TECHNICAL ASSISTANCE TO EXPAND HIV PREVENTION, CARE, AND TREATMENT IN NAMPULA, MOZAMBIQUE 2011-2016

PEPFAR

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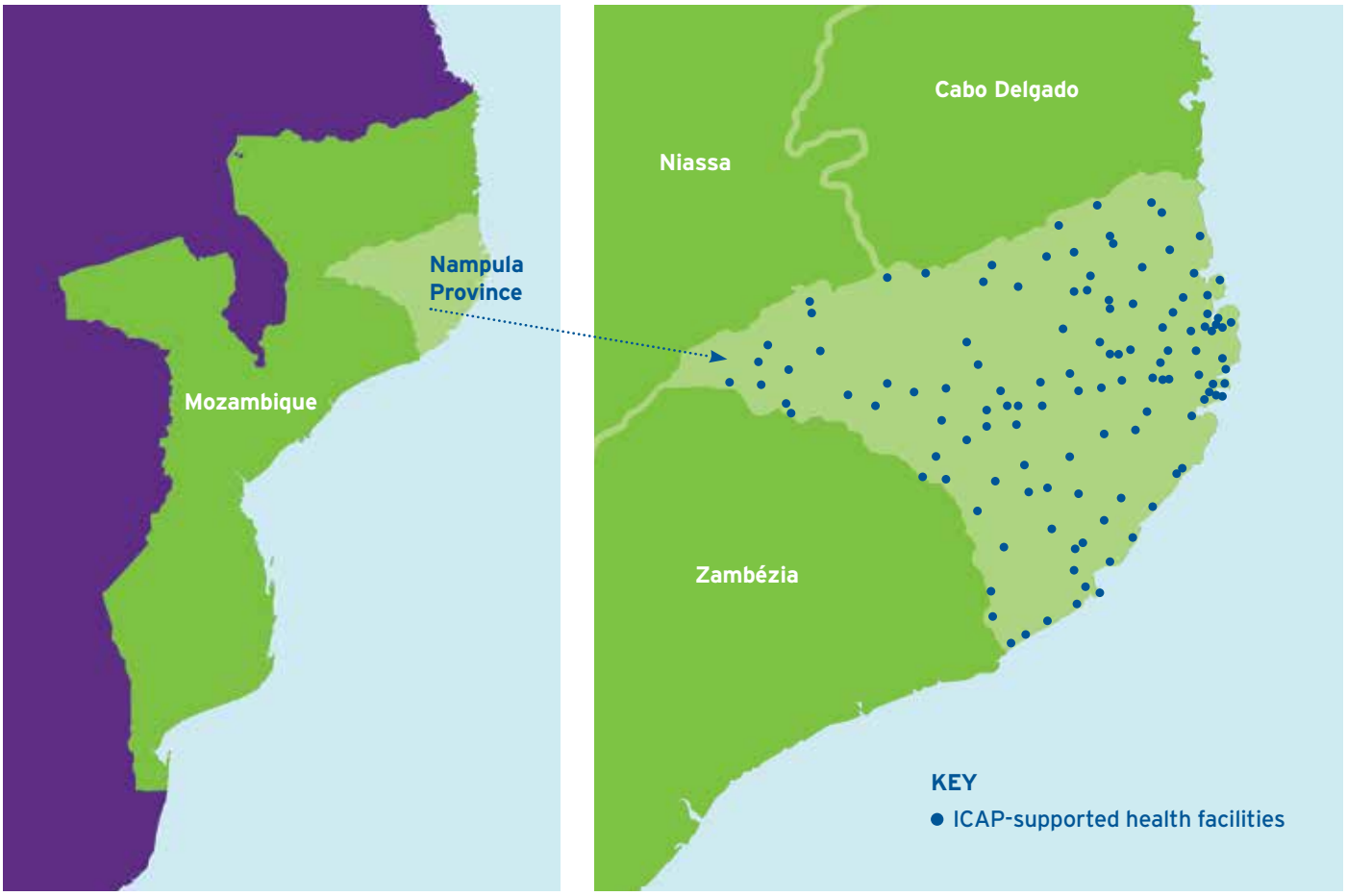
Project Background and Overview

Nampula is Mozambique's most populous province, with a total population of five million people and an adult HIV prevalence rate of 4.6 percent. In 2013, Mozambique launched the National HIV/AIDS Acceleration Plan, which aimed to increase coverage of antiretroviral therapy (ART) to 80 percent of eligible patients, reduce mother-to-child transmission of HIV to less than five percent, and halve the number of new HIV infections.

