ERITREA FINAL REPORT

September 1999–September 2005

USAID'S IMPLEMENTING AIDS PREVENTION AND CARE (IMPACT) PROJECT

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Family Health International

Impact Implementing AIDS Prevention and Care Project












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by Family Health International

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CONTENTS

ABBREVIATIONS

AIDS	Acquired immune deficiency syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral drugs
BCC	Behavior change communication
BIDHO	Association of people living with HIV/AIDS
BSS	Behavioral surveillance survey
CBO	Community-based organization
CSW	Commercial sex worker
EDF	Eritrean Defense Force
EFE	Eritrean Federation of Employees
ESMG	Eritrean Social Marketing Group
FHI	Family Health International
FY	Fiscal year
GFATM	Global Fund for AIDS, Tuberculosis and Malaria
HAMSET	HIV/AIDS, Malaria, STD and TB Project (World Bank funded)
HCBC	Home and community-based care
HCD	Human capacity development
HIV	Human immunodeficiency virus
IEC	Information, education, and communication
KAPC	Kenya Association of Professional Counselors
MOH	Ministry of Health (Eritrea)
NACP	National HIV/AIDS Control Program
MOTC	Ministry of Transportation and Communication
NATCoD	National HIV/AIDS/STI & TB Control Division
NGO	Nongovernmental organization
PE	Peer education/Peer educator
PLHA	People living with HIV/AIDS
PMTCT	Prevention of mother-to-child transmission
STD	Sexually transmitted disease
STI	Sexually transmitted infection
TB	Tuberculosis
TOT	Training of trainers
UNAIDS	Joint United Nations Program on HIV/AIDS
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing

Executive Summary

From September 1999 to September 2005, the Implementing AIDS Prevention and Care (IMPACT) Project of Family Health International (FHI) supported a wide range of capacity building and technical assistance activities in Eritrea to strengthen its national response to the HIV epidemic.

During this period, the US Agency for International Development (USAID) mission in Eritrea committed a total of $4.759 million in field support funds to IMPACT/Eritrea for activities that would help meet objectives and produce results. In particular, the Eritrea funds were to facilitate "increased use of priority primary health and HIV/AIDS services and improved practices" (Strategic Objective 4), and produce "increased quality and demand for HIV/AIDS prevention services" (Intermediate Result 4).

In support of USAID/Eritrea's strategic framework, the overall goal of IMPACT/Eritrea was to strengthen the capacity of the Ministry of Health (MOH) to prevent, control, and mitigate the impact of the HIV/AIDS epidemic in Eritrean communities. IMPACT collaborated with several partners, including PATH and the Eritrean Social Marketing Group (ESMG), throughout the life of the project to meet these goals.

The primary focus of the IMPACT strategy was on building the capacity of local counterparts, particularly staff at the MOH National HIV/AIDS/STI and TB Control Division (NATCoD, formerly known as the National AIDS Control Program) and various relevant agencies. This strategy allowed IMPACT to complement the activities of others working on HIV/AIDS in Eritrea and follow a participatory approach. IMPACT activities supported the MOH/NATCoD in implementing a solid, well-coordinated, state-of-the-art HIV/AIDS program. In terms of achievements, IMPACT strengthened and improved

- targeted behavior change interventions
- voluntary counseling and testing services
- STI case management
- targeted interventions for high-risk groups
- care and support services, including home and community-based care, and HIV clinical care and treatment
- strategic planning, monitoring, evaluation and surveillance capacities and systems

IMPACT/Eritrea provided leadership, mentoring, partnership, capacity building and technical contributions that strengthened the capacity of managers, staff, and institutions to provide up-to-date responses to the HIV epidemic and helped them implement best practices.

IMPACT/Eritrea also provided technical assistance to the Government of Eritrea as it prepared proposals for the Global Fund for AIDS, Tuberculosis and Malaria (GFATM). When a proposal was approved for Round 3 GFATM funding, IMPACT personnel helped the government plan and implement the resulting project. Overall, the project was successful at building capacity within the MOH/NATCoD and also met the other defined objectives of assisting in initiation and expansion of services, and developing systems and documentation across a range of interventions.

Although the United States provided substantial assistance to Eritrea, in 2005 the Eritrean government requested that USAID cease operations in the country. As IMPACT was a US government-funded project, activities were halted and the project closed out early. At the Eritrea government's request, the United States no longer provides bilateral development assistance to Eritrea.

Program Context, Objectives, and Strategies

Brief History

At the request of USAID/Eritrea and the country's health ministry, IMPACT initiated activity in Eritrea in 2000. During the design phase of the program, IMPACT undertook a situational and response analysis and held consultations with key stakeholders, including representatives from USAID/Eritrea, the MOH, Population Services International's Eritrean Social Marketing Group (ESMG), UNAIDS, UNICEF, the Family Planning Service Expansion and Technical Support Project and the World Bank. IMPACT subsequently prepared (and had approved) a work plan that called for focused technical assistance that would enable the MOH/National HIV/AIDS Control Program (now NATCoD) to manage the implementation of a comprehensive package of HIV/AIDS prevention, control and mitigation activities.

Beginning in 2001, IMPACT provided technical assistance and capacity building in HIV/AIDS programming to the MOH/NACP and other technical divisions. At the request of USAID/Eritrea and the MOH, the IMPACT program did not support on-the-ground implementation of services. Instead, it provided technical and program management skills and advice. These took the form of technical meetings and ongoing consultation, training workshops, study tours, and participation at regional/international conferences and courses.

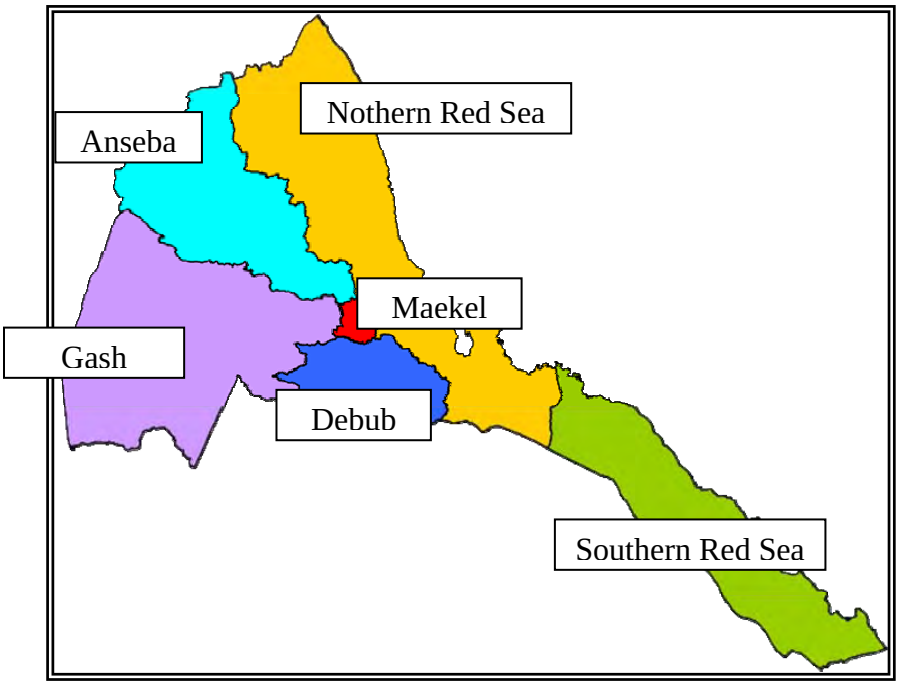
During the early phase of the program, IMPACT/Eritrea assistance came as direct technical input from the country director, intensive short-term technical help from outside experts, and/or support for skill-building activities in various technical and program management areas. A major effort went into the key prevention interventions of behavioral change communication (BCC)—especially messages about the relevance of sexually transmitted infections (STI)—and voluntary counseling and testing (VCT). Strategic planning, surveillance, and monitoring and evaluation were crosscutting concerns also receiving attention at this stage. Finally, in response to specific requests from the MOH/NACP, IMPACT/Eritrea provided technical assistance in the areas of care and support. These efforts drew upon the project's comparative advantage in technical quality and leadership and built on its close collaboration with the MOH, other USAID-funded cooperating agencies, and international/bilateral donors.

