

MOZAMBIQUE

ICAP SUPPORT TO THE MINISTRY OF HEALTH FOR RAPID
SCALE-UP OF HIV PREVENTION, CARE, AND TREATMENT



ICAP

Global. Health. Action.
COLUMBIA UNIVERSITY
Mailman School of Public Health



Centers for Disease Control and Prevention



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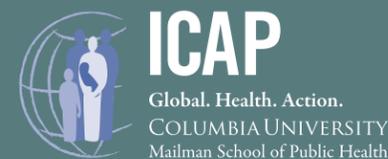
A child is examined in a HIV care and treatment clinic as she holds her aunt's hand.

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ADDRESSING THE GLOBAL HIV EPIDEMIC

Globally, 34 million people are living with HIV¹, and 7,000 are newly infected each day.² As of 2011, HIV has infected more than 60 million people and caused at least 30 million deaths.

In the face of such overwhelming figures, it is easy to lose sight of the remarkable strides that have been made in the response to HIV over the past decade. Millions of people living with HIV have built better futures for themselves, their families, and their communities as a result of innovative, effective HIV prevention, care, and treatment programs.

A Global Response

At the end of 2010, roughly 6.65 million people in low- and middle-income countries were receiving antiretroviral treatment (ART),³ almost a 22-fold increase since 2001 and an achievement that many considered impossible 10 years earlier. Over the same period, the rate of new HIV infections in 22 of the most severely affected countries dropped by more than 26 percent.⁴

A major reason for this dramatic turnaround has been the initiation of the United States President's Emergency Plan for AIDS Relief (PEPFAR), which was launched in 2003. Now after its eighth anniversary, it has proved notable in its size, scale, and impact on increasing access to HIV prevention, care, and treatment and has proven one of the most successful large-scale global public health undertakings ever. By September 2011, the US government had supported approximately 50% of the global response—more than 3.9 million men, women, and children worldwide, and more than 13 million of those in HIV care and support services.⁵

Key Partner

In 2002, in response to the United Nations Secretary General's Call to Action, the Mailman School of Public Health at Columbia University helped to establish the MTCT-Plus Initiative to widen the limited scope of prevention of mother-to-child HIV transmission programs in many resource limited settings. This initiative, funded first by a coalition of private foundations and subsequently expanded with funding from the United States

Agency for International Development (USAID), supported provision of comprehensive and specialized care, including ART, to HIV-infected women, their partners, and their children identified in prevention of mother-to-child transmission (PMTCT) programs. Mailman's experience implementing the MTCT-Plus Initiative helped to inform the model and approaches later adopted by ICAP.

Columbia University's role in implementing PEPFAR began in 2003, when it received funding from the Global AIDS Program of the U.S. Centers for Disease Control and Prevention (CDC) under the University Technical Assistance Projects (UTAP) to support the development of important components of national HIV programs, including treatment protocols and training. In 2004, ICAP was founded and was awarded a new cooperative agreement from CDC under the PEPFAR framework to provide comprehensive HIV care and treatment in five countries: Kenya, Mozambique, Rwanda, South Africa, and Tanzania, with programming in Côte d'Ivoire, Ethiopia, and Nigeria added subsequently. This initiative, the Multicountry Columbia Antiretroviral Program (MCAP), has rapidly expanded programs for HIV care and ART by promoting early diagnosis of HIV infection, maintaining the health of those living with HIV, and preventing further transmission of HIV within the community. MCAP programming during the period 2004–2012, in addition to supporting the rapid scale-up of care and treatment in partnership with host-country governments, has emphasized the full continuum of HIV-related services, continued capacity building and health systems strengthening, and transition of operations to host governments and local nongovernmental organizations.

Today a global leader in HIV service delivery, human capacity development, and systems strengthening, ICAP has supported service delivery at more than 2,000 facilities across 21 countries. More than one million people have accessed HIV services through ICAP-supported programs, and approximately one patient in 10 receiving PEPFAR-funded ART in sub-Saharan Africa is obtaining it at an ICAP-supported health facility.

ICAP's operations are grounded in the belief that HIV services should be universally accessible and that people in resource-

poor areas can adhere to life-saving treatment regimens. ICAP works with ministries of health, local organizations, and people living with HIV to develop sustainable, locally appropriate HIV prevention, care, and treatment programs that are integrated with national AIDS control programs. ICAP's comprehensive model consists of:

- A family-focused approach to HIV prevention, care, and treatment services
- Support for multidisciplinary teams of health care providers
- A continuum of clinical and supportive services for patient and family needs at every stage of HIV disease
- Programs to promote retention and adherence to HIV care and treatment
- Empowerment of patients and their families
- Linkages to community resources
- High-quality services, with carefully set standards of care and methodologies for program evaluation, operations research, and program improvement