Between October 2011 and September 2016, ICAP at Columbia University supported the decentralization of HIV services in Mozambique's Nampula Province, with PEPFAR funding through the Centers for Disease Control and Prevention. Decentralization to peripheral health facilities enabled people living with HIV outside of Nampula's main cities and district capitals to obtain HIV treatment much closer to their homes. ICAP's support emphasized building the capacity of the Provincial Directorate of Health (DPS) and 21 District Services for Health, Women, and Social Action (SDSMAS) to plan, implement, and monitor HIV programs, while also contributing to strengthened health systems able to sustain the HIV response.

Through this project, ICAP and its local partners provided technical support to 147 health facilities across all 21 districts of Nampula Province (see Figure 1). This support facilitated the delivery of high-quality HIV and related services, with a focus on HIV testing and counseling; prevention of mother-to-child transmission of HIV (PMTCT); HIV care and treatment for adults and children; retention and adherence support; integrated TB/HIV care; care for survivors of gender-based violence; and cervical and breast cancer screening.

Figure 1. Map of ICAP-Supported Health Facilities in Nampula Province



Core Project Approaches

National Ownership. ICAP supported the DPS, SDSMAS, and health facilities to achieve National Acceleration Plan goals and to implement national HIV standards, tools, and initiatives. Through participation in national technical working groups, ICAP provided technical assistance to the central Ministry of Health to enhance treatment guidelines, acceleration planning, implementation strategies, training manuals, training of trainers, and monitoring tools.

Multidisciplinary Technical Assistance. Five ICAP field teams—each composed of a physician, nurses, a psychosocial support officer, and a monitoring and evaluation (M&E) officer—provided regular technical assistance to enable SDSMAS and health facility teams to implement clinical guidelines, M&E tools, and continuous quality improvement processes. An ICAP team of technical and management advisors based in Nampula City worked with the DPS and supervised the five field teams, with additional support provided by central and global ICAP advisors as needed.

Building Capacity for Site Support. The ICAP field teams focused on building SDSMAS capacity in mentorship and supportive supervision of HIV services through joint planning, site visits, and data review. During joint visits to health facilities, the ICAP field teams built SDSMAS capacity to observe clinical activities; provide clinical mentorship; review clinical files and other health facility data; identify gaps and challenges; design quality improvement actions; and follow up on issues identified. They also worked with the SDSMAS to implement general and service-specific site support standard operating procedures and site support tools, including for PMTCT Option B+ and the monitoring of suspected treatment failure. This structure delivered the range of technical assistance needed to support comprehensive HIV services and optimize resources across Nampula's 21 districts.

Health Systems Strengthening. ICAP conceptualized all of its technical assistance with the goal of strengthening the provincial health system and creating conditions for sustained high coverage of quality-assured services. Targeted interventions included upgrading health facility infrastructure, laboratory networks, pharmacy management, referral and linkage mechanisms, training capacity, and M&E systems.

Innovation. In collaboration with DPS, SDSMAS, and health facility staff, ICAP promoted, piloted, and rolled out many new approaches to improve access, quality, and retention. Examples include escorted referrals from testing and counseling points to support enrollment in HIV care; SMS appointment reminders and systems for routine follow-up with patients who miss appointments; community ART groups for stable patients; barcodes on antiretroviral medicines (ARVs) to reduce wait times at health facility pharmacies (see Box 1); and point-of-care CD4 testing.

Evidence-Based Programming. ICAP worked with DPS, SDSMAS, and health facility teams to establish a culture of data-driven planning and measurable impact. The rollout of a patient-level database and ministry of health databases for aggregate data and stock management have increased access to data, and ICAP has supported the DPS with monthly review meetings where the district health directors present data on access and quality.

Continuous Quality Improvement. Continuous quality improvement is fundamental to ICAP's model of support for HIV service delivery. ICAP has supported health facility teams to achieve quality through regular assessments that identify gaps and challenges, and has built the capacity of SDSMAS staff to use quality assessment tools, analyze data, identify challenges, and plan quality improvement actions. Beginning in 2016, these approaches have also been used to pilot and roll out the national HIV quality improvement program.

