



BUILDING CAPACITY FOR EXPANDED HIV PREVENTION, CARE, AND TREATMENT IN ZAMBÉZIA, MOZAMBIQUE 2010-2016



ICAP
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Columbia University
Mailman School of Public Health

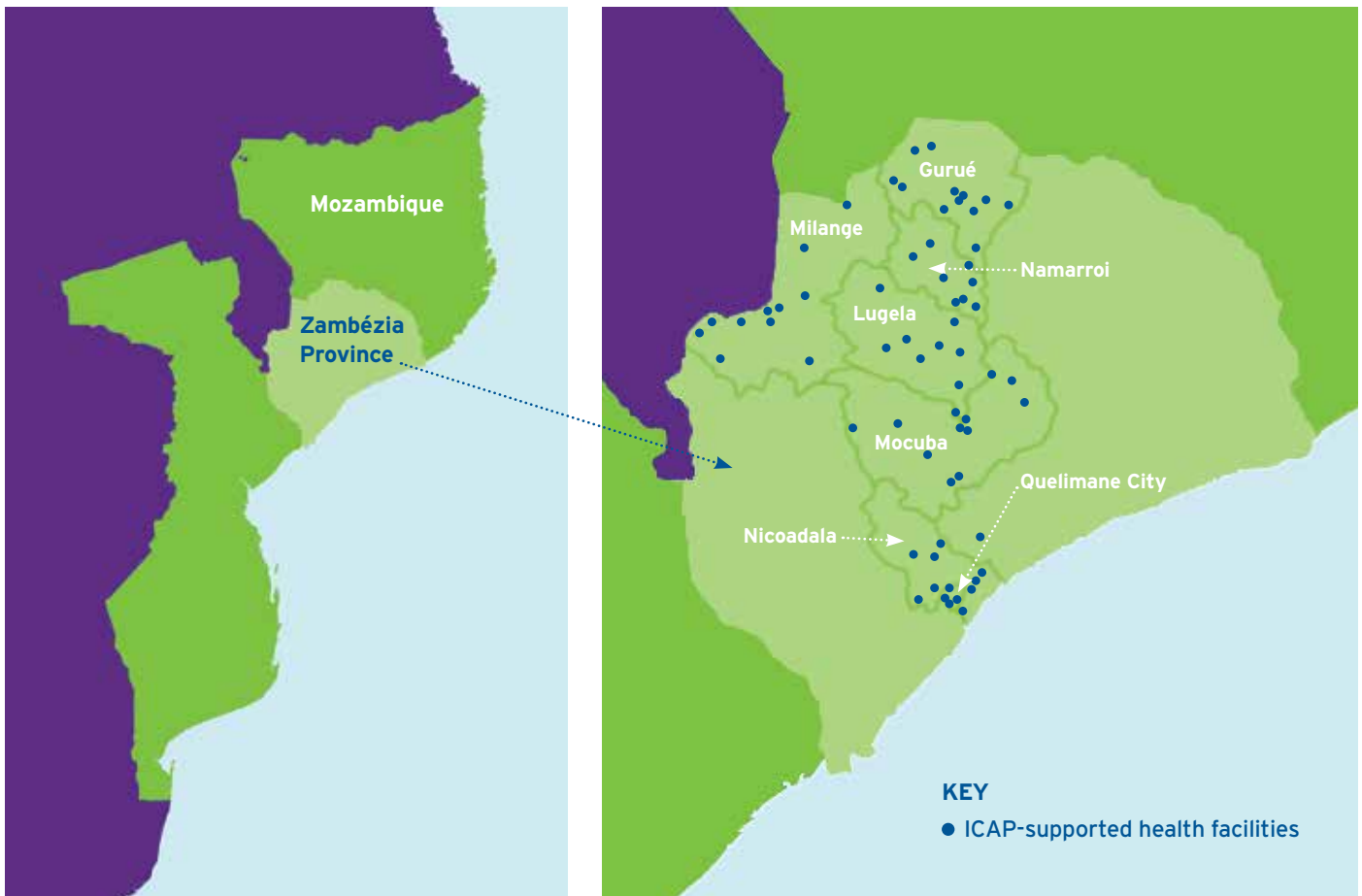
PROJECT BACKGROUND AND OVERVIEW

With a population of 4.9 million and an adult HIV prevalence of 12.6 percent, Zambézia is Mozambique's second most populous province. It is home to just over 40 percent of all people living with HIV in Mozambique. 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 2010 and September 2016, ICAP at Columbia University supported the decentralization of HIV services in Zambézia Province, with PEPFAR funding through the Centers for Disease Control and Prevention. ICAP worked alongside the Provincial Directorate of Health (DPS) and seven District Services for Health, Women, and Social Action (SDSMAS) to plan, implement, and monitor HIV programs, while building the capacity of DPS, SDSMAS, and health facility teams to achieve National Acceleration Plan goals.

In 2010, ART was available at only 11 health facilities in the seven ICAP-supported districts in Zambézia. These seven districts (see Figure 1) are home to half of the province's population. Patients in outlying areas were often required to travel 100 kilometers or more to access HIV treatment. Through this project, ICAP provided comprehensive capacity building support to enable all 86 health facilities in the seven districts to deliver high-impact, family-centered HIV services, with 77 of these facilities now offering ART initiation and management services. This work included providing technical support to one provincial hospital, three rural hospitals, and 82 health centers to strengthen services focused 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; voluntary medical male circumcision (VMMC); care for survivors of gender-based violence; and cervical cancer screening.

Figure 1. Map of ICAP-supported Health Facilities and Districts in Zambézia Province



CORE PROJECT APPROACHES

Partnership. ICAP worked alongside the DPS and SDSMAS to implement the National Acceleration Plan and build sustainable programs that address each district's needs and priorities. By collaborating closely with local partners during each step of project implementation, ICAP fostered leadership, developed local organizational capacity, and was able to transition its support functions in an incremental way. Sub-agreements between ICAP and SDSMAS were used to strengthen local capacity to manage program activities and resources.