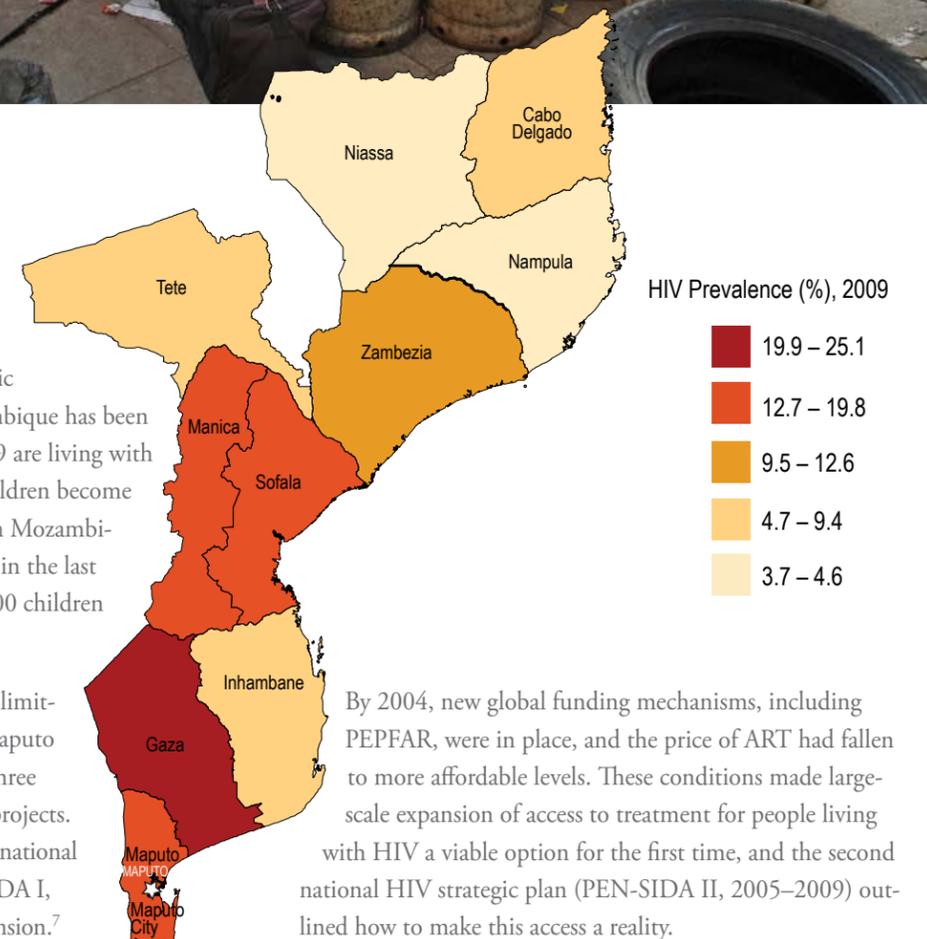


Street scene in Maputo City

HIV in Mozambique

The impact of HIV on social, economic and development indicators in Mozambique has been profound. 11.5% of adults aged 15–49 are living with HIV; a further 110,000 adults and children become infected every year. Over half a million Mozambicans have died of AIDS-related causes in the last decade alone, and an estimated 670,000 children have been orphaned by AIDS.⁶

In 2001, HIV treatment services were limited to services for state employees at Maputo and Nampula Central Hospitals and three small nongovernmental organization projects. ART cost was prohibitive, and the first national strategic plan to combat HIV (PEN-SIDA I, 2002–2003) did not contemplate expansion.⁷





Murals in the pediatric waiting area at the Integrated Center for HIV Care and Treatment

ICAP IN MOZAMBIQUE

ICAP was awarded funds by the United States government in 2004 to be a partner of the *Ministério da Saúde* (MISAU) in the scale-up of HIV prevention, care, and treatment services.

Initially ICAP focused on providing national-level technical support to MISAU in policy and protocol development and clinical training as well as supporting a limited number of day hospitals (designated HIV care and treatment facilities). Extensive renovations were necessary to create appropriate spaces for HIV services. To mitigate the shortage of Mozambican doctors with clinical experience in HIV, ICAP brought in experienced advisors and technical officers to model, mentor, train, and coach their counterparts at MISAU, at the *Direções Provinciais de Saúde* (DPS; the provincial health directorates) and the *Direções Distritais de Saúde* (DDS; district health directorates) and supported health facilities on the start-up, delivery and management of HIV services. Early on, formal training at the day hospitals and on-site ICAP technical support established a platform from which ICAP could expand training, support, mentorship, and supervision as the number of supported facilities expanded.

Over time, ICAP support evolved to meet the broadening national program's needs and priorities. ICAP now supports health systems strengthening and institutional capacity building as well as comprehensive HIV-related services for maternal and child health, HIV counseling and testing, laboratory, PMTCT, early infant diagnosis, HIV-exposed infant follow-up, first- and second-line adult and pediatric ART, health facility pharmacies, TB infection prevention and control, blood safety, psychosocial and adherence support and positive prevention programs, nutritional support, as well as the integration of TB and cervical cancer screening into HIV services. In addition, ICAP facility support expanded in accordance with MISAU's goal to have one ART facility in every district. Since 2008, ICAP has also been the lead technical partner in designated provinces and districts.

Since 2009, ICAP facility support has contributed to the national decentralization strategy of shifting HIV services from overburdened specialty referral facilities to primary health care clinics that are closer to the patients they serve. ICAP has further expanded facility support to peripheral health centers and has continued to work alongside DPS and DDS to operationalize policy and roll out care and treatment guidelines. At the national level, ICAP participates in technical working groups and supports the development and revision of national guidelines and policies. ICAP also works closely with MISAU to develop, evaluate, and roll out innovations that enhance the quality, effectiveness, and efficiency of HIV prevention, care, and treatment services.

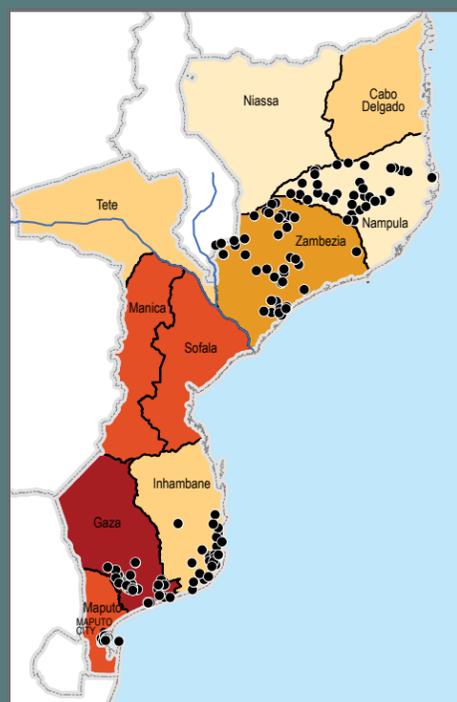
In less than a decade, the government of Mozambique has successfully expanded comprehensive HIV prevention, care, and treatment services. ICAP has been a key PEPFAR partner in that success.

“When PEPFAR arrived, we had 2,000 patients in care and treatment; we reached 6,000 by the end of the first year of PEPFAR and 12,000 in the second year...ICAP was at the head of the PEPFAR-supported expansion—one of our earliest partners as well as the largest. ICAP played a strong role within MISAU at the central level and contributed to developing and implementing strategies, policies, and guidelines. Now, at provincial level, ICAP has been instrumental in integrating HIV care and treatment into community health services.”

—Dr Mouzinho Saide, National Director of Public Health,
Republic of Mozambique

ICAP-Supported Facilities in Mozambique

As of September 30, 2011, ICAP was supporting 185 facilities in Mozambique.



■ Maputo – 24	■ Gaza – 32	■ Zambezia – 56
■ Inhambane – 31	■ Nampula – 42	

Map Sources: ICAP URS <http://mericap.columbia.edu> as of 30 Sep 2011; MEASURE DHS (Demographic and Health Surveys); ESRI; Center for International Earth Science Information Network (CIESIN), Columbia University; and Centro Internacional de Agricultura Tropical (CIAT), 2005. Gridded Population of the World Version 3 (GPW3); National Boundaries. Palisades, NY: Socioeconomic Data and Applications Center (SEDAC), Columbia University. Available at: <http://sedac.ciesin.columbia.edu/gpw/>



“It has been fundamental to the success of ICAP’s work that MISAU sees us as a partner facilitating the achievement of national objectives, not as an outside organization coming in to impose its own way. At the human resource level, our job as partners and advisors is simply to transfer skills over time, by unlocking latent capacity.”