Two years into the program, in 2003, NATCoD was created. IMPACT conducted a comprehensive review of its Eritrea country program, to assess how well the original strategy was being implemented, the roles of other donors, and operational realities. They looked into the question of how well the program was responding to USAID/Eritrea needs and strategic objectives, and took a close look at its strengths and weaknesses from the perspective of stakeholders. The review determined that IMPACT was achieving its original objective in providing useful, valued and popular technical support to the MOH/NATCoD in the areas that had been identified as needing assistance.

While the program was generally on course in terms of implementing a technical support package within Eritrea, progress was uneven in various areas. As a result, the team recommended IMPACT/Eritrea hire three additional long-term technical advisors. The priority areas for their effort were monitoring and evaluation; management; STI prevention, treatment

and advocacy (especially with sex workers and military personnel); and VCT. In the end, IMPACT/Eritrea hired two advisors, one to strengthen monitoring and evaluation and strategic planning, and the other to focus on VCT and community-based care.

Country Context



Eritrea, with an estimated local population of 3.6 million, became Africa's youngest nation in 1993 after a 30 year liberation struggle against Ethiopia. One of the world's poorest countries, Eritrea faces complex challenges in responding to the epidemic. The gross national product (GNP) per capita is only $170, and approximately 60–70 percent of the population lives below the poverty line. The epidemic has unfolded in the midst of conflict caused by the protracted liberation struggle and the more recent (1998–2000) border conflict with Ethiopia. Thousands of citizens still live as refugees and a large proportion (an estimated 80 percent) of the young and productive work force has been mobilized into national and military service. These factors combined with scarce human resources and limited capacity and financial resources in the public health sector challenge the country's ability to mount a rapid and expanded response to the epidemic.

HIV/AIDS in Eritrea

Eritrea's first case of AIDS was reported in 1988 and more than 17,000 cases have since been reported to the MOH. According to epidemiological data from the MOH 2003 HIV antenatal sentinel surveillance, the estimated HIV infection rate is 2.4 percent in the general adult population. However, the estimated rates vary considerably

2003 ANC Sentinel Surveillance, 2003

- Overall HIV infection rate <3%
  - Known groups with higher rates: sex workers, the military, and urban dwellers
- Hot spots
  - Geographic: Assab (7%) and Asmara (4%)
  - Demographic: 15–24 years old, never married, urban women (7.5%)
- Risk groups
  - Unmarried women
  - Women who are partners of drivers, merchants and military or national servicemen

among the nation's geographic and demographic groups, with a high of 7.2 percent in the Southern Red Sea Zone and low of 1.1 percent in Debub. Although the estimated national HIV prevalence rate is relatively low, Eritrea is considered to have a generalized epidemic, with rates of nearly 20 percent among population groups such as commercial sex workers. Of equal concern is the risk of rapid spread of the epidemic due to poverty, population mobility, and the weakening of traditional societal controls.

Government Response

The Government of Eritrea recognized the threat posed by HIV/AIDS early on. Within the MOH, it formed the National AIDS Control Program (NACP) in 1992, the year before official independence. However, while the NACP supported efforts in response to the threat of HIV/AIDS, it was not until 1997 that Eritrea developed its first five-year HIV/AIDS strategic plan and the response started to become more systematic. Over the next few years, the country implemented a prevention program that included condom social marketing and HIV/AIDS awareness. The efforts were effective in that the *Abusalama* brand condom became well known in Eritrea and awareness of HIV/AIDS became widespread. In 2001, the Government of Eritrea and the World Bank initiated a $40 million HIV/AIDS, Malaria, STIs and Tuberculosis Project (HAMSET) to reduce the economic, social and health burden caused by these diseases. The initiation of the HAMSET project showed the government's commitment and is recognized as a turning point in Eritrea's response.

The second five-year HIV/AIDS strategic plan started in 2003. This corresponded with a restructuring of the MOH that included expanding and upgrading the NACP into the National HIV/AIDS/STI and Tuberculosis Control Division (NATCoD). The strategy, while it continued previous prevention efforts, also articulated a clinical care and antiretroviral drugs (ARV) strategy for people living with HIV/AIDS (PLHA).

Nongovernmental Organizations in Eritrea

Since the beginning of the IMPACT Project, Eritrea has gradually changed its relations with the aid community, emphasizing the need for self-reliance. According to the Eritrean Development Foundation, the country's aid policy comes from a strong desire to foster a sense of responsibility for the country's future among its citizens and to avoid dependence.

Legislation regulating the activities of nongovernmental organizations (NGOs) was put into effect in June 2005, requiring them to pay taxes on imported materials, renew their licenses annually, and maintain a set amount of operating capital ($1 million for local NGOs and $2 million for international NGOs). In July 2005, the Eritrea government requested that USAID cease operations in the country. As a result, IMPACT activities were halted and the project closed out early. Since mid-2005, the number of NGOs working in the country has dropped significantly.

Goal, Objectives, and Strategies of IMPACT/Eritrea

The overall goal of the IMPACT program in Eritrea was to strengthen the capacity of the MOH/NATCoD to prevent, control and mitigate the impact of the HIV/AIDS epidemic in the country. This goal supported the USAID/Eritrea strategy of investing funds to facilitate "increased use of priority primary health and HIV/AIDS services and improved practices" (Strategic Objective 4), and produce "increased quality and demand for HIV/AIDS prevention services" (Intermediate Result 4).

The IMPACT/Eritrea strategy focused on capacity building. It therefore complemented the on-going activities of other agencies and organizations working on HIV/AIDS in Eritrea and incorporated a participatory approach to working in the country. In particular, IMPACT set out to strengthen and improve

- targeted behavior change interventions
- voluntary counseling and testing services
- STI case management
- targeted interventions for high-risk groups
- care and support services, including home and community-based care, and HIV clinical care and treatment
- strategic planning, monitoring, evaluation and surveillance capacities and systems

Behavior Change and Communication (BCC)

The objectives of the BCC component were to

- assist the Government of Eritrea in implementing a full-scale BCC strategy, reaching primary audiences and using multifaceted methodologies and media
- upgrade the skills and knowledge of those who implement BCC interventions to maximize effectiveness
- increase awareness, knowledge and understanding of risks of HIV among target groups and encourage changes in behavior that reduce risk or exposure
- increase VCT-seeking and HIV/AIDS/STI care-seeking behaviors

PATH was the lead IMPACT/Eritrea partner helping with the BCC component.

In cooperation with the MOH, IMPACT/Eritrea made a formative needs assessment by conducting focus group discussions with representatives of high-risk populations. It subsequently (May 2001) supported a five-day national workshop involving 45 stakeholders to develop an HIV/AIDS strategy. Based on the assessment, the stakeholders made the following recommendations, which later defined the strategy:

- Reinforce and share correct information about HIV and AIDS.
- Improve condom negotiation skills and promote correct and consistent condom use.
- Encourage frank discussion of HIV infection and sexual health.
- Design innovative communication strategies that use the creative talent of Eritrean nationals.

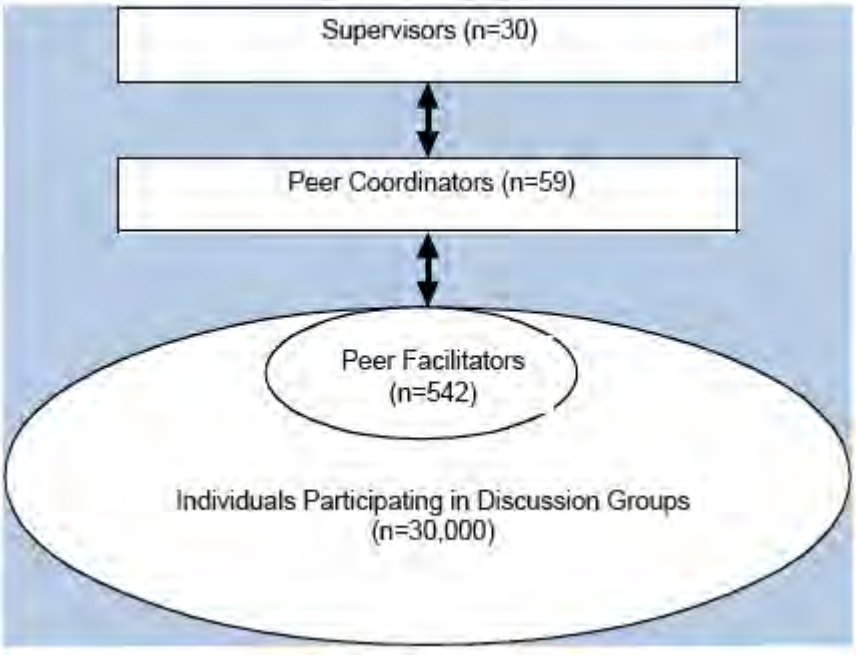
- Build local capacity to create demand for and provide quality VCT services.
- Use testimonials to show the face of the epidemic.