BOX 1. Implementing Intelligent Dispensing of Antiretroviral Treatment (i-DART)

iDART is a non-proprietary, open-source software application that enables health facility pharmacists equipped with scanners to read bar-coded labels on ARV medicines. ICAP piloted this system and then supported its customization, implementation, and expansion as a way to improve patient adherence to treatment. The iDART system is now being used at pharmacies at five ICAP-supported health facilities in Nampula, contributing to:

- Reduced wait time for ARV refills
- Easy identification of patients who miss ARV pickups (through linkage of i-DART with the patient database)
- Enhanced tracking of ARV stocks, including an automatic early warning system if there is a potential shortage
- Improved data quality and automated reporting to the Ministry of Health

Key Achievements

ICAP support contributed to the following achievements in Mozambique's Nampula Province between October 2011 and September 2016:

- **586,874** people were tested for HIV through provider-initiated counseling and testing.
- **161,262** people were tested for HIV at voluntary counseling and testing units.
- **53,707** HIV-positive pregnant women received PMTCT services.
- **29,536** HIV-exposed infants received a DNA-PCR test for early infant diagnosis.
- **74,544** adults (including **19,359** pregnant women) and **6,512** children were initiated on ART.
- **4,139** stable ART patients enrolled in **1,148** community ART groups.
- **3,758** survivors of gender-based violence received care.

"As a result of ICAP's support for training, clinical mentorship, capacity building, registers, equipment, supplies, and logistics, 75 percent of health facilities in the province are now providing ART."

Mr. Carimo Assane,
Head of Provincial HIV Program

Enhancing Health Facility Infrastructure

In order to ensure conditions conducive to the provision of high-quality services (including efficient patient flow, privacy, and infection prevention), ICAP supported minor renovations and repairs at 41 health facilities throughout Nampula Province (see Table 1) and procured prefabricated TB units for five health centers.

Table 1. Summary of ICAP-supported Renovations

Type of Unit	Number Renovated
HIV Care	3
PMTCT / Maternal and Child Health	5
TB	10
Adolescent-Friendly Services	9
Pharmacy	2
Laboratory	6

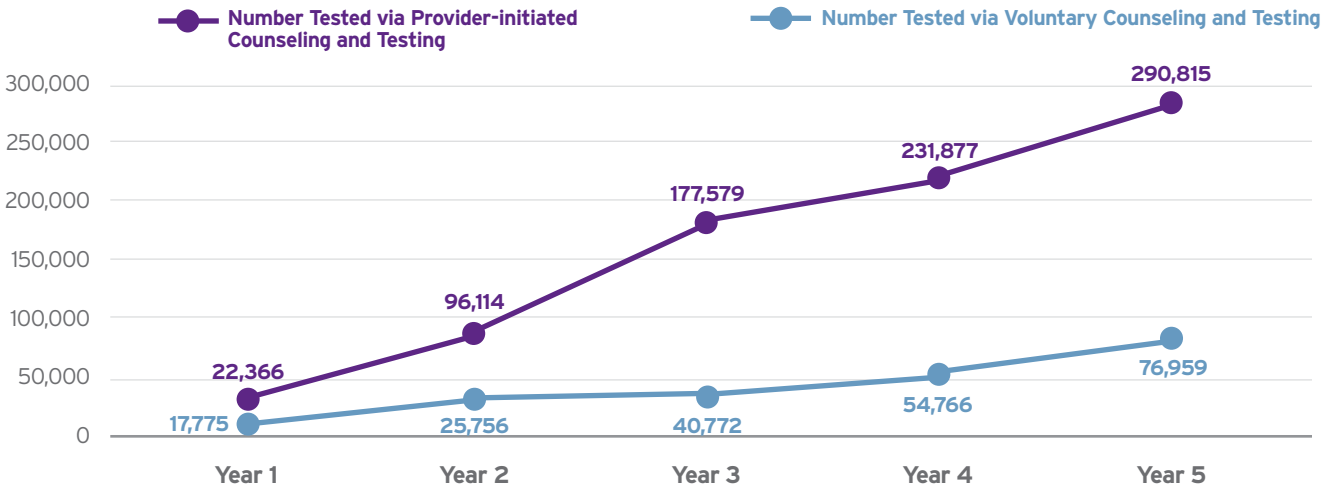
Increasing HIV Counseling and Testing Rates

To maximize the number of people living with HIV who know their status, ICAP provided technical support to scale up HIV counseling and testing. Provider-initiated HIV testing and counseling was expanded to all supported health facilities and is now routinely offered at outpatient triage and screening appointments, in inpatient wards, and at specific consultations (e.g., maternal and child health [MCH] and TB consults). ICAP also trained health workers on standard operating procedures for linkage to ensure that individuals who test positive are enrolled in care. A simple family tree tool was instituted at health facilities and in the community to identify family members of index HIV patients, in order to encourage them to get tested. Health facilities also now hold family days as a strategy to reach these family members and increase HIV testing and counseling in communities.