—Dr Rufino Fernandes, ICAP National Technical Manager (2006–2012)

WHAT WAS ACHIEVED?

ICAP’s collaborative partnership with MISAU has been enduring. At national, provincial, district, and facility levels, ICAP has supported the development of policies, guidelines, infrastructure, and human and systems capacities that have enabled MISAU to dramatically expand access to comprehensive HIV care services.

Partnership

ICAP provides high-level technical guidance to MISAU, contributing to its strategic planning process for the national program. In the early stages of the scale-up, ICAP advisors worked closely with MISAU on the development of policies, guidelines, manuals, and implementation plans for clinical training, care and treatment and PMTCT services, adherence and psychosocial support, pharmaceutical management, and monitoring and evaluation.

ICAP was among the MISAU partners who helped institutionalize the technical working group approach, and ICAP advisors have played—and continue to play—an active role in many national-level technical working groups. The ICAP team has also been a key partner in operationalizing new and revised protocols and guidelines through extensive in-service training and mentoring programs, thereby increasing the skills of health professionals to provide high-quality HIV care.

ICAP’s partnerships with DPS and DDS have evolved in accordance with changing national strategies, priorities, and implementation and capacity building needs. During the early stages, hands-on, facility-level support for the introduction and management of services was a necessary emphasis. ICAP worked with DPS to organize and deliver hundreds of in-service trainings each year, and ICAP staff worked alongside DPS counterparts to improve delivery and management of HIV services—for example, suggesting changes to patient-flow management, giving refresher trainings, and helping roll out new patient care guidelines, algorithms, and data collection and reporting tools.

More recently, the primary focus of ICAP’s partnerships with DPS and DDS has been on technical and management capacity building rather than day-to-day facility support.

In Maputo City, Inhambane, and Nampula, where ICAP is the lead clinical partner, ICAP has seconded clinical, laboratory, pharmaceutical, and monitoring and evaluation technical advisors to DPS to strengthen provincial health systems.

ICAP’s Clinical Systems Mentorship methodology, which utilizes objective, patient-data driven assessments of services based on national and international standards, has enhanced the capacity of DPS and DDS to monitor and improve the quality of care.

Access to Comprehensive Prevention, Care, And Treatment Services

Adult Care and Treatment

The expansion of ICAP’s support to adult care and treatment has proceeded, in line with national strategies, balancing the need to rapidly expand access to ART with the need to build capacity and institutionalize best practices. Enrollment and treatment initiation have steadily increased from year to year (see graph next page); today, more than 60,000 adult patients are on ART at ICAP-supported facilities.

ICAP is also working with MISAU, DPS, and DDS to support expansion of HIV services to rural hospitals and peripheral health centers. Since 2009, ICAP and MISAU have expanded services to lower-level health facilities as part of the national decentralization strategy to fully integrate HIV care into the wider health care system and to bring services closer to the patients who need them. ICAP is supporting peripheral health centers to provide HIV treatment, facilitating access to laboratory services, supporting management of complex cases, and carrying out infrastructure enhancements.

Pediatric Care and Treatment

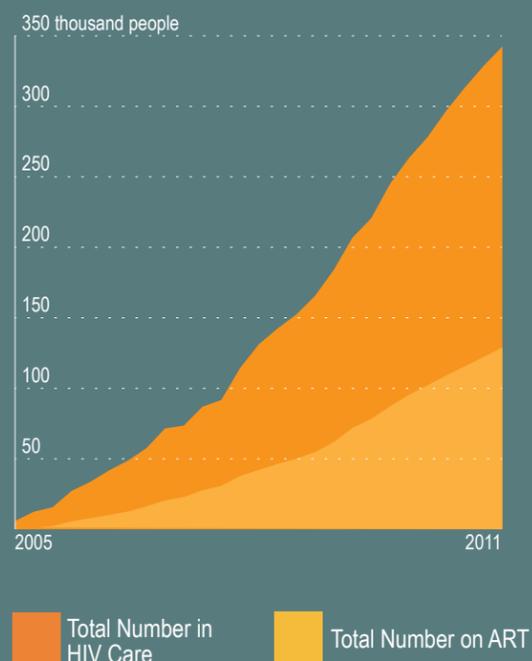
Pediatric care and treatment has been a priority for MISAU from the outset of national ART scale-up. As part of a multipartner technical working group, ICAP supported the creation of pediatric care and treatment guidelines and development of indicators for building the national tools for monitoring the quality of HIV care. ICAP also supported the first pediatric ART services in Mozambique and has supported rollout of updated pediatric treatment guidelines with training and mentoring.

Although pediatric care and treatment services were initially delivered at only a limited number of facilities, providers at all ICAP-supported facilities are now trained to offer pediatric ART.

ICAP and other partners support the Pediatric Center of Excellence at Maputo Central Hospital by training health cadres in the skills they need to provide pediatric care and treatment services. Providers spend two weeks being trained in



Cumulative Number of HIV-Infected Individuals Enrolled in ICAP-Supported HIV Care and Treatment



A pediatric nurse examines an HIV-exposed baby.

case finding and patient follow-up tools, collection of dry blood spots for HIV DNA PCR testing, and a wide range of clinical topics. ICAP also supports MISAU in strengthening pediatric ART services via refresher trainings, facility supervision, provincial-level technical meetings, and a mentorship program for medical technicians.

Innovative strategies deployed by ICAP to expand access to pediatric care and treatment, integrate services and improve quality of care include:

- **The HIV-Exposed Infant Cohort Follow-Up Tool:** This tool was created to strengthen linkages between at-risk child consultations, PMTCT, and pediatric ART services. The tool was rolled out to all ICAP-supported

ICAP supports pediatric ART at 65 facilities and pediatric case finding at 168 PMTCT units. Since 2004, nearly 30,000 pediatric patients have been enrolled in palliative care at ICAP-supported health facilities, and more than 10,000 have initiated ART.

facilities in 2009–2010. Whenever a positive PCR result is received, caregivers are contacted immediately by phone or home visit; when they come for results, a maternal–child health nurse or peer educator accompanies them to the HIV clinic and ensures that the child is registered.

- **Use of SMS Printers:** (see photo right) Slow return of PCR results—often taking between three and six months—impeded timely HIV diagnosis for HIV-exposed infants. The early infant diagnosis working group, of which ICAP is a member, recommended a simple solution that reduced turnaround time to between four and six weeks: SMS printers connect directly to referral laboratories via cellphone networks, eliminating the need to transport results. First piloted at 24 health facilities in Maputo City in 2009, in partnership with the Clinton Health Access Initiative, the printers were installed at all 147 ICAP-supported PMTCT units by the end of 2010. For caregivers, this means receiving essential information about their child much more quickly. No training is required to interpret results, which are delivered with clear next-step instructions for repeat testing and follow-up (in the case of negative findings) and confirmation testing and referral (if positive).