The MOH/NATCoD and IMPACT/Eritrea developed a national HIV/AIDS BCC strategy called "Winning Through Caring." Implemented by the MOH and local partners, it was designed specifically to address the recommendations. It was implemented in 15 communities throughout the six *zobas* (political zones) of Eritrea. The primary audiences were youth (both in and out of school), workers, members of women's groups, health workers (including community health workers), military men and women, commercial sex workers (CSWs), and PLHA. The strategy also identified secondary audiences, groups of people who could directly affect prevention efforts by influencing behavior of the primary at-risk groups. These secondary audiences included religious leaders, teachers and business leaders, and plans were also developed to reach them.

Through both short-term technical assistance and long-term access to an in-country technical advisor, IMPACT/Eritrea provided the technical assistance to both the MOH and local organizations that made it possible to implement their Winning Through Caring strategy. Its capacity-building approach encouraged training MOH personnel, community volunteers, and mentoring staff.

Other activities supported by IMPACT/Eritrea included training MOH and partner ministries' staff, and other key stakeholders, to improve their understanding of HIV/AIDS, and their proficiency in BCC skills; proposal-writing workshops to help local organizations access funds for BCC activities; development and translation of peer facilitators' guides and discussion guides; and an assessment of the capacity of the local media. Several study tours were also sponsored under the umbrella of BCC activities. One was a visit by program implementers to Kenya to learn about the IMPACT/Eritrea project and attend a peer-coordinator training workshop in Nakuru. Eritrean stakeholders also visited Kenya on a study tour to learn about HIV prevention projects for CSWs.

The strategy was launched in 15 model communities, in six zobas selected on the basis of population, HIV prevalence, presence of target populations, availability of services, presence of partners who can support BCC activities, presence of local resources, and potential for the spread of HIV. In each model community peer-facilitated discussion groups formed (see diagram). IMPACT/Eritrea worked



with many partners in the 15 model communities, and with as many as 13 target audiences. After conducting a social network analysis, the partners decided to group members of the target audiences into parties working together for common purposes, or "clusters." The table below shows the clusters formed. This was a very good idea: working in clusters allowed for greater synergy, economies of scale, more coordinated efforts, and richer inputs through broader expertise. In addition, by working in clusters, the whole country of Eritrea benefited from joint planning and programming especially in the areas of training, mass media and materials development.

Cluster	Partners	Audience
1	Ministry of Labor and Human Welfare, EDF, Ministry of Tourism, MOTC, NCEW, EFE, ESMG, MOH, BIDHO, Chamber of Commerce	Sex workers, truckers, military, workers
2	NUEYS, NEUW, MOE, ESMG, RHAE, FC, MOH, BIDHO	Youth, parents, teachers, women
3	MOLG, BIDHO, MOI, MOH, IFC	Administrators and senior government officials, business leaders, religious leaders
4	MOH, MOHLW, BIDHO, IFC	Health workers, social workers, PLHA

More than 30,000 people met in these discussion groups on a regular basis, either weekly or biweekly. The groups discussed issues related to HIV/AIDS that were relevant to their populations. Facilitators used tools such as storytelling and role playing in order to engage the discussion groups and encourage community interaction. It was expected that the MOH model communities would then serve as examples for the rest of the country and the activities could be replicated elsewhere.

The Eritrean Defense Force (EDF) was an important part of the IMPACT/Eritrea BCC program. Not only did EDF staff participate in the strategy development process, proposal-writing workshop, and training of peer education staff, they also, with IMPACT/Eritrea support, adapted the peer education materials for its BCC activities. IMPACT trained EDF staff as well, as part of the Winning Through Caring strategy. The EDF "soldier-to-soldier" program had more than 405 peer facilitators, coordinators, and supervisors reaching members of the EDF.

BCC activities also included the production of print materials with HIV prevention and care messages, flyers promoting VCT, and stickers with the project logo. IMPACT/Eritrea worked with the MOH to conduct a workshop with the goal of designing posters with culturally relevant messages and images. A series of posters was pre-tested and printed in 2004. The BCC strategy also incorporated different media, including participatory theater, for community-level

communication. Performers attended training workshops, to increase their knowledge of HIV, minimize stigmatization of PLHA, and learn how to articulate behavior change objectives through live performances. To bring issues and ideas to a larger population, they used radio broadcasts, even developing a radio serial drama. Strengthening community reach by communicating through a variety of media is an important part of what IMPACT/Eritrea has been able to accomplish over the life of the project.

The BCC strategy enjoyed widespread buy-in and support from all project partners. Altogether, BCC activities resulted in

1. increased capacity and skills of individuals to discuss openly various issues related to sexuality, STIs, and HIV/AIDS with their partners, peers and seniors
2. deeper understanding of the difference between exposure to HIV and infection by HIV
3. deeper understanding of the benefits of prompt treatment for STIs as a way of reducing vulnerability to HIV
4. increased understanding of and confidence in youth abstinence, fidelity, and condom use as options for preventing HIV infection
5. skills acquisition in negotiating safer sex and condom use between individuals
6. greater understanding of the benefits and importance of voluntary counseling and testing

High-Risk Group Interventions

Understanding the potential impact CSWs can have on the HIV/AIDS epidemic, the MOH and IMPACT/Eritrea understood the benefits of a program addressing the risks of HIV infection faced by sex workers. Their objective was to assist the government to develop and implement effective and appropriate targeted interventions for high-risk groups.

In May 2003, IMPACT/Eritrea sponsored a study tour to Kenya. Participants included representatives from the Communicable Disease Control and Health Promotion Units of the MOH, Ministry of Labor and Human Welfare, and the Church of Eritrea. They traveled to Kenya to strengthen understanding of HIV/AIDS activities in support of support sex workers. The tour included an opportunity to observe peer educators working at a CSW drop-in center.

Soon after, IMPACT/Eritrea and UNAIDS supported a review of CSW interventions. Their aim was a set of recommendations for improving activities supporting CSWs and a national approach to providing services for sex workers in Eritrea. The resulting recommendations included involving CSWs, clients, and stakeholders in the HAMSET project and coordinating efforts with other HAMSET partners to ensure approaches were complementary. Recommended activities included setting up a drop-in center in each zoba and reaching out to smaller villages. CSWs were also targeted for support through the Winning through Caring strategy.

STI Prevention and Treatment

IMPACT/Eritrea took a comprehensive approach to building the national capacity to prevent and treat STIs, with the objective of providing technical support for designing and implementing a national program that would increase awareness, prevention, and treatment of STIs.

To increase STI interventions, IMPACT/Eritrea supported a comprehensive assessment of the STI situation and translated the results into a strategy for a stronger STI program. The MOH benefited not only from having a plan in place but from the increased capacity of staff to plan and implement programs.

The strategy included developing a core group within the MOH that would support the STI syndromic management program, and providing technical assistance for training the core team and other healthcare providers in syndromic management of STIs. Altogether, this would promote adherence to syndromic management and strengthen the effort to document observations and assessments. In addition, STI interventions were to be closely linked with health promotion and prevention activities through targeted BCC.

IMPACT/Eritrea provided technical assistance to develop a core group within the MOH. They trained 33 physicians and eight nurse-counselors in syndromic management and comprehensive care and support of PLHA, and they sent two MOH officials to the University of Washington course on Principles of Research on AIDS and STD. IMPACT/Eritrea also supported MOH efforts to advocate for reducing risks of HIV and STI transmission in the context of sex work. Finally, IMPACT/Eritrea contributed technical assistance to the STI diagnosis and management sections of the Eritrean *HIV/AIDS Care, Counseling and Home-based Care Manual*.