Voluntary HIV counseling and testing is offered at 69 counseling and testing sites (and at Nampula prison), where ICAP provided technical assistance to implement a one-stop model that includes counseling and testing and same-day enrollment in HIV care for patients who test positive.

As shown in Figure 2, there was a substantial increase in the number of people receiving HIV counseling and testing at ICAP-supported sites over the five-year project period.

Figure 2. Increase in HIV Counseling and Testing Rates at ICAP-supported Sites in Nampula Province, October 2011 - September 2016



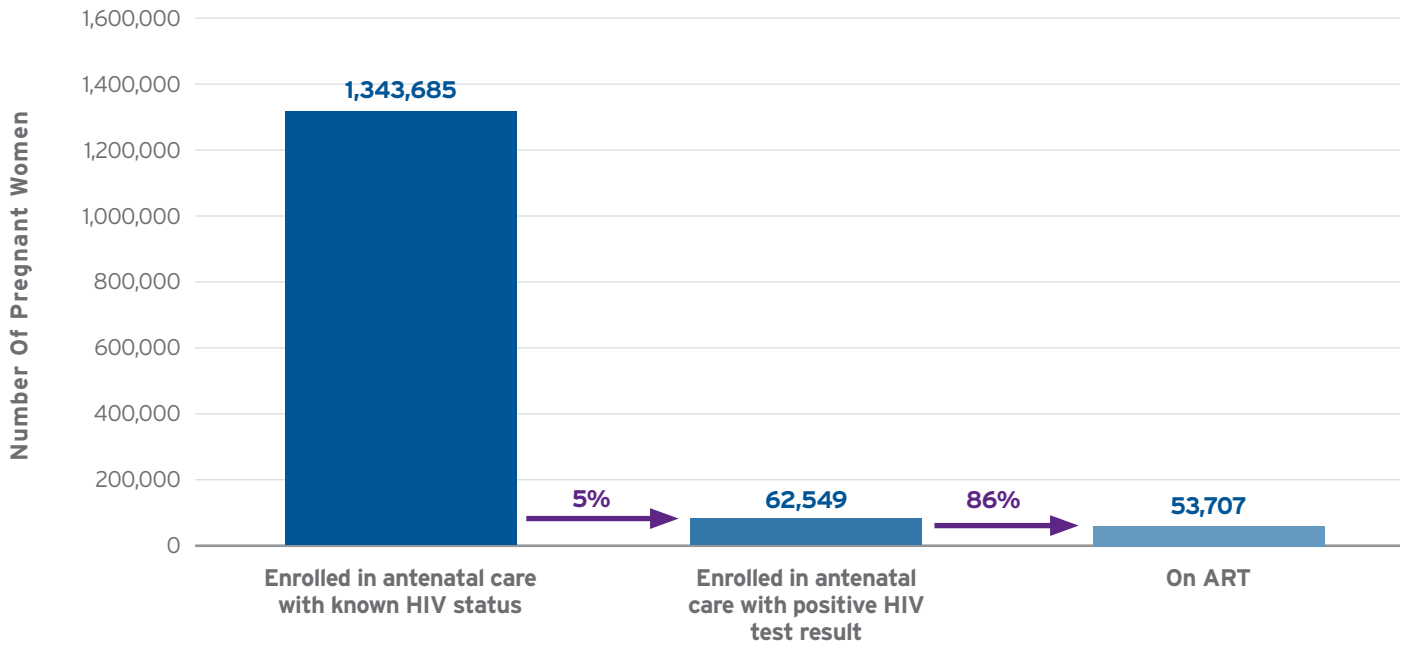
Expanding Services to Prevent Mother-to-Child Transmission of HIV

ICAP supported the expansion of PMTCT services, integrated with MCH care, from 110 health facilities in Nampula Province in 2011 to 161 facilities in 2016. Beginning in 2013, ICAP also supported the expansion of the Option B+ approach (which calls for all HIV-positive pregnant and breastfeeding women to initiate lifelong ART) to 150 health facilities in the province. Option B+ was implemented using a one-stop model that allows women to receive MCH and HIV care and treatment during a single visit.