HIV Counseling and Testing

As a result of ICAP support for HIV counseling and testing since 2009:

- Almost 500 providers at ICAP-supported facilities have been trained in health counseling and testing and more than 200 in provider-initiated counseling and testing.
- ICAP-supported health facilities have tested more than 230,000 adults and children for HIV via voluntary and provider-initiated counseling and testing services.

ICAP has intensified support to HIV counseling and testing through:

- **Health Counseling and Testing:** As part of the national strategy to destigmatize HIV testing, it is now integrated into a broad package of health counseling and testing services, offered at 50 ICAP-supported facilities, that



SMS printers such as the one shown here dramatically improve early infant diagnosis.

Laboratory code: 14100/10/02
 Processing date: 9/17/2010 12:00 AM
 Result: Negative
 Name of child: XXXXXXXXXXXXX
 NID: 04/010
 Date of birth: 1/12/2010
 Patient contact: XXXXXXXXXXXXX
 Repeat PCR for children under 9 months with symptoms. Children without symptoms should do HIV rapid test at 9 months and confirm between 12–18 months (2 months after weaning)

also includes screening for sexually transmitted infections, malaria, TB, epilepsy, and diabetes, as well as behavioral risk reduction counseling and referrals for clinical follow-up.

- **Provider-Initiated Counseling and Testing for HIV:** Clinicians at more than 100 ICAP-supported facilities are trained to offer this in a wide range of services. After joint visits by ICAP and MISAU and DPS officials to ICAP-supported districts, new health counseling and testing units and provider-initiated counseling and testing service points and other testing innovations have been added.
- **Psychosocial Support and Referral Linkages:** Peer educators conduct group counseling sessions in waiting areas in order to motivate people to test. A peer educator is called to offer post-test support to all individuals testing HIV positive and to help them to enroll at an HIV clinic.
- **Logistical Support:** ICAP is supporting national efforts to improve supply chain management of HIV rapid tests by mentoring health facility teams in stock control, reporting regularly on stock quantity, and creating partnerships at provincial level for test sample transportation.



The Small Picture

“I discovered I was HIV positive during my pregnancy. The nurse invited me to a support group, and there I understood that I wasn’t alone. I received the support I needed and complied with everything the nurses recommended and, fortunately, my son was born HIV negative. When I became pregnant again, I was sick, and they found that my CD4 count was low and recommended antiretroviral treatment. I got healthier and had a normal delivery, and my baby is now eight months old—HIV negative and doing well.

“Through the mothers’ support group, I had a chance to train as a peer educator, and now I help others who are as frightened as I once was. The fact that the nurses treat us (positive mothers) well means we can stay in good health. I wish there were more projects like this. Silence kills.”

—Osvalda Pedro, HIV care and treatment patient and peer educator, Maxixe Health Center, Inhambane Province (not pictured here)

- **Quality Assurance:** ICAP has worked with other partners to establish a quality testing unit for HIV rapid testing. ICAP and MISAU trainers and laboratory technicians strengthen quality assurance procedures for health facility laboratories by conducting refresher trainings for providers, ensuring the availability of job aids at all facilities, and establishing linkages with the external quality assurance program at the national reference laboratory. This intervention package is being rolled out to all ICAP supported provinces.

Prevention of Mother-to-Child Transmission

As a result of ICAP support for PMTCT expansion from 2004 to 2012:

- Nearly 500,000 pregnant women have been counseled and tested for HIV and received their results at ICAP-supported facilities.
- Almost 50,000 HIV infected pregnant women have received antiretroviral prophylaxis.
- 90% now receive multidrug regimens.
- More than 28,000 HIV-exposed infants have received ART prophylaxis.

Although initial PMTCT services had limited reach, more than 90% of health facilities in Mozambique had PMTCT services by 2011.

ICAP established model PMTCT centers at the José Macamo General Hospital in Maputo and at the 25th of September Health Center in Nampula. The model of care put in place at those two centers and then rolled out more broadly is a true success story, one subsequently replicated in other countries. The centers have also served as training facilities for health care workers throughout Mozambique.

Innovation: Integrated Services for Pregnant Women

The approach developed at the ICAP-supported model centers brought all services for HIV-positive pregnant women together under a single roof at antenatal care and PMTCT clinics.

- Antenatal care and routine services for maternal-child health—family planning and immunizations, HIV counseling and testing, PMTCT prophylaxis for preg-

nant women and infants, and HIV care services such as WHO staging and blood collection for CD4 testing—can all be obtained from the same provider.

- Provider-initiated counseling and testing and same-day CD4 testing have been integrated into a woman’s first antenatal visit.
- Integrating PMTCT with antenatal care serves to identify more HIV-positive pregnant women before delivery and to reduce the number of women lost to follow-up.
- The integrated service model eliminates referrals and wait times, enhances confidentiality and privacy, and enables the women to receive PMTCT services from the antenatal nurse with whom they had already established a relationship during pregnancy.

The integrated service model was rolled out from the model centers to most ICAP-supported PMTCT units, and the range of services included in the model has been further expanded.

ICAP has developed, piloted, and assisted in the rollout of a longitudinal patient register to improve follow-up of HIV-positive pregnant women and their infants as well as with a cohort monitoring tool to monitor quality of care and patient outcomes. The patient registers have been adopted by some DPS and some other PEPFAR implementing partners. Variations of the cohort follow-up tool have been used by WHO, UNICEF, and CDC Mozambique to evaluate PMTCT outcomes.

ICAP has used the cohort follow-up tool to evaluate efficacy of integrated approaches to introducing multidrug PMTCT prophylaxis at rural health facilities. One approach was to initiate the new prophylactic regime only; the other leveraged the opportunity to bring in integrated package of services to antenatal clinics to these facilities, including provider-initiated counseling and testing for women and their partners, screening for sexually transmitted infections, hemoglobin specimen collection, zidovudine plus single-dose nevirapine as prophylaxis (with follow-up), CD4 testing, and linkages to ART services. The integrated model proved more than twice as effective: 57% of eligible women received multidrug prophylaxis at facilities that introduced the comprehensive service package, compared to 25% where only zidovudine plus single-dose nevirapine was introduced.

TB/HIV Service Integration

Since 2004, ICAP is supporting TB/HIV collaborative activities at more than 60 health facilities, which have:

- Screened more than 100,000 HIV patients for TB
- Tested more than 12,000 TB patients for HIV
- Enrolled more than 4,000 TB patients in HIV care and treatment

Although 61% of TB patients in Mozambique are also infected with HIV,⁸ integration of TB and HIV services was limited before 2006. Since then, MISAU has promoted TB/HIV collaborative activities at facility level.