Voluntary Counseling and Testing and Prevention of Mother-to-Child Transmission

IMPACT/Eritrea's support for national VCT activities was designed to assist the MOH/NATCoD to expand, improve, and manage VCT services to meet a nationwide demand. As well, they wanted to develop an integrated referral network for VCT services to make sure VCT functions would be an entry point for both prevention and care of HIV/AIDS.

Through assessments, design, and implementation, IMPACT/Eritrea's support moved the MOH VCT activities forward. Support began with a rapid assessment of the feasibility of scaling up VCT, carried out by a team from the MOH, FHI, and the USAID mission in September 2000.

With support from IMPACT/Eritrea, the MOH produced a work plan to expand VCT uptake based on the recommendations of the assessment team. The activities described in this work plan built upon existing services and were in line with the MOH National Strategic Plan, the World Bank HAMSET key priority areas, and other USAID supported HIV/AIDS activities in Eritrea. These included

- conducting workshops to sensitize ministry staff, hospital directors, physicians and nurses to the importance of counseling
- establishing a pool of competent counselors in key facilities, both physicians and nurses
- creating a specific counselor position with a job description focusing on full-time responsibility for undertaking counseling
- training a core group of counselors in more advanced counseling skills and to become a pool of national trainers

- revising the existing NACP 14-day counseling course to improve its pre- and post-test counseling components, testing process, commentary on counselors' self-awareness and referral processes
- creating an incentive and anti-burnout strategy for counselors
- initiating a double rapid testing regime to allow for same-day results.
- developing VCT KABP (knowledge/aptitudes/practices/behavior) and formative research on treatment-seeking behavior in order to inform directives on how to scale up VCT
- creating a referral directory of names and contact details for all services in the HIV/AIDS field, including the location and names of active counselors
- incorporating promotion of VCT/PMTCT in ongoing advocacy and community sensitization by the MOH and UNICEF
- expanding the effort to train new nurses and physicians, given that the general shortage of trained health personnel is a significant constraint
- developing a longer term plan for developing VCT and general counseling curriculum within the Institute of Health Science

Based on the recommendations, IMPACT/Eritrea supported the MOH/NATCoD in several areas, including development/strengthening of a core team of trainers to strengthen VCT training, revision of VCT related protocols and documentation, and strengthening of VCT service delivery.

One of their first activities was to support the MOH/NATCoD-identified need for a core team of trainers to support the VCT program. IMPACT/Eritrea conducted a refresher training course in VCT counseling for 30 counselors, six of whom were also sent to the AIDS Information Center in Uganda for a two-week advanced course on pre- and post-test counseling, and eight to the Kenya Association of Professional Counselors (KAPC) for a one-month intensive counseling certificate course. Over the life of IMPACT/Eritrea these trainers trained an additional 120 VCT counselors.

To support the work plan in the area of documentation, FHI/IMPACT helped the MOH/NATCoD revise the national counseling curriculum, develop a VCT module for the School of Nursing, develop a national HIV testing protocol, and develop a training of trainers (TOT) curriculum. Subsequently the MOH and IMPACT/Eritrea trained 16 counselors as trainers using the new curriculum. The MOH translated the national counseling curriculum into Tigrinya, and published and disseminated both English and Tigrinya versions. IMPACT/Eritrea also provided technical assistance in the development of the national HIV testing protocol, initiating on-site rapid HIV testing that permits same-day results through a double rapid test protocol. IMPACT/Eritrea also supported the design of a VCT brochure that was produced in English and three Eritrean languages and distributed to all the zobas.

In addition, IMPACT/Eritrea supported implementation of VCT services in Eritrea, starting with the development of the first standalone VCT site in the country, which opened in Asmara in 2002. In subsequent years IMPACT/Eritrea supported the establishment of an additional nine standalone sites and 73 sites in existing health facilities, all of which used the new streamlined protocol. Recent assistance included providing technical support through the training of

healthcare workers on integrating counseling and testing in the antenatal care setting and initiated preliminary activities for the formation of post-test clubs at several VCT centers.

Over the life of the IMPACT/Eritrea project, the capacity of the VCT program was strengthened. A management framework within the MOH/NATCoD emerged, including a VCT coordinator, the development and training of a core staff of VCT trainers and supervisors. Together, they ensure documentation and systems are in place. In addition, with support of IMPACT/Eritrea the MOH initiated 83 VCT sites (73 hospital-based and 10 freestanding), increasing access and availability of VCT services. IMPACT/Eritrea also supported communications and advocacy efforts that led to the high uptake of services.

To ensure that quality of counseling services was maintained, IMPACT/Eritrea worked with consultants from the Kenyan association of professional counselors to train supervisors from all zobas and establish a proper counselor support supervision system. Twelve counselor supervisors were trained to support other counselors in various tasks. They provided on-the-job training through the counselor meetings.

A set of national VCT guidelines had been previously developed but needed to reflect the paradigm shift from VCT to CT. Between 2004 and early 2005, the VCT advisor provided support to NATCoD for a review of the national VCT guidelines.

The technical assistance provided to the VCT program also strengthened prevention of mother-to-child transmission (PMTCT) activities in Eritrea. IMPACT/Eritrea acted in a direct way by undertaking or encouraging others to

- review and assess the PMTCT situation, which led to the development of an expansion plan for PMTCT
- encourage the Ministry of Health to include a section on mother-to-child transmission in the *Eritrean Manual on HIV/AIDS Care and Counseling*
- support the training of new PMTCT providers
- update the PMTCT policy, procedures, and systems to strengthen and increase access to PMTCT services
- initiate counseling and testing at 14 antenatal care clinics through the training of healthcare workers on integrating counseling and testing in the antenatal care setting and continuous technical assistance in quality improvement and training of health personnel for expansion of PMTCT

During the life of the project there were no ARVs in Eritrea and the MOH used the Nevirapine single-dose prophylaxis for PMTCT.

Care and Treatment

As care and support services became more prominent in Eritrea's response to HIV/AIDS, FHI/IMPACT worked with the MOH to define its needs and IMPACT support. There was support for both home- and community-based care (HCBC), and clinical care, including antiretroviral therapy (ART). IMPACT/Eritrea and the MOH decided to develop the capacity of

the MOH/NATCoD and other partners to address the care and support needs of PLHA, particularly in the provision of quality HCBC services.

For this, the initial step was to work with the MOH Care and Support Unit on an assessment of existing HCBC services, develop a plan for expansion and quality improvement, and undertake a consumer satisfaction study. Further, in an effort to introduce contemporary ideas and innovations for care and support to local players, IMPACT/Eritrea supported a study tour for members of a PLHA support group named BIDHO (Tigrinian for "challenge") to HCBC sites in Kenya and Uganda. IMPACT/Eritrea also served as technical reviewer for an HCBC manual and assisted the MOH in developing policies and procedures for the provision of HCBC to PLHA. The new policies included defining a minimum package of services and options for clients. IMPACT/Eritrea also supported the development and revision of reporting forms and systems, to improve monitoring and management of HCBC.

Toward the end of the project, IMPACT worked closely with the care and support office to lay the groundwork for a quality assurance and client satisfaction survey of home-based care, and helped the office (through a data management consultant) to analyze the information it brought in. The organization also helped the care and support office coordinate all the groups that were involved in providing care to PLHA—including Bidho and faith-based organizations from the Catholic, Orthodox, and Muslim communities—and helped them streamline their reporting. They linked the organizations formally to specific health facilities, and their members were trained in palliative care and adherence counseling so they could provide continuity of care to PLHA who would be put on ART.

Indeed, the MOH's expanding priorities for care and support for PLHA included ART. IMPACT/Eritrea helped the MOH/NATCoD to introduce HIV clinical care and treatment services, including ART, and to improve diagnosis and management of HIV and opportunistic infections. However, as IMPACT closed out just as the first wave of ARVs was expected to arrive in Eritrea, most of its ART activities were preparatory in nature.