ICAP also supported the scale-up of early infant diagnosis by mentoring MCH nurses on at-risk child consultations; increasing the number of laboratories that conduct DNA-PCR tests for early infant diagnosis; providing SMS printers to health facilities to facilitate the return of DNA-PCR test results; and putting systems in place to track these test results, contact mothers to return to the clinic to receive results, and monitor enrollment and retention of infants in HIV care.

Figure 3 shows the PMTCT care cascade: Of the more than 1.3 million pregnant women whose HIV status was determined, over 62,000 were found to be HIV-positive, and 86 percent of these women received ART.

Figure 3. PMTCT Care Cascade at ICAP-Supported Health Facilities in Nampula Province, October 2011 - September 2016



Expanding and Enhancing HIV Care and Treatment Services

ICAP supported the DPS and SDSMAS to scale up ART and comprehensive care and support services, expand access to community ART groups (CAG), and implement new treatment guidelines for adults, pregnant women, children, and patients with suspected treatment failure.

ICAP facilitated the expansion of ART initiation and management services from 50 health facilities in Nampula Province in 2011 to 140 facilities in 2016. ICAP supported on-site mentorship covering the full package of HIV care, including the treatment of opportunistic infections and the provision of preventive therapies, TB screening, nutritional support, clinical and lab follow-up, positive prevention, and adherence support. Figures 4 and 5 show the substantial increase in the number of adults and children ever initiated on ART and the number currently on ART at supported health facilities.

ICAP also supported the national CAG expansion strategy to increase retention and reduce congestion at health facilities. By 2016, over 4,100 stable patients on ART from 49 health facilities were receiving ART through 1,148 active CAG in Nampula Province. In addition, ICAP supported SDSMAS to implement standard operating procedures for CAG at supported health facilities, to initiate waiting room promotion of CAG, and to supervise CAG implementation.

Figure 4. Increase in Adults Accessing ART Services in Nampula Province, October 2011 - September 2016