Multidisciplinary Support. Each of the seven supported SDSMAS received comprehensive clinical and program management support from a multidisciplinary ICAP team based within the district, which was reinforced with high-level support from provincial, national, and global ICAP advisors as needed. ICAP supported competency-based training for health facility teams that was followed up with ongoing training and mentorship at each new ART site. Institutional capacity building support to the SDSMAS had a strong focus on providing multidisciplinary supervision and mentorship to health facility teams.

Health Systems Strengthening. ICAP reinforced health system building blocks at the provincial, district, and health facility level by upgrading health facility infrastructure; enhancing the laboratory network and pharmacy management systems; supporting implementation of national monitoring and evaluation (M&E) tools and the national data quality assurance strategy; supporting large-scale, in-service training; and establishing a pre-service education partnership with the Quelimane Health Sciences Institute.

Evidence-Based Programming. Leveraging its core strength in strategic information, ICAP built the capacity of the DPS, SDSMAS, and supported health facilities to use data for planning and continuous quality improvement. ICAP supported the implementation of two important resources—a patient-level database (see Box 1) and the District Health Information System—and facilitated quarterly data review meetings with the SDSMAS to analyze key indicators, discuss trends, and identify successes and challenges.

Innovation. ICAP collaborated with DPS, SDSMAS, and health facility staff to promote, pilot, and roll out new approaches to improving access to health services and linkages to and retention in care. Examples include implementing a patient-level database, an SMS appointment reminder system, barcodes on antiretroviral medicines to improve services at health facility pharmacies, and community ART groups.



Continuous Quality Improvement. Regular quality assessments that identify gaps and inform activities to improve the quality of health services are central to ICAP's model of support. ICAP's district teams supported SDSMAS and health facility teams to measure quality, identify gaps in HIV care, and develop and monitor health facility-level action plans, as well as to prioritize technical domains for clinical mentorship and follow-up. ICAP also supported local partners to implement a range of continuous quality improvement tools, including the national quality improvement strategy, which was implemented at 22 health facilities in Zambézia Province.