IMPACT/Eritrea's support for care and treatment fell into several different files, including a program assessment, new and stronger documentation, training and human capacity development, and better service delivery. There was technical assistance for the drafting of policy documents, for clinical guidelines on how to provide ART, and for the review and update of guidelines for the prevention, screening, diagnosis, and management of opportunistic infections. This was followed by an assessment of ART/HIV clinical care services and a review of the readiness of country systems for new and expanded services. A review and update on clinical care, ART guidelines, and an implementation plan for introduction of ART were also implemented.

Human capacity development activities included, in preparation for the initiation of ART in 2005, training HCBC trainers and service providers about ART/HIV clinical care. There was also adherence training for health care providers and general technical assistance for skills-building of MOH clinician/master trainers that would develop the ministry's in-house capacity to provide and expand the delivery of advanced clinical care to PLHA. IMPACT/Eritrea also supported participation of four clinician/master trainers in a training with IMPACT/Kenya.

To facilitate initiation of ART service delivery, IMPACT/Eritrea supported site preparation, developed standardized operating procedures and clinical and reporting forms for the management of HIV/AIDS clinical care, and supported the development of the first print materials in Eritrea to support introduction of ARVs. IMPACT/Eritrea also helped the MOH to quantify and procure the ARVs needed for initiation of service delivery. Finally, IMPACT/Eritrea worked with the MOH to define the needs for a comprehensive approach to the development of an information system for patient care.

Strategic Planning, Monitoring, and Evaluation

Through short- and long-term technical assistance, the IMPACT/Eritrea project assisted the MOH in key areas of strategic planning, monitoring, and evaluation. The objective was to develop the technical capacity and systems within the ministry and partner communities, to provide technical leadership in advancing the national agenda related to HIV/AIDS/STI biological and behavioral surveillance, and to ensure that major planned activities had clear objectives and goals and that there was a plan for monitoring and evaluating them.

IMPACT/Eritrea provided technical assistance to the Ministry of Health that was the basis for evaluating and monitoring the country's HIV/AIDS/STI program. It also developed a plan for building local capacity in monitoring and evaluation. There was to be training and mentoring for staff from the MOH and other ministries, UN agencies and NGOs. Training would cover collecting data for monitoring and evaluation purposes, and how to use it for decisionmaking, advocacy, and program management.

IMPACT/Eritrea also developed a national monitoring and evaluation framework for the National Strategic Plan for HIV/AIDS/STIs and trained MOH staff in conceptual leadership for HIV/AIDS/STI. To improve monitoring and management of VCT and HCBC at the client and program levels, IMPACT/Eritrea helped fine tune reporting forms and systems. In addition, the assessments and planning exercises in various technical areas were also capacity-building exercises, with local participants learning assessment techniques, collection processes, and ways of interpreting data to serve as a basis for plans. Specific activities for IMPACT/Eritrea included

- Designing a prevention and care program in support of the national five-year HIV/AIDS strategy.
- Coordinating (through a multisectoral task force) a comprehensive national HIV/AIDS/STI situation and response analysis in preparation for the development of a new five-year strategic plan.
- Conducting a VCT assessment and developing a plan for strengthening the national VCT program.
- Developing (through the task force) a five-year national strategic plan to guide and expand the national effort to prevent and control HIV/AIDS. The plan built upon the first national HIV/AIDS strategic plan (1997–2001) and proposed a more multisectoral and broad-based response, incorporating relevant lessons learned and proven best practices from local and worldwide experience in responding to the HIV/AIDS epidemic.
- Providing technical assistance that helped the government develop an application for funding from the Global Fund for AIDS, TB and Malaria (GFATM) and to respond to questions from the Technical Review Panel. The proposal was approved for Round 3

GFATM funding and IMPACT/Eritrea helped the government to develop and implement the detailed implementation plan for the project.

- Assisting with the government's application to various organizations for technical, financial and commodity support to the national HIV/AIDS/STI/TB programs.
- Providing support for development of an HIV/AIDS proposal submitted to France's government.

Surveillance

IMPACT/Eritrea's support for surveillance efforts extended to two processes: antenatal sero-prevalence surveillance and behavioral surveillance. Once again, it provided technical assistance to the MOH to allow it to conduct these surveys and make them a tool of the institution.

Antenatal Seroprevalence Surveillance

The program helped the MOH reestablish its HIV sentinel surveillance for antenatal seroprevalence. The survey analyzed specimens for HIV, syphilis, and hepatitis B and C. The partners developed a new methodology; selected sentinel sites; trained clinical, laboratory, and supervisory personnel, and provided equipment for the collection of data and specimens.

IMPACT/Eritrea provided technical support for the analysis of data gathered in 2003, and prepared a report of findings entitled *HIV Prevention Impact in Eritrea: Results from the 2003 Round of HIV Sentinel Surveillance*, an appendix to this report. IMPACT also assisted NATCoD/MOH in preparing and submitting an abstract to the fifteenth International AIDS Conference in Bangkok, Thailand, and developed a national dissemination plan. For the MOH to be able to replicate the antenatal surveillance on an annual basis, IMPACT/Eritrea developed the *Facilitators' Training Guide for Training Health Workers Conducting Periodic Antenatal HIV Sentinel Surveillance*, a comprehensive instruction manual for conducting antenatal surveillance.

Behavioral Surveillance

With technical assistance from IMPACT/Eritrea, the MOH and ESMG implemented the 2003–04 BSS. This study focused on CSWs and other women in locations known for high levels of sex-work activity. IMPACT/Eritrea provided technical assistance in all methodological aspects of the BSS (study design, sampling, and questionnaire development) and also took the lead on important formative research for the BSS (mapping exercise and qualitative study). The final report and results of the 2003–04 BSS in Eritrea were presented at a national stakeholders meeting in February 2005.

Overview of the methods used in the 2003 sentinel surveillance

Selection of sentinel surveillance sites

This round of HIV sentinel surveillance was conducted in 14 urban and 29 rural ANC sites throughout the country. A number of small sites within certain geographic areas were combined to form clusters. There were a total of 12 sites/clusters in this assessment, with a minimum of two sites/clusters per zone (rural and urban, if possible). Two exceptions were Maekel zone (which had two urban sites and one rural site) and Southern Red Sea zone (which had one major urban site and a small rural site combined to form one single site for that zone). Study sites were selected based on the following criteria:

- Geographical representation of all zones
- Urban/rural representation
- Volume of ANC attendance
- Sites used in 1999 HIV sentinel surveillance
- Availability of facilities for processing and storing blood specimens
- Commitment and willingness of the health staff to participate
- Feasibility for supervision and shipment of specimens to the NHL in Asmara
- Other on-going or planned surveillance activities (e.g., behavioral surveillance)

Study population

The HIV sentinel surveillance survey was conducted among pregnant women attending ANCs at the 12 selected health facilities or clusters (combined group of health facilities). All pregnant women, regardless of their age, attending ANC for the first visit in the current pregnancy were recruited into the survey consecutively until the required sample size was attained using unlinked anonymous procedures.

Preparation for Field Collection of Specimens

The MOH prepared kits for the staff of each selected health facility to use to enroll clients and obtain blood specimens. These materials included registers and forms for collecting information and monitoring the process of enrolment at each health facility. In addition, these kits contained materials for collecting and labeling the blood specimens and materials for performing on-site syphilis testing of the blood specimens.

Background Characteristics

In addition to collecting blood specimens from pregnant women, field staff collected information on important background characteristics to consider during the analysis. Those characteristics are as follows:

- Age
- Nationality
- Marital status
- Education
- Partner's occupation
- Religion
- Total number of pregnancies (gravidity)
- Number of previous live births (parity)
- Occupation

Training of Health Staff

Each participating health facility sent at least one clinic staff member and, if available, a laboratory staff member to an orientation and training session that was held in Asmara in April 2003. At the end of this training, the health care workers were supplied with the client enrolment and specimen collection materials.

Sampling and Time Frame

The aim was to obtain a minimum sample size of 300 pregnant women from each of the selected sites or clusters within a 10-week period. This is in line with the World Health Organization guidelines on HIV sentinel surveillance among ANC attendees that recommend a sample size of 250–300 per site (see the following page for more information).