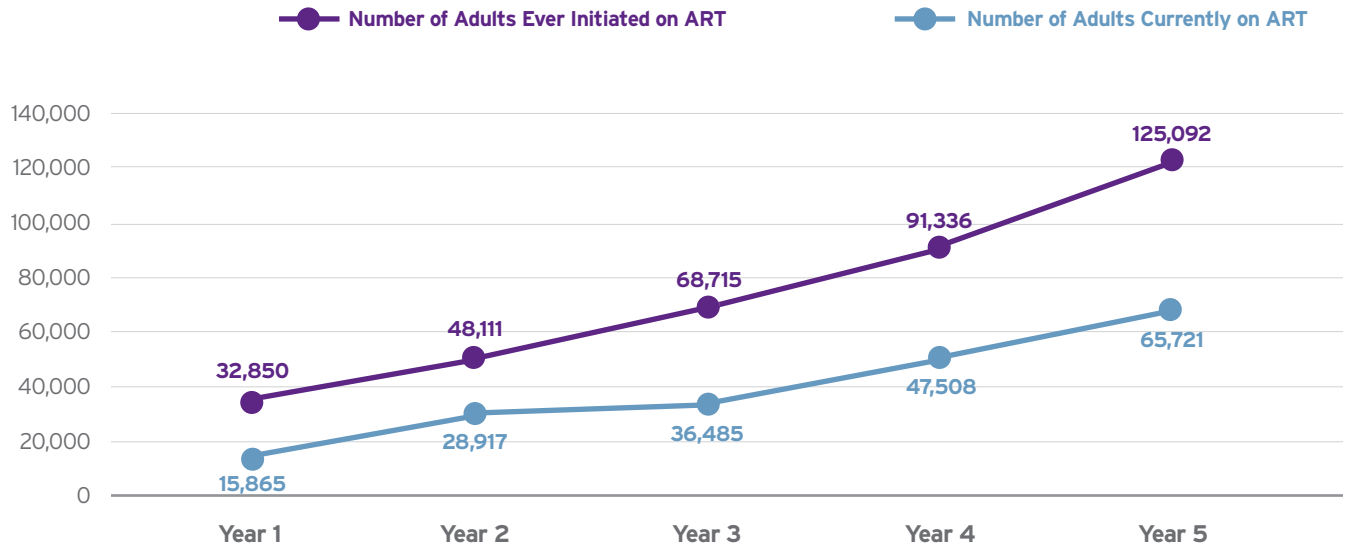
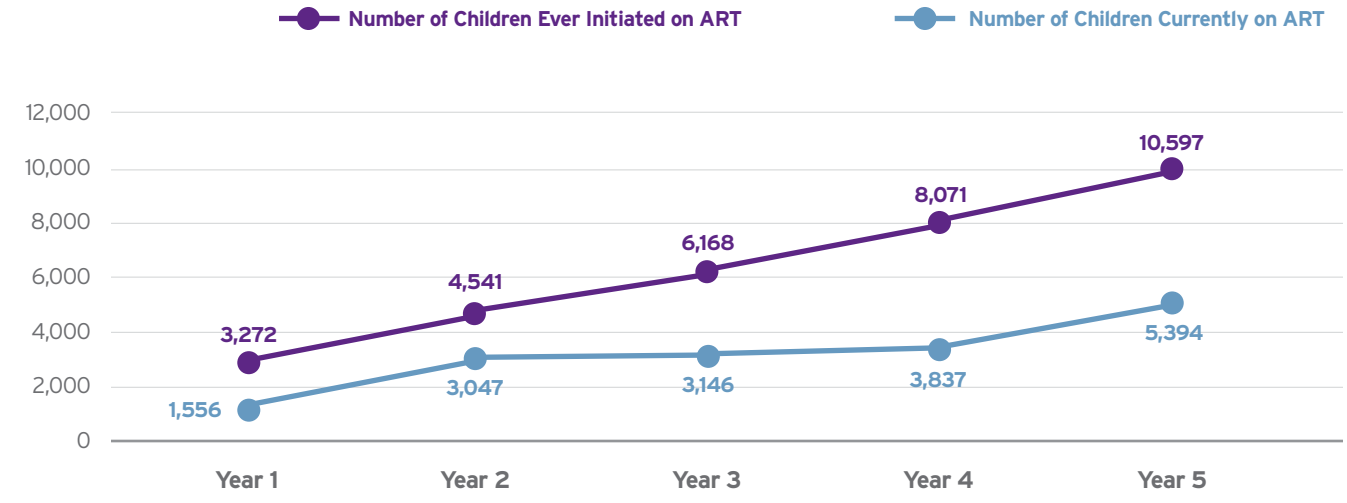


Figure 5. Increase in Children Accessing ART Services in Nampula Province, October 2011 - September 2016