BOX 1. Creating a Patient-Level Database to Improve HIV Service Coverage and Quality

All HIV patients at ICAP-supported health facilities in Zambézia Province are now registered in a database that documents their care, treatment, and follow-up. The seven SDSMAS and 25 high- and medium-volume health facilities have onsite access to the database, which incorporates an SMS appointments reminder system. SDSMAS and health facility teams use automated database reports, in conjunction with patient files, to identify and address gaps in care and to promote retention and adherence. The database has made it much easier for health facility teams to identify and follow up with key categories of patients; for example, those eligible for treatment but not on ART, those eligible to join community ART groups, those who have missed an appointment, and those suspected of treatment failure.

KEY ACHIEVEMENTS

ICAP support contributed to the following achievements in Mozambique's Zambézia Province between October 2010 and September 2016:

- **327,283** people were tested for HIV through provider-initiated counseling and testing.
- **197,556** people were tested for HIV at voluntary counseling and testing units.
- **48,707** HIV-positive pregnant women received PMTCT services.
- **75,643** adults—including **18,017** pregnant women—and **6,330** children were initiated on ART.
- **4,921** stable ART patients enrolled in **1,252** community ART groups.
- **32,368** HIV-exposed infants received a DNA-PCR test for early infant diagnosis.
- **128,551** adolescent and adult males accessed voluntary medical male circumcision services.
- **1,132** survivors of gender-based violence received care.



"ICAP supported every stage of ART expansion, first building the capacity of health service personnel so that they could successfully achieve expansion of ART services with high quality."

Dr. Oscar Auade
Chief Medical Officer, Zambézia DPS

Enhancing Health Facility Infrastructure

In order to ensure conditions conducive to the provision of high-quality services, ICAP supported equipment procurement, minor renovations, and repairs at 27 health facilities in Zambézia Province (see Table 1). This included supporting the installation of pre-fabricated clinics for VMMC service delivery at three health facilities and a pre-fabricated clinic for TB service delivery at another. ICAP worked closely with the DPS and SDSMAS to assess each facility's needs, and then to plan and manage the renovations. This helped build the capacity of local partners to manage similar renovation projects in the future. ICAP also supported minor renovations at seven secondary schools implementing DREAMS activities focused on reducing HIV infections among adolescent girls.

Increasing HIV Counseling and Testing Rates

In order to expand the coverage of HIV counseling and testing services and maximize the number of people living with HIV who know their status, ICAP supported the scale-up of both provider-initiated and voluntary counseling and testing services. Provider-initiated HIV counseling and testing was expanded to all supported health facilities in Zambézia Province 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). In addition, ICAP supported

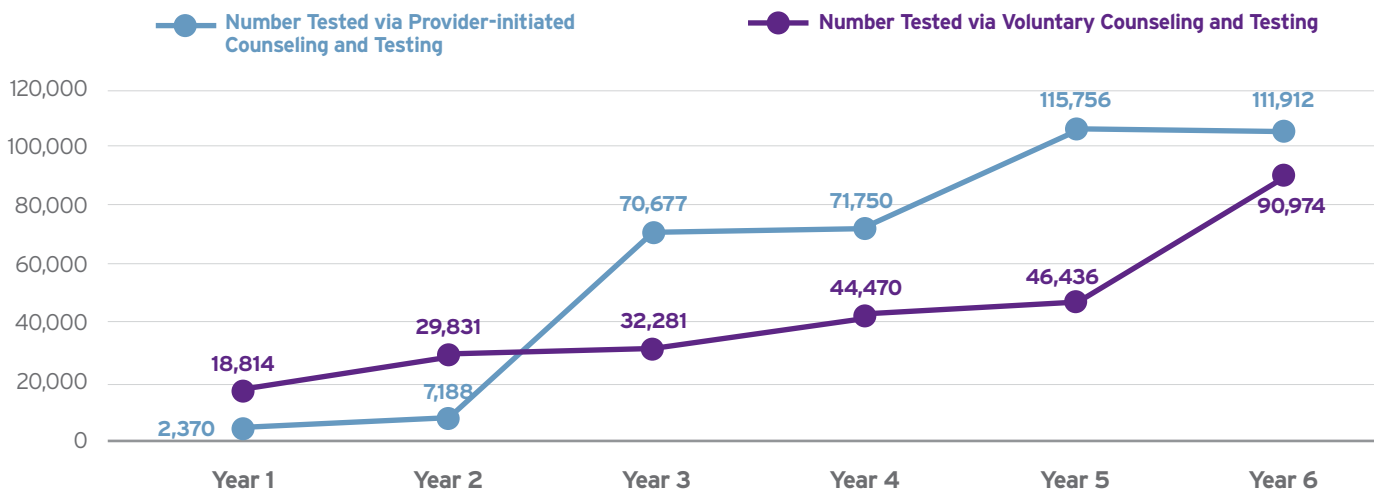
Table 1. Summary of ICAP-supported Renovations