Blood Specimen Testing at the National Health Laboratory

The laboratory staff of the National Health Laboratory completed the HIV testing of the sentinel surveillance specimens in December 2003. Syphilis testing was completed in early 2004**.**

Data Management

During December 2003 and January 2004, NATCoD staff performed preliminary data entry. Repeat data entry and data cleaning were carried out by an independent team of data entry clerks, led by a local consultant who has data management expertise.

Implementation and Management

IMPACT initiated activities in Eritrea in September 2000, and among its first activities with the MOH was development of the IMPACT/Eritrea work plan. As was the case with all the program's early activities, support came through short-term technical assistance to the MOH. The IMPACT/Eritrea country director arrived in August 2001 and took up his post within the MOH. Next, the PATH-seconded BCC technical advisor joined the picture, and the IMPACT/Eritrea in-country presence was set for the next two years. The hallmark was the management approach—to have long-term technical staff in the MOH/NATCoD where they could both strengthen its capacity and define, solicit, and manage the needed short-term technical assistance.

The management model followed by IMPACT/Eritrea centered around direct technical input from the country director, who benefited from long-term technical assistance from the technical advisor and supplemental short-term technical support from outside experts. The outside experts supported skills-building activities in various program management areas, and coordinated delivery of services. The larger in-country presence allowed IMPACT/Eritrea to be efficient, with staff managing any short-term technical assistance.

IMPACT/Eritrea collaborated closely with USAID/Eritrea, the MOH/NATCoD, and various stakeholders to identify emerging needs and to update strategy and work plan each year, thereby ensuring that the program remained responsive to the Eritrean HIV/AIDS situation. While the capacity building approach evolved from short to long term, IMPACT/Eritrea's overall strategy remained centered on strengthening the technical leadership, competence, and systems of the MOH/NATCoD and other partners to implement HIV/AIDS interventions and carry on this work in the future.

In 2003, IMPACT/Eritrea conducted a comprehensive review of the country program to assess implementation of the original strategy (the roles of other donors, operational realities), to ensure responsiveness to USAID/Eritrea needs and strategic objectives, and to examine program strengths, weaknesses and areas for improvement from the perspective of stakeholders. The review concluded: "FHI/IMPACT is on course with the implementation of its technical support package to Eritrea, although progress in each of the technical strategy areas varies. FHI worked carefully with USAID and various stakeholders, including especially the NACP, to identify priorities and elaborate a country strategy, which has been updated annually since the first year." In order to address the variation in the implementation of the technical support package the review recommended and IMPACT/Eritrea adapted its model in response by increasing the in-country presence. The priority areas the reviewers identified were: monitoring and evaluation, management, STI prevention, treatment and advocacy, work with CSWs and military personnel and VCT. IMPACT/Eritrea hired two additional long-term technical advisors in the areas of monitoring and evaluation and strategic planning, and VCT and community-based care, bringing the total in-country presence to four.

IMPACT/Eritrea did not have funds for service delivery; therefore, the reach of the project was determined by the availability of MOH and local partner funds. The arrival of the country director corresponded with the initiation of the HAMSET project, and over the next years funds

started to flow for project implementation. In addition, the Government of Eritrea received funds from the GFATM, and was in a better position to support implementation and expand services.
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Eritrea Program Timeline

Program Activities Fiscal Year	2000		2001		2002		2003		2004		2005	
Quarter	1,2	3,4	1,2	3,4	1,2	3,4	1,2	3,4	1,2	3	1,2	3,4
Voluntary Counseling and Testing												
Completed VCT assessment in country	■											
Conducted training courses for counselors, supervisors, and trainers			■	■						■	■	■
Train the trainer curriculum developed				■								
Establishment of a support supervision system for counseling										■		
National counseling curriculum finalized, translated, and published						■						
First stand-alone VCT site opened in Asmara						■						
Additional VCT sites opened							■	■	■	■	■	
Completed comprehensive review of VCT situation in Eritrea								■				
VCT brochure designed, produced, translated, and distributed								■				
Developed plan to improve laboratory support for VCT										■		
Revised and updated VCT guidelines											■	■
Developed and revised reporting forms and systems for VCT reporting											■	
Strengthened Felege Hiwet post test club												■
STI Prevention and Treatment												

Program Activities Fiscal Year	2000		2001		2002		2003		2004		2005	
Quarter	1,2	3,4	1,2	3,4	1,2	3,4	1,2	3,4	1,2	3	1,2	3,4
Nurses and physicians trained in syndromic management of STIs												
Technically revised MOH manual for HIV/AIDS care and counseling												
Sponsored attendance of two MOH officials to University of Washington course on AIDS and STD research												
Completed comprehensive review of STI situation in Eritrea												
Formed detailed recommendations for actions to address identified weaknesses												
Assisted with plan to improve and intensify STI prevention activities, treatment-seeking behavior, and diagnosis and management of STIs												
Prevention/Behavior Change and Communication												
Conducted formative research for the development of a BCC campaign												
Facilitated national workshop to develop BCC strategy												
Adapted peer education materials												
Held training workshops on HIV/AIDS competency and BCC												
Trained peer coordinators, facilitators, and supervisors												
Developed peer facilitation and discussion guides												
Assessed local and regional media capacity and capability												
Completed extensive mapping and zoning exercise												

Program Activities Fiscal Year	**2000**		**2001**		**2002**		**2003**		**2004**		**2005**	
Quarter	**1,2**	**3,4**	**1,2**	**3,4**	**1,2**	**3,4**	**1,2**	**3,4**	**1,2**	**3**	**1,2**	**3,4**
Implemented mass media campaign												
Peer education carried out by trained personnel												
Contributed to development of national image and logo for BCC campaign materials												
IEC materials designed and produced												
Established peer education program at University of Asmara												
High risk group interventions												
Conducted qualitative sex worker study												
Developed plan for expanding interventions targeting sex workers												
Carried out situational analysis and advocacy activities in the sex worker context												
Provided technical assistance for national stakeholders' meeting												
Provided technical assistance for the development a sex worker implementation program												
Provided technical assistance to initiate the implementation of sex worker interventions in several municipalities												
Clinical care and treatment												
Home- and Community-based Care												
Facilitated study tour to observe community-based care in Kenya and Uganda												

Program Activities Fiscal Year	2000		2001		2002		2003		2004		2005	
Quarter	1,2	3,4	1,2	3,4	1,2	3,4	1,2	3,4	1,2	3	1,2	3,4
Reviewed HCBC manual												
Assessed HCBC services												
Developed plan for expansion, quality improvement, and consumer satisfaction among community- and home-based care recipients												
Assisted MOH with development of policies and procedures for the provision of C/HBC to PLHA												
Developed and revised forms and systems for C/HBC reporting												
ART												
Assisted MOH in drafting policy documents and clinical guidelines for ART treatment												
Facilitated assessment of HIV/ART clinical care and readiness for expansion												
Conducted training of trainers on ART/HIV clinical care												
Finalized, published, and disseminated ART guidelines												
Facilitated site preparation, adherence training, and capacity building for the implementation of ART												
Assisted the MOH with procurement of ARVs												
PMTCT												
Conducted review and assessment of PMTCT situation												
Developed plan to expand PMTCT services												
Trained new PMTCT providers												

Program Activities Fiscal Year	2000		2001		2002		2003		2004		2005	
Quarter	1,2	3,4	1,2	3,4	1,2	3,4	1,2	3,4	1,2	3	1,2	3,4
Updated PMTCT policy, procedures, and systems												
Trained all MCH, ANC and Maternity service providers in PMTCT												
Reviewed HIV testing changing from opt-in to opt-out												

Strategic Planning/Evaluation, Surveillance, and Research												
Designed prevention and care program with NACP to support national 5-year strategy												
Analyzed, wrote, and presented the results of the 2001 national HIV/AIDS/STI BSS												
Held project proposal writing workshop with stakeholders												
Provided technical assistance to MOH in evaluation, surveillance, and research												
Provided technical assistance to MOH in sentinel surveillance: methodology development, sites chosen, and personnel trained												
Assisted with data collection for biological surveillance												
Prepared and developed BSS focused on sex workers												
Coordinated national situation and response analysis												
Developed 5-year strategy for HIV/AIDS/STI												
Provided technical assistance to MOH in proposal development												
Analyzed 2003 sentinel surveillance data												
Assisted MOH with preparation and submission of abstract to International AIDS Conference												
Developed national dissemination plan												
Developed comprehensive monitoring and evaluation plan for national HIV/AIDS/STI/TB program												
Trained GO and NGO staff in monitoring and evaluation												
Presented BSS results at national stakeholders' meeting												
Drafted document on state of HIV/AIDS in Eritrea												

Monitoring and evaluation tools developed, refined, translated, and pre-tested												
Program Management												
Temporary resident advisor in country												
Country Director in Eritrea												
BCC technical advisor in country												
Senior technical officer for Strategic Planning/Monitoring												
Senior technical officer for VCT/Community-based care												

Program Results

Overall IMPACT/Eritrea was successful at building capacity within the MOH/NATCoD and meeting the defined objectives. This includes building management and technical capacity, assisting in initiation and expansion of services, and developing systems and documentation across a range of interventions. The table below provides a quantitative view of the IMPACT/Eritrea, looking at outputs and outcomes relative to planned activities and objectives.