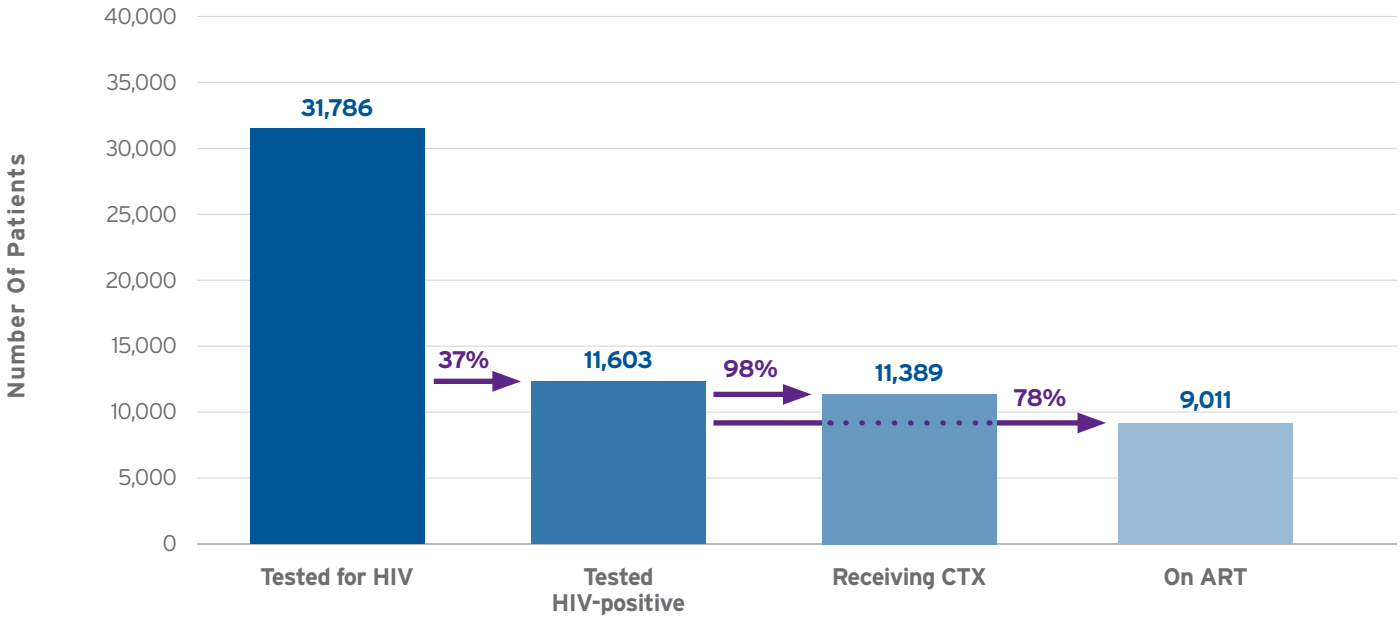


Supporting High-Quality, Integrated TB/HIV Services

ICAP supported the expansion of TB/HIV services for adults and children in Nampula Province. TB screening using a symptom checklist was scaled up at health facility entry points (including MCH clinics) and the number of health facilities with TB diagnostic capacity increased from 44 to 53. To enable patients with TB/HIV co-infection to access more streamlined care, ICAP supported a one-stop model of TB/HIV care at supported facilities. ICAP also supported the implementation of new pediatric TB guidelines and a tool to improve TB screening and diagnosis among children. With a focus on decreasing mortality among patients with TB, ICAP also provided TB/HIV-specific support to TB sites, including providing clinical mentorship and supporting quality assessments and cohort evaluations.

Figure 6 shows the TB/HIV care cascade: Of the 31,786 TB patients tested for HIV at supported facilities, 11,603 tested positive. Of this number, a high proportion started on cotrimoxazole (CTX) prophylaxis (98%) and ART (78%).

Figure 6. TB / HIV Care Cascade at ICAP-supported Health Facilities in Nampula Province, October 2011 - September 2016



Implementing Quality Data Systems

ICAP provided technical assistance to ensure that decentralized HIV services were underpinned by high-quality data systems. This included supporting the implementation of national M&E tools, the national data quality assurance strategy, and the District Health Information System. In addition, ICAP supported the implementation of a patient-level database for HIV care, treatment, and follow-up and provided training to health facility data clerks and DPS and SDSMAS M&E staff. This included assisting health facility teams to use reports generated by the database, in conjunction with patient files, to address gaps in care. ICAP also supported quarterly data review meetings with each SDSMAS to analyze performance and identify issues requiring action and successes to be built upon.

Increasing Workforce Protection

To protect health workers against occupational exposure to HIV, ICAP supported biosecurity assessments and corrective actions at all supported health facilities and provided mentorship on biosecurity to maternity, laboratory, and treatment room teams. ICAP also supported the implementation of post-exposure prophylaxis (PEP) for health care workers: teams at supported health facilities were trained on PEP, PEP focal persons were identified at each facility, and issues related to PEP and biosecurity were integrated into the site support provided by SDSMAS supervisors.

Expanding Services for Survivors of Gender-based Violence

ICAP worked with police, judicial officials, and health and social welfare departments to implement the national strategy on gender-based violence at 31 health facilities in Nampula Province, all of which now provide PEP. This included training health workers at these sites to receive, advise, and care for female and male survivors of gender-based violence. In addition, ICAP provided training to community-based organizations to raise awareness of gender-based violence using small group discussions, and adapted existing systems to trace defaulting HIV patients to improve retention of gender-based violence survivors in care. By 2016, over 3,750 victims of gender-based violence had benefited from these services.

Implementing Cervical and Breast Cancer Services

Beginning in 2013, ICAP supported the DPS to implement the national program for cervical and breast cancer screening, diagnosis, and treatment (known as CACUM). This was in recognition of the impact of these two conditions on

women's health in Mozambique. CACUM services are now offered at 15 health facilities in Nampula Province, where ICAP provided on-the-job training, clinical mentorship, supervision, and job aids to enable health workers to conduct both types of screening effectively, as well as the needed equipment and consumables. In the final year of this project alone, over 17,000 women in Nampula Province received both cervical and breast cancer screening.