At the policy level, ICAP has participated in TB/HIV technical working groups and provided technical assistance to the national TB program in the preparation of guidelines, training materials, and monitoring tools. At district level, ICAP attends TB/HIV programmatic meetings with DPS and DDS and facilitated TB/HIV integration training. At facility level, ICAP has supported the rollout of TB/HIV collaborative activities and ICAP advisors make joint TB/HIV supervision visits. ICAP has ensured that infection control is a key consideration in planning renovations. ICAP supports infection control measures, including triage of TB suspects, cough hygiene presentations in waiting areas, and use of respirators, fans, and outdoor waiting areas.

Innovations in TB/HIV integration that ICAP has promoted at the health facilities it supports include:

- **A TB Screening Tool for HIV Patients:** In 2007, ICAP piloted a simplified TB screening tool at facilities in Nampula Province. Adopted by the DPS in Nampula and rolled out province-wide, the tool was subsequently disseminated nationally by MISAU.
- **Expansion of TB Screening:** ICAP is supporting expansion of TB screening at entry points other than HIV clinics, including antenatal and pediatric ART clinics.
- **Scale-Up of Isoniazid Preventive Therapy for HIV Patients:** After a pilot at Mavalane Hospital, retention to isoniazid preventive therapy and follow-up improved from

38% to 91% within six months. The model was gradually rolled out to 19 facilities in 2009 and 52 by 2011.

- **Comprehensive Service Model:** ICAP has enabled coinfecting patients to access HIV care and treatment at TB clinics, thus increasing and expediting enrollment of coinfecting patients in HIV care. The comprehensive service model has been expanded widely.
- **TB Screening for Pregnant Women and Children Living with HIV:** ICAP has integrated TB screening for HIV-positive pregnant women and evaluation of children exposed to pulmonary TB into maternal and child health services.

Laboratory Support

Reliable, well-functioning laboratories are essential to high-quality HIV care and treatment services. ICAP has supported:

- **Policy and Guideline Development:** ICAP has supported the development and rollout of policy, guidelines, training curricula, and quality control tools, including algorithms for new equipment and diagnostic tests and a routine central/provincial laboratory workflow.
- **Upgrading of Health Facility Laboratories:** ICAP has renovated laboratories at 30 health facilities in the five supported provinces. In all, 54 laboratories receive ICAP technical support.
- **Training and Mentoring:** Laboratory advisors seconded by ICAP to DPS in Nampula, Inhambane, and Maputo City provide in-service training and supervision support to facility laboratory technicians.
- **Quality Control:** ICAP has linked the laboratories it supports with the national reference laboratory's external quality assurance program for TB, malaria, and HIV rapid testing.



A woman holds her baby outside of the pediatrics waiting area at an HIV clinic.

Adherence and Psychosocial Support

Retention in care and adherence to treatment are critical for achieving optimal outcomes of HIV care. ICAP supports a range of facility- and community-based initiatives including palliative care, psychosocial support, peer education, help with disclosure, positive prevention, community-level programs that promote understanding of HIV and reduce stigma, patient tracking and links to organizations in the community.

Important innovations supported by ICAP include the ART and adherence training curricula for psychologists and counselors. ICAP has worked closely with MISAU to develop guidelines, tools and registers for psychosocial support.

Peer Education

Since 2009, more than 1,200 individuals living with HIV working as volunteer peer educators at ICAP-supported health facilities have:

- Supported more than 45,000 patients in care and treatment
- Made over 65,000 home visits to HIV care and treatment patients

Volunteer patients with HIV, trained to work as peer educators at ICAP-supported HIV care facilities, help patients access the care and treatment they need; they make enrollment and follow-up visits less daunting and are ready to offer advice and empathy to patients with particular fears or problems or who find it stressful to visit a hospital or health center.

Peer educators also serve as patient representatives and attend multidisciplinary team meetings, and help organize support group meetings and gatherings known as positive teas, group pre-test and positive prevention counseling, and drama presentations to help patients to understand the services they will access.



ICAP psychosocial support technical advisor Dr Bibi Aly holds her safer-sex educators, João and Maria. Both dolls have tongues; João has a condom on his penis; and Maria has a vagina and a prosthetic abdomen with a baby inside.

“Health centers are not male-friendly, and men can feel out of place. So we have to open their minds—it’s a long process. Success comes when men see the benefit of getting involved—for instance, when they learn about nutrition and then buy vegetables and fruits. Peer educators motivate men to go with their wives to get tested for HIV and sensitize them in advance about positive and negative results.”

—Domingos Luis Bernardo, Coordinator, HOCOSIDA (Men Against AIDS)
ICAP/Pathfinder-supported community-based organization, Maputo City

Support Groups

ICAP-supported facilities have more than 30 active peer groups for adults on ART and for mothers in the PMTCT program or with children in pediatric ART; more than 1,000 patients participate every quarter.

ICAP trains and supports nurses to facilitate groups where HIV-positive mothers can learn together about growth monitoring to keep their children healthy. At infant feeding groups, for example, patients bring locally available food, and nurses teach them how to use it in the most nutritionally effective way.

Community Linkages

ICAP promotes a number of strategies to strengthen linkages between the health facilities it supports and the communities they serve.

- **Positive Teas:** These get-togethers, an ICAP innovation, promote community ownership of HIV care services. Each quarter, more than 5,000 patients attend a Cha Positivo, or “positive tea,” at one of 50 ICAP-supported health facilities. This type of event—ICAP’s first psychosocial support initiative in Mozambique—was developed to bring together facility staff, patients, and community members in a social setting where everyone feels free to voice their opinions, including people who might be inhibited in the context of a provider–patient relationship. Group discussions often address the root causes of nonattendance and nonadherence. Afterwards, tea and coffee are served, and staff, patients, and community members enjoy social time together.
- **Home Visits:** Peer educators conduct home visits to ART patients to help them with adherence challenges and to reengage those who have left care. Home visits give patients an opportunity to talk openly with another HIV-positive individual.
- **Patient Tracing:** Using information provided on patient consent forms at enrollment, peer educators phone defaulting patients—then visit, if phoning fails. This approach brings more than 1,000 patients back to treatment each quarter.

Partnerships with Civil Society

ICAP is partnering with community-based organizations to strengthen community ownership of and involvement with HIV services and help patients feel empowered and supported in pursuing their own health. Peer educators from these organizations conduct home visits and trace patients who have left treatment; sensitize community leaders and local councils about stigma and disclosure; and conduct community health promotion activities. Via a partnership with Pathfinder International, ICAP provides these community organizations with technical and management capacity building as well as support for mobilizing resources and developing income-generating projects.