Behavior Change Communication (BCC)		
Planned Activities	Inputs/Outputs	Outcomes
▪ Conduct national BCC assessment and develop BCC work plan ▪ Develop peer education program under *Winning Through Caring* communication strategy ▪ Conduct mass media assessment ▪ Develop peer education materials ▪ Assist in developing tailored BCC tools and materials for inter-personal communication activities with the EDF and commercial sex workers	▪ Conducted BCC assessment ▪ Conducted planning exercise ▪ Provided technical assistance to local institutions to develop proposals for HAMSET funding and for implementation support for BCC activities ▪ Trained 49 peer supervisors ▪ Study tour to IMPACT/Kenya and to attend peer coordinator training workshop ▪ Trained 234 peer coordinators ▪ Trained 1,677 peer facilitators ▪ Disseminated 150,000 materials ▪ Conducted 12,000 IEC events ▪ Developed logo for national campaign ▪ Conducted mass media assessment	▪ Developed *Winning Through Caring* peer education program and communication strategy implemented by about 20 partners in 15 communities nationwide ▪ Reached over 30,000 peer groups and facilitators on a biweekly or monthly basis ▪ Operational costs for *Winning Through Caring* partners provided by HAMSET ▪ Increased capacity, skills, and knowledge of individuals related to HIV/AIDS and their ability to discuss openly issues related to sexuality, STIs, HIV, and AIDS with partners, peers, and seniors
High-Risk Group Interventions ▪ Assess CSW situation and develop strategy ▪ Study tour(s) for CSW programming and advocacy ▪ Support implementation of CSW interventions.	▪ Completed preliminary CSW assessment ▪ Conducted CSW workshop to share findings and develop national strategy ▪ CSW study tour to Kenya ▪ Provided technical assistance for support to sex worker activities through Winning Through Caring	▪ Built capacity of MOH/NATCoD counterparts in making a sex worker intervention program operational; included social mapping of sex workers and their networks, defining an overall approach to sex workers interventions, and assisting to develop a package of basic health and social services for CSWs.

Prevention and Treatment of Sexually Transmitted Infections		
Planned Activities	Inputs/Outputs	Outcomes
▪ Conduct STI assessment ▪ Develop implementation plan based upon identified needs and gaps from the assessment ▪ Develop core group to manage STI program w/in the MOH ▪ Review and update STI guidelines ▪ Develop and institute training in syndromic management of STI's ▪ Develop appropriate materials to promote adherence to syndromic management	▪ Completed and presented the STI assessment ▪ Translated findings and recommendations into STI strategy and implementation plan ▪ Provided training and technical assistance to health workers on STI syndromic management for high-risk groups ▪ Trained 33 physicians and 8 nurses in syndromic management of STIs ▪ Sponsored 2 MOH officials for Univ. of Washington course on *Principles of Research on AIDS and STD* ▪ Revised manual for STI syndromic management	▪ Government showed great commitment to improving STI services, with involvement in the assessment and planning process and provision staff to work on STI activities ▪ Developed comprehensive national STI prevention and case management strategy for the MOH in Eritrea ▪ Trained healthcare providers on STI management, training and programming ▪ Improved STI case management through development of standard case definitions, evidence-based guidelines, and integration of services
Voluntary Counseling and Testing and Prevention of Mother to Child Transmission		
Planned Activities	Inputs/Outputs	Outcomes
▪ Develop core team for management and implementation of VCT program ▪ Conduct national VCT assessment ▪ Develop detailed, implementation plan to establish VCT services ▪ Assist in first NACP training of new counselors. ▪ Assist military in establishing VCT services ▪ Link VCT services to referral networks and BCC activities ▪ Establish post-test clubs	▪ Completed assessment of VCT activities ▪ Trained 30 VCT trainers (core team): sent 6 to Uganda and 8 to Kenya for more advanced training ▪ Trained 120 counselors in VCT ▪ Trained 12 counselor supervisors in VCT ▪ Established counseling supervision system ▪ 73 health facility-based VCT sites and 10 free-standing VCT sites operational (VCT is available in all six zobas ▪ Tested 10,659 clients tested at VCT sites in 2002; in first quarter of 2003, tested 8000 ▪ Produced and translated VCT brochure ▪ Increased demand for VCT	▪ MOH established core VCT TOT team that trains all counselors in country (using the national VCT Training curriculum now available in English and Tigrinya) ▪ Increased access and availability of VCT and care and support services ▪ Strengthened quality of VCT services using the already established MOH structure. ▪ Strengthened the MIS system for better data tracking and improved management. ▪ Government of Eritrea revised VCT protocol to allow for same-day results

	services through the synergistic effect with the Behavior Change Communication Initiative ▪ Revised, translated into Tigrinya, published, and disseminated national counseling curriculum	
Care and Treatment (Home/Community-Based /HIV Clinical Care and Treatment, including ARV)		
Planned Activities	Inputs/Outputs	Outcomes
▪ Conduct situation analysis of HCBC needs and services ▪ Develop HCBC strategy that addresses comprehensive care and support needs of PLHA ▪ Develop and conduct training for caregivers ▪ Develop training and supervision strategy for building in-country technical capacity to deliver HIV clinical care and treatment ▪ Assist to conduct training on HIV clinical care and treatment and to establish quality assurance and supervision systems ▪ Assist MOH/NATCoD to adapt and institute standard operating procedures for HIV clinical care service delivery in accordance to national guidelines ▪ Provide technical input into preparation of facilities, including procurement and logistical management of drugs and commodities ▪ Assist the MOH/NATCoD in developing and testing a reporting system at the facility and central levels to track patients, monitor HIV clinical care services, and use data to improve service delivery	▪ Developed national implementation plan for HCBC and facility-based care for persons living with HIV and AIDS including ART ▪ Developed training manual for HBC providers and training of H/CBC workers in key areas such as comprehensive continuum of care, managing work-related stress, TB, and HIV ▪ Conducted initial and refresher training for clinical teams (physicians, nurses, nurse-counselors, pharmacists and lab technicians) on OIs, ART/clinical care, and adherence counseling ▪ ART policy and clinical care guidelines reviewed, published, and disseminated ▪ Training of trainers conducted to build technical and training competence of ART master trainers: 4 Eritrean clinicians sponsored on a two-week HIV/AIDS clinical attachment and study tour to FHI's comprehensive care/ART program in Kenya ▪ Assessments conducted of site readiness for ART delivery at designated health facilities (including clinical, pharmacy, and laboratory capacity) ▪ Technical assistance provided to procurement of ARVs,	▪ Developed national strategy for the continuum of care for people living with HIV and AIDS in Eritrea ▪ Expanded care and support services geographically and in scope to include more aspects such as nutrition, positive living for asymptomatic clients, and positive empowerment ▪ Developed national strategy for building capacity and training of healthcare providers for the rollout of the national ART program ▪ ART policies and guidelines in place to ensure delivery of quality ART services ▪ In-country capacity to conduct ART trainings ▪ Health facilities ready for introduction of ART after arrival of drugs in country