Type of Unit	Number Renovated
HIV Care	8
PMTCT / Maternal and Child Health	15
VMMC	9
TB	6
Pharmacy	12
Laboratory	16

a one-stop model of voluntary counseling and testing at 35 testing sites, which includes same-day enrollment in HIV care for patients who test HIV-positive. ICAP introduced a simple family tree tool that is now used in the context of both provider-initiated and voluntary counseling and testing to identify the partners and children of index HIV patient so as to encourage these family members to get tested.

As shown in Figure 2, there was a substantial increase in the number of people receiving HIV counseling and testing at ICAP-supported facilities in Zambézia Province during the project period.

Figure 2. Increase in HIV Counseling and Testing Rates at ICAP-supported Health Facilities in Zambézia Province, October 2010 - September 2016





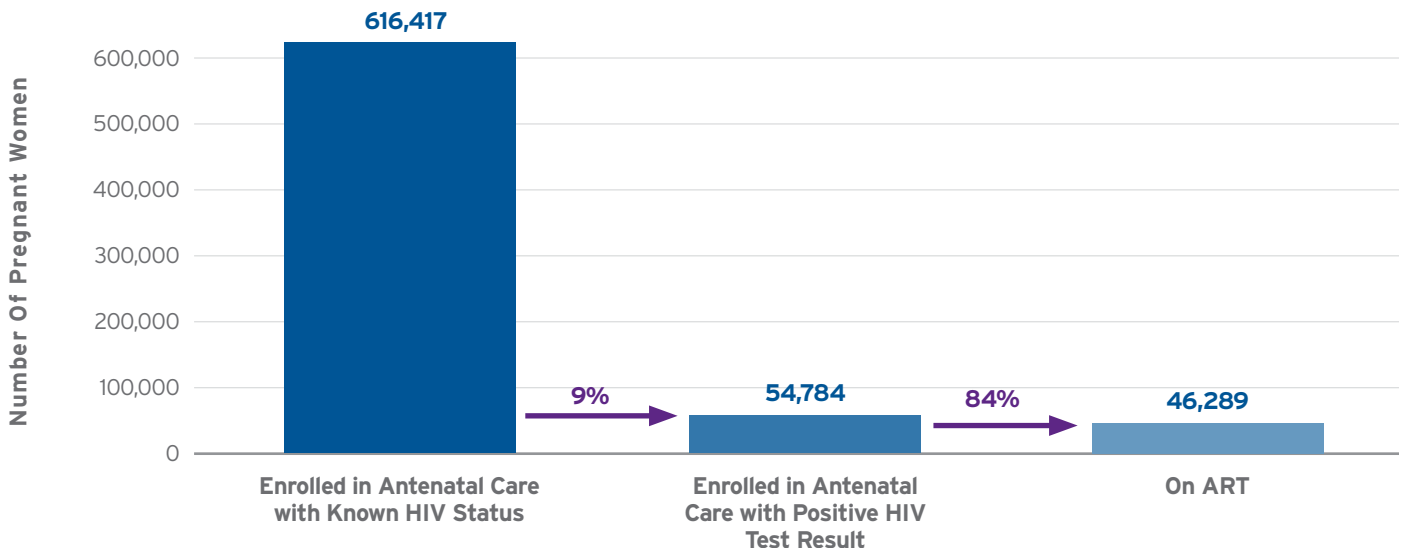
Expanding Services to Prevent Mother-to-Child Transmission of HIV

ICAP supported the expansion of PMTCT services, integrated with MCH care, to all 86 supported health facilities in Zambézia Province. 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. Option B+ was implemented using a one-stop model that allows women to receive MCH and HIV care and treatment during a single visit. This is the approach now used at the 77 health facilities that offer ART services. By March 2016, PMTCT coverage in the seven ICAP-supported districts had reached 90 percent and ART coverage among HIV-positive pregnant women had reached 92 percent.