Nutritional Support

ICAP actively provides assistance to the national nutritional support program for people living with HIV, initially focusing on children only and now including malnourished adults, including pregnant women.

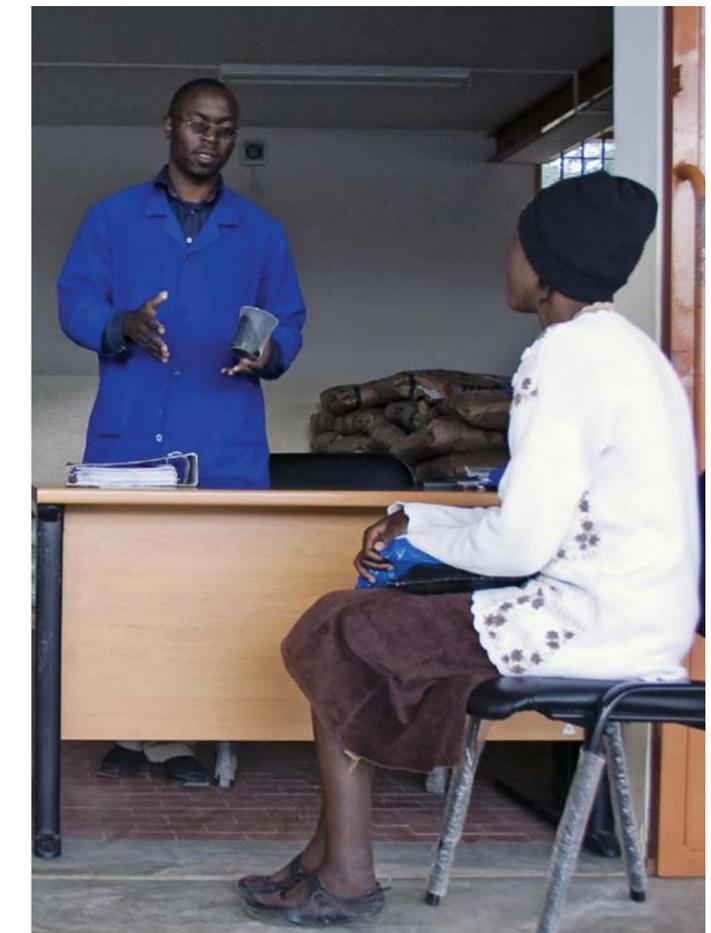
Under-five and HIV clinics identify at-risk children and moderately malnourished adults. They receive corn–soy blend (from the World Food Program); those who are severely malnourished receive sachets of the peanut paste PlumpyNut®, a ready-to-use therapeutic food. ICAP’s technical and logistical support has included:

- **Guideline Development:** ICAP has provided technical input into the development of the pediatric nutritional support guidelines and the associated training manual and provider tools.
- **Training:** ICAP has participated in national training-of-trainers workshops, province-level trainings, and training and mentoring of providers at ICAP-supported facilities.
- **Rollout:** ICAP has monitored implementation of the pediatric nutritional support guidelines and has developed strategies to overcome challenges.
- **Material Support:** Pediatric scales and meters, job aids, and registers for nutritional assessment and treatment/supplementation have been provided by ICAP.

“Consultation and waiting areas must be well ventilated, and TB units must be situated away from the most populated part of a facility. Small details and minor renovations can make a big difference to patient flow, and it is critical that patients feel comfortable and in control.”

—Dr Josué Lima, ICAP Mozambique Director (2004-2011)

A nutrition counselor discusses tips on hand washing, potable water, and nutrition with a client at the Integrated Center for HIV Care and Treatment.



“ICAP provided doctors who were the first to provide training in care and treatment. Now Mozambican doctors are the trainers, and we have trained people from across the country. Where there are new guidelines, ICAP acts quickly so that MISAU can roll out improvements right away. The benefit is there for the whole system and for all patients.”

—Dr Alice Magaia de Abreau, Chief Medical Officer,
Maputo City Health Directorate



Building Skills and Strengthening Systems

ICAP’s partnership with MISAU has enabled the human and systems capacity building required at all levels to deliver and manage high-quality HIV prevention, care, and treatment services.

Focus on Quality

ICAP participates in MISAU Quality Improvement Technical Working Group, supporting rollout of the national continuous quality improvement strategy. ICAP has contributed to the development and dissemination of service guidelines and indicators for HIVQual, the national standards-based quality improvement tool. ICAP has also supported the ART management committees at provincial, district, and facility level; and helped create mechanisms to facilitate information flow among these three levels.

ICAP is also providing direct support to providers and teams, utilizing quality assessment tools and through participative, data-driven quality improvement planning. ICAP has also worked with DPS to develop and implement solutions to particular service quality challenges:

- Establishing monitoring mechanisms at facility level to improve quality control of HIV rapid testing, data recording, patient follow-up, CD4 sample collection, transportation, and result notification
- Reducing loss to follow-up by strengthening facility linkages between primary health care services and ART and by tracing patients who miss appointments

Infrastructure

In 2004, few of Mozambique’s public-sector health facilities had adequate physical infrastructure to deliver comprehensive HIV prevention, care, and treatment services. Infrastructure enhancements have equipped all supported facilities to handle higher patient volume and confidential HIV services with such features as adequate seating in waiting areas, child-friendly corners, well-signed laboratories and pharmacies, and private access to HIV testing and treatment services. Equipment and furnishings have been installed at all 72 supported facilities, and, in some cases, prefabricated structures have been installed to expand capacity. With the absorption of ART units into general outpatient services, integration of PMTCT into antenatal clinics, and integration of TB and HIV services, all patients have benefited from the improvements. ICAP civil engineers work jointly with MISAU and DPS infrastructure technical offices to assess facilities and to plan and monitor renovations.

Early on, extensive renovation work began at four facilities, including the Mavalane Hospital in Maputo City. In 2005, an existing space—a formerly derelict section of the hospital laundry—was quickly adapted to establish the minimum conditions necessary to begin enrolling patients. At the same time, a structure adequate for providing services over the medium and long term was created. The same two-prong approach was subsequently replicated at many other ICAP-supported facilities.

Clinical Systems Mentorship

Clinical Systems Mentorship (CSM) is an approach to empowering health facility teams to improve the quality of HIV services. ICAP advisors apply CSM to deliver a comprehensive package of skills and systems building that standardizes best practices, adapted to the needs of each supported facility, to build the capacity of:

- All health care workers to deliver quality services
- Multidisciplinary teams to coordinate services
- Health facilities to implement the systems, policies, and procedures to manage services
- DDS and DPS to oversee services, ensuring that they are delivered in line with national quality standards

CSM includes two participatory tools for managing the quality of HIV services, to foster collaboration and ownership among

health facility teams; facilities are assessed for their models of care to ensure that they have the essential elements of good HIV care available at baseline, and annually thereafter; and standards of care assessments through chart review to identify the percent of patients receiving the essential components of HIV care. This ongoing assessment process fosters a culture of continuous quality improvement, involving providers in data collection, analysis of results, and quality improvement planning.

