities through training and supportive supervision for as many health care workers as possible at as many and various service delivery points as possible.
- Budget for the provision of NACS equipment and tools, including anthropometric equipment, job aids, nutrition education and counseling materials, monitoring and reporting materials, etc.
- Expand provision of therapeutic food (this is currently provided through SIDHAS support but it would benefit many beyond PLHIV).

www.fantaproject.org

@FANTAproject

Contact Information:
Food and Nutrition Technical Assistance III Project (FANTA)
FHI 360
1825 Connecticut Avenue, NW
Washington, DC 20009-5721
Tel: 202-884-8000
Fax: 202-884-8432
Email: fantamail@fhi360.org

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