ICAP also supported the scale-up of early infant diagnosis services from 51 health facilities in 2011 to 80 health facilities in 2016. Support included mentoring MCH nurses to improve identification of HIV-exposed infants, expanding DNA-PCR testing for early infant diagnosis to more laboratories, and implementing follow-up systems at health facilities for: tracking DNA-PCR test results, contacting mothers to return to the clinic to receive results, and monitoring enrollment and retention of infants in HIV care.

Figure 3 shows the PMTCT care cascade: Of the more than 616,400 pregnant women whose HIV status was determined, 54,784 were found to be HIV-positive and 84 percent of these women received ART.

Figure 3. PMTCT Care Cascade at ICAP-Supported Health Facilities in Zambézia Province, October 2010 - September 2016



Expanding and Enhancing HIV Care and Treatment Services

ICAP supported the DPS and SDSMAS to expand ART initiation and management services from 11 to 77 health facilities in the supported districts. In addition, mobile clinics were equipped to provide ART at peripheral health facilities not offering ART services. All 86 health facilities in the ICAP-supported districts were supported to enhance the quality of HIV care.

ICAP supported three key national strategies to increase the coverage and quality of HIV services: community ART groups (starting in 2011); expanded ART eligibility criteria (starting in 2013); and viral load monitoring for patients with suspected treatment failure (starting in 2015), which is now offered at 24 health facilities. More than 4,000 stable ART

patients now receive refills through community ART groups, where one patient collects monthly refills for up to six group members. This strategy is helping to decongest health facilities, increase retention by reducing the number of clinic visits, and promote peer-to-peer adherence support. ICAP also supported additional activities focused on increasing adherence to treatment and retention in care, including the institutionalization of: peer education services that offer patients escorted referrals, home visits, and routine tracing when appointments are missed; patient support groups; family days at health facilities; and targeted monitoring to identify patients eligible for ART but not yet initiated on treatment.

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.

Figure 4. Increase in Adults Accessing ART Services in Zambézia Province, October 2010 - September 2016