Training

Building the human capacity needed to scale up high quality prevention, care, and treatment for HIV patients is key to the national rollout strategy. ICAP has been a major contributor to this training effort, including to the curriculum development for ART. Since 2004, ICAP has delivered almost 1,000 training courses for staff at supported health facilities.





A peer educator measures a client's height and weight.

In-Service Training

ICAP specialists deliver formal in-service training to build clinical and nonclinical skills at provincial, district, and health facility levels. At each new ART or PMTCT service facility, team-building trainings are also conducted, to ensure that all staff members understand the integrated model of care, linkages, good data management, collaboration, and communication to ensure good patient management.

In-service training has continued with expansion in the numbers of supported facilities and to address staff turnover; it is complemented by general refresher trainings and dissemination of new guidelines and tools. The first trainings were delivered by ICAP alone; as training capacity was enhanced within the DPS, trainings have been co-facilitated with DPS.

ICAP has supported a wide range of in-service trainings, including on adult ART, pediatric ART and follow-up of HEI-exposed infants, treatment of opportunistic infections, PMTCT, TB and HIV co-treatment and service integration, HIV counseling and testing, pharmaceutical management, laboratory testing, adherence and psychosocial support, peer education, positive prevention, nutrition, service and quality management, and monitoring and evaluation.

Pre-Service Training

Human resources for health shortages continue to constrain expansion of HIV and other health services. In support of national strategies to increase the number of trained health professionals, ICAP has supported cohorts of students at the Health Sciences Institutes in Maputo, Nampula, and Inhambane, HIV training for 2½-year general nursing, maternal-child health nursing, clinical officer, and pharmacy technician courses, with capacity for 30 students per course. The first cohorts of students have begun to graduate.

PMTCT Model Centers

ICAP established regional PMTCT training centers at José Macamo Hospital in Maputo and 25 September Health Center in Nampula to provide hands-on training for the maternal-child health nurses, who are key to achieving national PMTCT expansion goals and operationalizing the decentralization

strategy for PMTCT. Maternal-child health nurses are trained to be trainers and mentors; and they then host maternal-child health nurses from peripheral health facilities for a two-week theoretical and practical training. Follow-up support is provided by ICAP and government staff, through refresher trainings and Clinical Systems Mentorship.

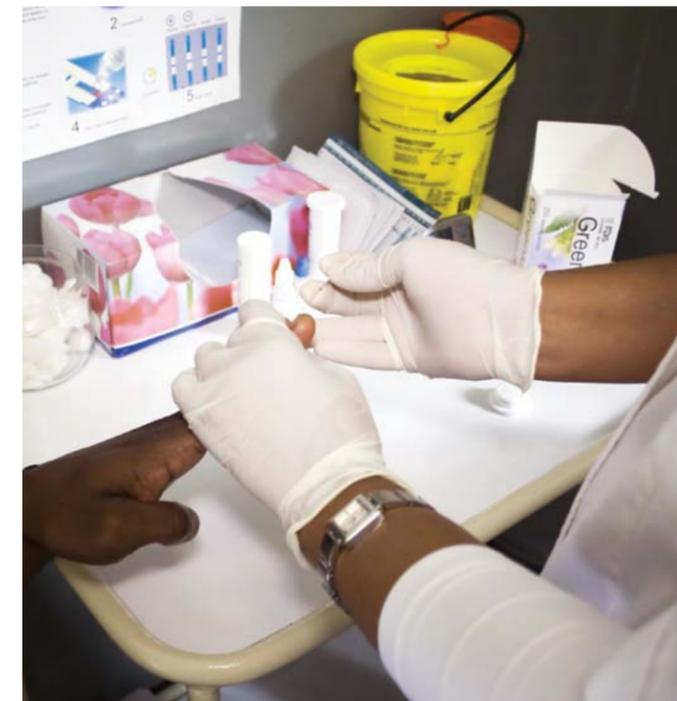
Support for Task Shifting

ICAP has supported national task-shifting initiatives to empower clinical officers and maternal-child health nurses to take on additional responsibilities in delivering HIV services.

A key MISAU strategy to mitigate the impact of the physician shortage is to train clinical officers to prescribe ART. The trainer-mentors of these clinical officers have evolved into a cadre that can disseminate clinical updates and skills. ICAP has advocated for policy change to allow task shifting and has participated in the creation of a competency-based ART curriculum with training materials as well as in in-service training for existing clinical officers, and ICAP staff have served as trainer-mentors.

Since 2006, government policy has authorized nurses in antenatal clinics to prescribe complex PMTCT regimens. ICAP has provided in-service training, technical updates, quality monitoring, and continuous mentoring support to all maternal-child health nurses at supported facilities to enable them to manage uncomplicated HIV care within antenatal clinics, to identify eligible women for ART, and to prescribe multidrug PMTCT prophylaxis. Training all maternal-child health nurses in PMTCT has promoted service integration and ensured continuity of services, and mitigates the impact of staff turnover.

ICAP maternal-child health officers have provided direct mentoring support and helped integrate maternal-child health nurses into ART clinic teams, where they can benefit from continuous mentoring by ART clinicians. Mentoring through participatory quality assessments and discussion of quality of care data at ART committees has also helped build the capacity of nurses prescribing ART.



A nurse provides voluntary counseling and testing services including HIV antibody testing.

Promoting Maternal-Child Health Service Integration Through Mentorship

From maternal-child health nurses at the main urban and rural ICAP-supported antenatal clinics—as a result of ICAP's training and mentorship program—pregnant women can now access a comprehensive range of HIV services:

- HIV counseling and testing for herself and her partner
- Blood collection for syphilis and hemoglobin screening
- CD4 count testing
- Screening for TB
- Evaluation of eligibility for ongoing ART based on CD4 count and WHO staging criteria
- Antiretroviral drugs for PMTCT prophylaxis
- Cotrimoxazole prophylaxis
- Advice on adherence, infant feeding, and positive prevention
- Malaria prophylaxis



A family receives counseling.

ICAP has supported the establishment of a new NGO, the Center for Collaboration in Health (CCS) and has built its capacity to provide focused technical assistance to the government of Mozambique for a broad range of comprehensive HIV-related clinical services provided at different levels of service delivery.

Monitoring and Evaluation

Strengthening Information Systems

At the health facility level, ICAP clinical advisors and monitoring and evaluation officers work with providers to improve accuracy and completeness in data recording and reporting. With routine data quality assessments and feedback to teams at supported facilities, ICAP is building the capacity of facility staff.