Lessons Learned

Valuable knowledge was generated as a result of ICAP's experience providing support in Nampula Province during the five-year period from 2011 to 2016:

- ICAP's support needed to take into account the size and geographical diversity of Nampula Province, the variability in HIV prevalence between localities, and the large number of health facilities requiring support. Field teams covering multiple districts optimized resources and ensured that all SDSMAS and health facilities received high-level, multidisciplinary technical assistance that was adapted to local population health needs.
- Integration of HIV services into primary health care was critical. This approach helped strengthen the health system and reduce stigma experienced by patients. Differentiated models of care, such as one-stop models and community ART groups, had the dual benefit of relieving congestion at health facilities and tailoring services to the needs of different patient populations.
- Initiatives that engaged communities and strengthened linkages between communities and health facilities played an important role in increasing enrollment and retention in care. Patients who were trained as peer educators played a significant role in improving HIV service delivery by taking on concrete tasks in health facilities, reaching out to the community, and offering support to their peers.
- Regular site support built solid partnerships and mutual trust between ICAP, DPS, SDSMAS, and health facility teams. Joint planning and supportive supervision with government health teams built technical capacity, cultivated leadership, and promoted ownership of programs and targets.
- Decentralization of HIV services was effective because the process was underpinned by health systems strengthening initiatives, including strengthening referral and laboratory management information systems, improving infrastructure, and building local capacity through support for pre-service education and strategic sub-agreements with the DPS and SDSMAS.
- Task-shifting to nurses and clinical officers created the workforce capacity needed to decentralize HIV services and integrate HIV and related health care. This was particularly evident in the successful rollout of PMTCT Option B+ within MCH clinics.
- Use of data was prioritized in order to improve programs through joint review, analysis, and application of program data with DPS, SDSMAS, and health facility teams. The expansion of electronic M&E systems greatly facilitated data reporting, access, monitoring, analysis, quality assurance, and use for planning and quality improvement.

The Way Forward

Much has been achieved in Mozambique and Nampula Province in terms of confronting the HIV epidemic. These achievements form the foundation for a future without AIDS. Continuing the current momentum to reach epidemic control will require a consolidation of past achievements, as well as new advances and innovations that enable rapid progress toward the UNAIDS 90-90-90 targets.

To reach the goal that 90 percent of people living with HIV will know their status, it will be necessary to scale up HIV counseling and testing in diverse settings, with a special focus on population groups that are currently lagging behind, such as young men and women. This will require greater engagement with communities and local leaders and enhanced, targeted demand creation strategies. It will also be critical to address gaps in the supply chain for rapid tests to enable all those with undiagnosed HIV infection to be reached.

Reaching the second 90 (that 90 percent of all people diagnosed with HIV infection will receive sustained ART) will require concerted efforts to increase access and scale up the test and treat approach. Differentiated models of care, including community ART groups, will be critical, as these approaches reduce congestion at health facilities with a high volume of patients, such as in Nampula City, and create the conditions needed to expand ART coverage and improve patient follow-up and retention. In addition, rolling out electronic, patient-level data systems to all health facilities will be important to ensure rigorous monitoring of the HIV care cascade, and to ensure that at least 90 percent of people who test HIV-positive are initiated and retained on ART.

Finally, in order to achieve 90 percent viral suppression among people living with HIV who are on ART, increased access to viral load monitoring and the use of viral load data to guide patient management is imperative. This will necessitate additional technical assistance focused on clinical and laboratory services, as well as logistical support to improve referral and patient monitoring systems.

ABOUT ICAP

ICAP was founded in 2003 at Columbia University's Mailman School of Public Health. A global leader in HIV and health systems strengthening, ICAP provides technical assistance and implementation support to governments and non-governmental organizations in more than 21 countries. ICAP has supported work at more than 5,200 health facilities around the world. More than 2.2 million people have received HIV care through ICAP-supported programs and over 1.3 million have begun antiretroviral therapy (ART). ICAP has been a partner in Mozambique's national HIV response since 2004, playing a key role during each stage of the response and supporting a total of over 300 health facilities in five provinces: Nampula, Zambézia, Gaza, Inhambane, and Maputo.

Online at icap.columbia.edu

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Photography by Jake Price

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