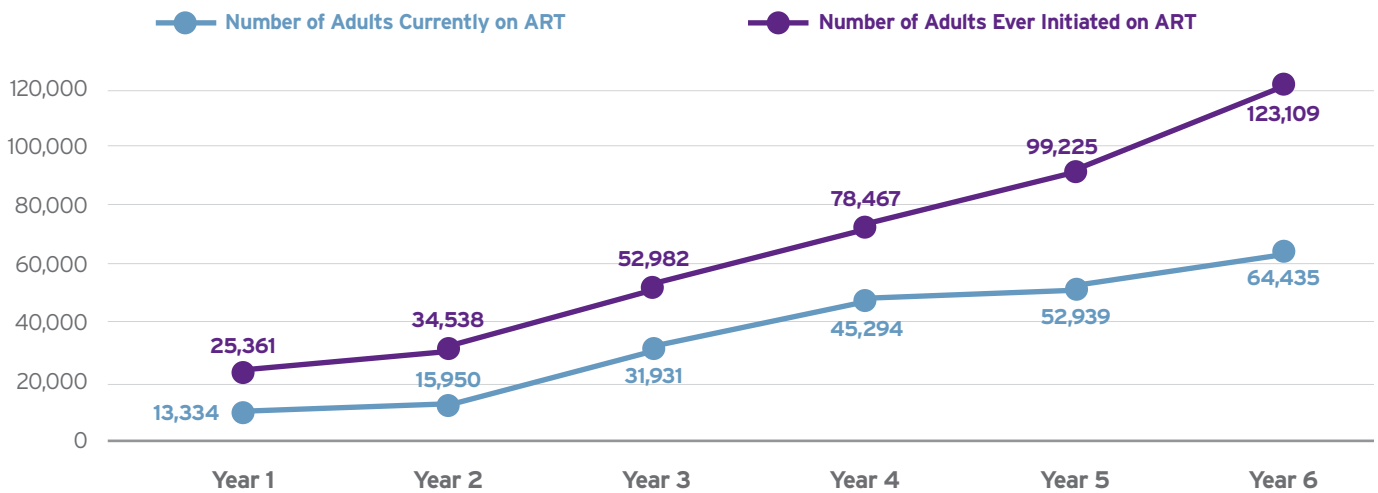
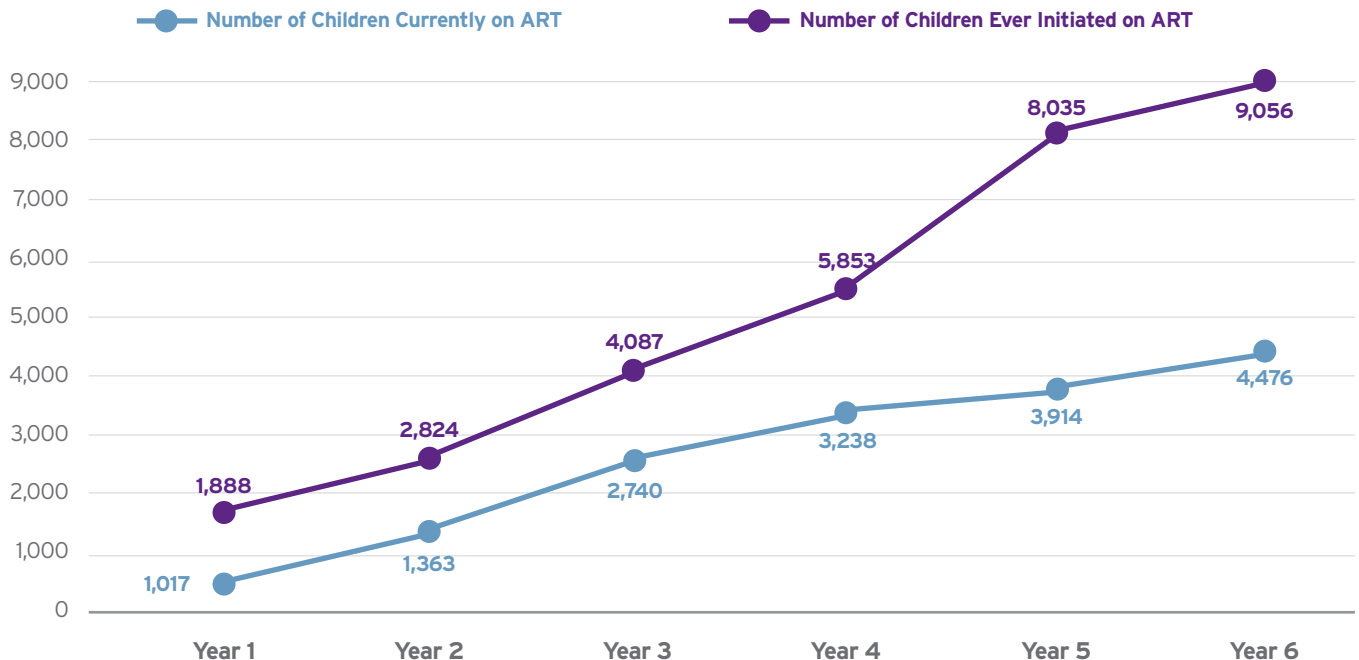


Figure 5. Increase in Children Accessing ART Services in Zambézia Province, October 2010 - September 2016