An ICAP-developed electronic patient-level database for HIV care and treatment services, the Electronic Patient Tracking System facilitates data-driven decision-making and quality improvement planning at 45 high-volume ICAP-supported facilities. This database contains records of more than 235,000 patients, generates automated reports for quantitative

monitoring and reporting, and is used at facility level to improve case management, track referrals, and trace defaulting patients. The EPTS facilitates information flow and improves the quality and availability of data for program monitoring and evaluation. At the national level, an ICAP monitoring and evaluation specialist seconded to MISAU has facilitated data quality assessment and the development and implementation of a strategic plan for health information systems. ICAP is a partner in the MISAU working group developing a strategy to harmonize the various patient information systems in use.

Public Health Evaluations

ICAP's portfolio of evaluations in Mozambique is designed to answer questions of interest to MISAU and its care and treatment partners regarding quality improvement in HIV-related programs.

- **Optimal Models:** This study uses routinely collected patient-level care and treatment and TB/HIV integration data, along with information on facility and program characteristics, to identify effective approaches and strategies for HIV service implementation.
- **Sentinel Cohorts:** The study characterizes the clinical, immunologic, and virologic characteristics and program outcomes among 1,200 adult patients enrolled in HIV care and programs.
- **PMTCT Evaluation:** This two-component evaluation assesses enablers and barriers to maternal and infant initiation and adherence to more-efficacious complex PMTCT regimens.

Through implementation of these research studies, ICAP is contributing to the expansion of research skills among the Mozambican public health workforce.

Transition

Since 2004, ICAP has built the capacity of DPS and DDS to manage the quality of HIV and related services at facility level, transferring skills and responsibilities for clinical training and for financial and logistics management from ICAP to DPS staff. The pace of training, mentorship, and institutional capacity building has intensified based on tailored institutional strengthening plans. ICAP advisors are training and mentoring DPS staff in financial planning, management, and reporting so they can manage international donor funds. ICAP provides training and mentoring to DDS finance and administrative staff. Through joint project planning and management, ICAP is building DPS capacity to manage infrastructure enhancements.

In addition to building government sector capacity, a need was identified for a strong local nongovernmental entity to house technical and operational expertise in HIV prevention, care, and treatment. ICAP has supported the establishment of a new NGO, the Center for Collaboration in Health (CCS) and has built its capacity to provide focused technical assistance to the government of Mozambique for a broad range of comprehensive HIV-related clinical services provided at different levels of service delivery.

CCS was legally registered in late 2010 and its leadership recruited in early 2011, and ICAP's objectives have been to increase the capacity of CCS financial, administrative, logistical, and monitoring systems capable of managing donor grants independently. CCS has assumed responsibility for day-to-day operational support to providers, teams, and health facilities in Maputo City and Inhambane Province. CCS was recently provided direct funding through a prime award from CDC. In 2012, CCS operations will expand to Nampula. ICAP is supporting the transfer of institutional relationships and continues to provide technical support to DDS and DPS where CCS has assumed facility-level support activities.

THE NEXT CHAPTER

Lessons Learned 2004–2012

As ICAP technical support in Mozambique has expanded, numerous lessons have been learned and guided program modifications. Lessons include:

Innovating Through Pilot Programs

Pilot projects offer an opportunity to experiment and identify what works and what does not. Formal evaluation and lessons learned help maximize efficiency and effectiveness when new initiatives are scaled up and can guide policy and guidelines development.

Task Shifting

Shifting care and treatment of HIV patients to clinical officers and nurses is not only feasible but also critical to the expansion of HIV care and treatment services in settings where population-per-doctor ratios are high.

Service Integration

Integrating HIV and related service enables patients to access multiple services from one provider in one visit and improves uptake of and adherence to HIV services, reduces loss of patients during referral or transfer, strengthens relationships between patients and providers, and promotes a family-focused approach. At ICAP-supported facilities, antenatal care, HIV counseling and testing, PMTCT, early infant diagnosis, at-risk child consultations, HIV-exposed infant follow-up, ART, and nutritional support services have been integrated in maternal-child health units, and HIV and TB diagnosis, treatment, and follow-up are integrated.

Engaging People Living with HIV in Service Delivery

Retention and adherence remain key challenges for achieving best outcomes in HIV care. Reasons for defaulting on treatment are individual and multifaceted and a holistic approach to care and treatment that addresses patients' emotional needs and social and environmental barriers to enrolling in treatment or continuing it is essential. Simple telephone calls or home visits from peer educators who are themselves in HIV care can break down complex or even seemingly insurmountable barriers to retention and adherence.

Enhancing Health Facility Infrastructure

Renovating and expanding health facilities, upgrading laboratories, and enhancing data, referral, and quality management systems are critical to HIV care. Maternal-child health, TB, cancer, laboratory, pharmacy, and reception services infrastructure enhancements carried out by ICAP at 72 health facilities.

Decentralization of HIV Services

Valuable lessons were learned from the early challenges of decentralizing adult ART services from hospitals to health centers—and subsequently applied to decentralization of both adult and pediatric ART. Transfer forms, decentralization meetings, and facilitated data flow have helped to make referral mechanisms more robust. Peer educators played an important role in decentralization, undertaking home visits to patients lost to follow-up and reassuring them about service availability and quality at health centers.



ICAP will work with policy makers, managers, and providers at all levels to identify ongoing and emerging needs and to deliver technical and systems support, training, and mentorship.



Moving Forward in Mozambique

Remarkable progress in expanding access to HIV services has been achieved over the past eight years, thanks to the vision of the government of Mozambique, the support of PEPFAR, the efforts of many other partners, the openness of providers to new approaches, and the commitment of people living with HIV to supporting and mentoring their peers. ICAP has made substantial contributions to the scale-up, integration, and decentralization of HIV prevention, care, and treatment services. ICAP will reinforce the gains made to date through further skills and systems-strengthening support, in order to build sustainable capacity.

As an ongoing PEPFAR partner in Mozambique, ICAP will work with policy makers, managers, and providers at all levels to identify ongoing and emerging needs and to deliver technical and systems support, training, and mentorship. This work will include:

- Collaborating closely with MISAU at national level to assist in the adoption, adaptation, and dissemination of new technologies and guidelines in HIV care and treatment
- Providing technical and management capacity building support to DPS and DDS, as well as to CCS
- Developing new and innovative approaches to service delivery and patient support
- Evaluating effectiveness of care and treatment models and new initiatives, for patients and the health system, and regarding the broader benefit of these models and initiatives to families and communities
- A continued focus on data quality improvement and on the value of using data for continuous quality improvement among teams providing and managing HIV prevention, care, and treatment services



A consultation in the HIV care and treatment center.

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