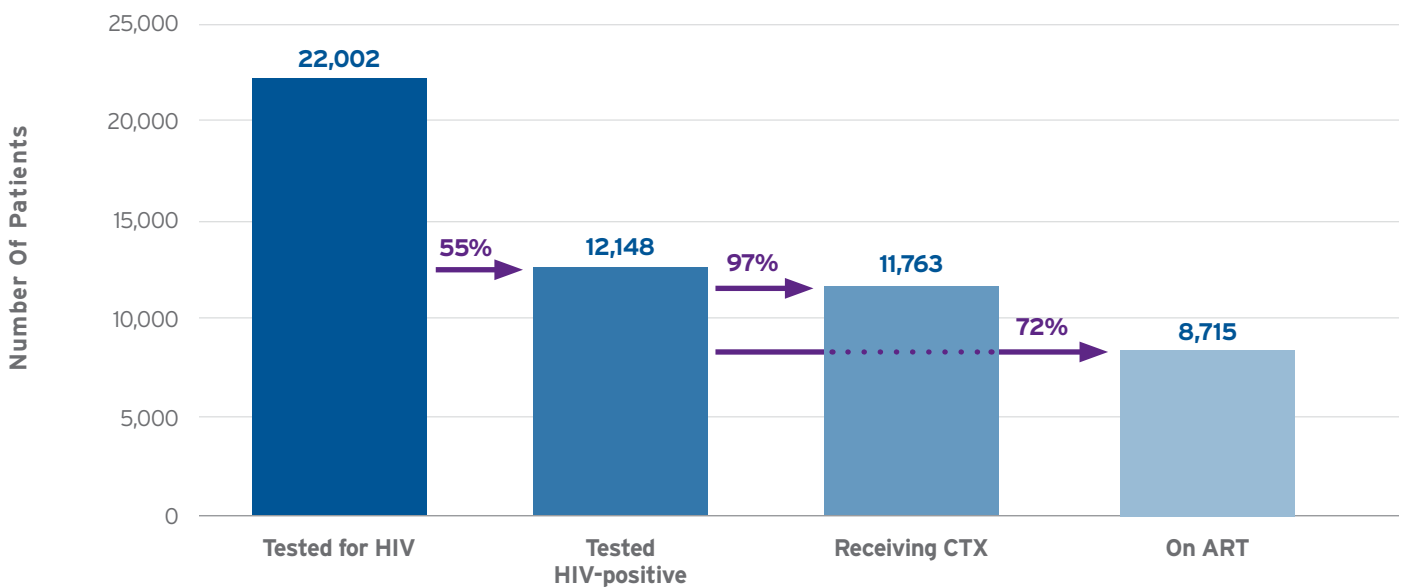
Supporting High-Quality, Integrated TB/HIV Services

ICAP supported the expansion of integrated TB/HIV services in supported districts in Zambia Province. ICAP provided support to enhance health facility laboratories and supported the DPS and SDSMAS to provide TB diagnostic and management training to health workers, which resulted in a 100 percent increase in the number of health facilities in the supported districts with TB diagnostic capacity (from 11 to 22 facilities). ICAP also supported all 22 of these facilities to implement a one-stop model of TB/HIV care, enabling patients with co-infection to access both TB and HIV services in the TB unit, including HIV counseling and testing, contact screening, sample collection for lab tests, TB treatment, cotrimoxazole (CTX) prophylaxis, treatment of opportunistic infections, screening and treatment for sexually transmitted infections, ART, adherence and psychosocial support, and positive prevention. ICAP also supported the integration of routine TB screening with HIV care at all supported health facilities, followed by referral and follow-up of TB suspects and provision of isoniazid preventive therapy for HIV patients with a negative TB screen.

Figure 6 shows the TB/HIV care cascade: Of the over 22,000 TB patients tested for HIV at supported facilities, 12,148 tested positive. Of this number, a high proportion started on CTX prophylaxis (97%) and ART (72%).



Figure 6. TB / HIV Care Cascade at ICAP-supported Health Facilities in Zambia Province, October 2010 - September 2016



Launching and Scaling Up Voluntary Medical Male Circumcision Services

Beginning in 2013, ICAP supported the launch and successful expansion of VMMC services in Zambézia, in support of the Ministry of Health goal of reaching 80 percent VMMC coverage among males 10-49 years old. This included supporting minor renovations, pre-fabricated clinics, and medical equipment; additional staffing, training of multidisciplinary teams, and intensive onsite mentorship and supervision; ongoing procurement of medicines, VMMC kits, registers, and consumables; and the implementation of VMMC-specific quality assurance tools and continuous quality improvement cycles.

As a result of these efforts, full-time VMMC clinics that have male-friendly hours are now available at nine high-volume health facilities, and a dedicated mobile VMMC clinic actively serves rural communities. Further, peripheral health facilities support outreach clinics and seasonal campaigns targeting adolescents. Uptake of services at all sites is promoted through community mobilization, music and drama events, messages on local radio stations, and school outreach. By 2016, 128,551 adult and adolescent males had accessed VMMC services at ICAP-supported sites (see Figure 7).

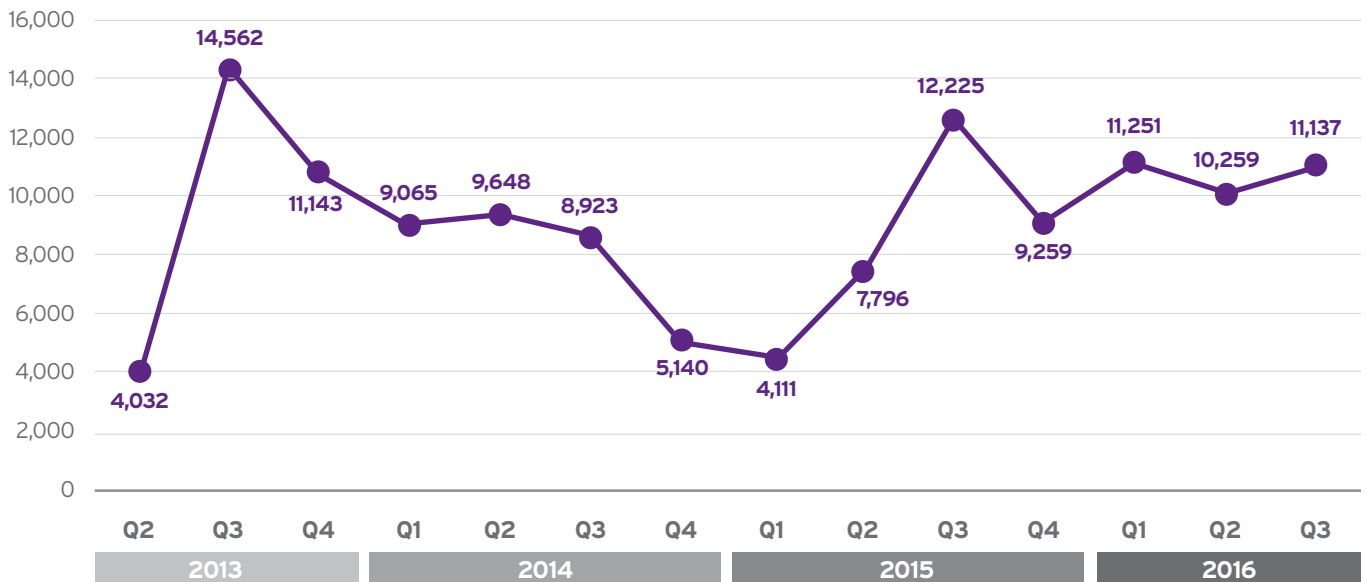
Expanding Services for Survivors of Gender-based Violence

ICAP supported PEPFAR's gender-based violence initiative by working with police, judicial officials, and health and social welfare departments to implement the national



gender-based violence strategy in Zambézia Province, and by training 191 health workers to receive, advise, and care for female and male survivors of gender-based violence. Whereas there were no specialized services for survivors of gender-based violence prior to this initiative, services are now available at 19 health facilities in the province, eight of which provide post-exposure prophylaxis. By 2016, over 1,100 victims of gender-based violence had benefited from these services.

Figure 7. Total Number of Males Accessing VMMC Services at ICAP-supported Sites in Zambézia Province, March 2013 - September 2016



LESSONS LEARNED

Valuable knowledge was generated as a result of ICAP's experience providing support in Zambézia Province during the six-year period from 2010 to 2016:

- 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 systems 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.
- To ensure the successful launch of the VMMC program, ICAP and the DPS invested significant time in joint planning, comprehensive training, and regularly data review. Service delivery and management by a combination of Ministry of Health and ICAP personnel proved an efficient approach to achieving VMMC targets and assuring quality.
- 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 Zambézia Province in terms of confronting the HIV epidemic. These achievements form the foundations 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.

Achieving 80 percent VMMC coverage will require further expansion of VMMC services to rural communities, as well as innovative approaches to generating demand for VMMC among men aged 25 and older.

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 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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