	including quantification and delivery schedule for ARVs and other essential commodities • Initial paper-based HMIS systems and tools developed for clinical management and tracking of patients on treatment	
Strategic Planning/ Monitoring and Evaluation		
Planned Activities	Inputs/Outputs	Outcomes
Monitoring and evaluation ▪ Strategic planning with major stakeholders, including situational and response analysis & participatory planning to develop comprehensive HIV/AIDS programming ▪ Technical assistance to the MOH in monitoring and evaluation and conduct monitoring and evaluation training ▪ Develop BCC monitoring and evaluation plan	▪ Situation and response analysis completed ▪ National monitoring and evaluation strategy developed ▪ Proposal-writing workshop held	
Surveillance ▪ Conduct an assessment of HIV sentinel surveillance ▪ Develop strategy to reestablish HIV sentinel surveillance in ANC's ▪ Hold stakeholders' meeting to disseminate assessment findings and present strategy ▪ Develop implementation plan to operationalize strategy ▪ Assess interest of conducting a BSS among high-risk groups in Eritrea	▪ Conducted 2003 sentinel surveillance ▪ Conducted 2003–4 BSS with CSWs and other high-risk women ▪ Trained clinical, laboratory, and supervisory personnel and provided equipment for collection of data and specimens for sentinel surveillance ▪ Provided technical support in analysis of the 2003 sentinel surveillance data and prepared a report of findings ▪ Began preparatory work with NATCoD for the next round of HIV sentinel surveillance (2005)	▪ MOH helped to reestablish and institutionalize HIV sentinel surveillance. IMPACT and MOH developed a new methodology for sentinel surveillance, selected sentinel sites and implemented the survey ▪ IMPACT developed the *Facilitators' Training Guide for Training Health Workers* to facilitate future sentinel surveillance exercises

Lessons Learned and Recommendations

General Capacity Building

Building the capacity of a national program takes both time and resources.
Over a five-year period IMPACT/Eritrea was able to make substantial progress in building the capacity of various programs in the MOH/NATCoD. However, several favorable aspects of the program turned out to be essential to its success: 1) the Government of Eritrea was very committed and provided the necessary human resources; 2) the HAMSET project started around the same time as IMPACT/Eritrea, which meant that funds were available for much of the implementation; and, 3) there was sufficient time not only for the initial capacity building, but also for local counterparts to apply the skills under a watchful eye to ensure they were truly learned.

Capacity building programs should have defined indicators and baseline data for monitoring and evaluation.
Five years after initiation of this program, most measures of success were either outputs from trainings or anecdotal information from project reviews and other reports, so the true impact of the program was difficult to measure. Defining a series of indicators at the point of project initiation would have made ongoing monitoring possible and yielded measures of success at multiple points throughout project implementation.

Playing a role in capacity building without funding for project implementation can be problematic.
By design, and in response to the desire of the USAID mission and the MOH, FHI's role was limited to providing technical assistance and capacity building. This therefore limited FHI's control over activities, outcomes, and deliverables. Also by design, there were minimal program funds available for specific activities or to underwrite key procurements. When IMPACT/Eritrea conducted activities, partners would have been more responsive if IMPACT was assisting with funding as well.

The Role of Government

Building the capacity of a national program can be accomplished through a technical assistance project but it needs sufficient time and resources.
Much of what IMPACT/Eritrea supported was designed with the potential for replication and scale-up. The VCT program, for example, developed fewer than 10 new VCT sites in year 1, but gradually built the capacity of not only the MOH at the national level, but at various levels nationwide. By the end of the project, 83 new sites had been opened, with openings happening at a much faster pace in the later years. This was largely because MOH commitment that made personnel available for both managing the program and participating in capacity building activities.

The role of the government in coordinating donor efforts cannot be overstated.
There are many examples of projects in which donors have been given freedom in a country to implement activities. This results in overlapping projects, competition, and often a lack of

success. This program avoided this pitfall: since the government was the coordinator, IMPACT/Eritrea met considerable success. Two examples are the implementation of the *Winning Through Caring* BCC initiative, and the identification of IMPACT/Eritrea as the main capacity building partner of the MOH/NATCoD.

Physical location in government offices is both beneficial and challenging.
Housed in the MOH, the FHI office did not have sufficient logistical support including office staff, office machines, and vehicles. These limitations made it difficult to plan and time key activities well and to be responsible for the outcome of complex program development endeavors. On the other hand, being part of the MOH meant that IMPACT/Eritrea had a better understanding of important strengths and weaknesses in its operational environment, and could regularly interact to plan and implement corresponding measures. IMPACT/Eritrea also gained legitimacy by association, meaning that others might be more deferential knowing IMPACT/Eritrea was working in close proximity with the MOH.

On the other hand, IMPACT/Eritrea had some difficulty developing an open relationship with the Eritrean Defense Force, in part because other ministries and civil society organizations in Eritrea saw IMPACT/Eritrea as too closely aligned with the MOH. It is not always possible to change such perceptions so it is important to understand these limitations and their implications and to know how best to work within these constraints.

Cultural Issues

Working in a setting with multiple languages is difficult, but not impossible.
It is important to understand the implications of working in a setting where numerous languages are spoken, as well as the level of the challenge; this will allow the program to plan accordingly. For example, when conducting focus group discussions it is imperative to know how many different languages will be required and to know the language skills of interviewers and data analysts. This is also necessary for production of BCC materials, since a large percentage of the population may be illiterate. IMPACT/Eritrea had some successes in developing activities and documents in multiple languages, but also learned to move cautiously and thoughtfully.

Documentation

Documentation has an important role to play in strengthening programming.
This is especially true of a capacity building project because the documentation not only serves the purpose of preserving and disseminating lessons learned, but also serves as one of the capacity building components. Service delivery guidelines, protocols, training manuals and other materials are important reference documents for governments and organizations to use after the technical assistance is finished.

Appendix 1: Eritrea Program Financial Summary

From September 2000, USAID/Eritrea committed $4.759 million in program support funds to FHI/IMPACT; there were no subagreement allocations. Staff executed five task orders in the amount of $842,360.

Fiscal Year	FY Obligations	LOP Obligations	FY Expenses	LOP Expenses	Balance
2000			$41,397	$41,397	($41,397)
2001	$500,000	$500,000	$470,620	$512,017	($12,017)
2002	$1,000,000	$1,500,000	$696,726	$1,208,743	$291,257
2003	$950,000	$2,450,000	$919,057	$2,127,800	$322,200
2004	$1,100,000	$3,550,000	$986,340	$3,114,140	$435,860
2005	$1,209,000	$4,759,000	$1,338,905	$4,453,045	$305,955
Total	**$4,759,000**		**$4,453,045**		**$305,955**

Appendix 2: Technical Assistance Roster

Date	Purpose	# of Travelers
March 2000	Collaborated with the National AIDS Control Program to design the IMPACT prevention and care program in support of the Eritrean national HIV/AIDS five-year strategy	2
September 2000	Assisted the MOH in preparing for the World Bank appraisal mission, particularly on the issue of MTCT	1
September 2000	Assessed the needs and opportunities for VCT services and provided recommendations to the MOH and USAID/Eritrea on strengthening and scaling up VCT services in Eritrea	1
November 2000	Provided technical assistance to the MOH in facilitating a training of trainers (TOT) for physicians on comprehensive HIV/AIDS care and support and syndromic management of STIs	1
December 2000	Developed the IMPACT/Eritrea plan of action for capacity building in HIV/AIDS prevention and care in Eritrea.	3
January 2001	Identified counselor training needs, conducted VCT counseling training, and determined future planning strategies to address training needs and identify future potential counseling supervisors	1
Mar-May 2001	Provided follow-up on the implementation of the IMPACT/Eritrea plan of action for capacity building in HIV/AIDS prevention and care, supported the NACP in overall coordination of efforts, and assisted to establish permanent FHI presence in Eritrea	1
May 2001	Assisted the NACP in a rapid assessment of the present situation of people infected with and affected by HIV/AIDS; developed a framework for a support system for those living with HIV/AIDS, including the establishment of an association of PLHA and support groups within existing communities; and assisted in developing/adapting guidelines on living positively with HIV/AIDS	1
June 2001	Developed a TOT curriculum, TOT trainers manual, and TOT participant manual for VCT; co-facilitated a one-week VCT TOT workshop for NACP counselors	1
July 2001	Continued implementation of the IMPACT/Eritrea plan of action for capacity building in HIV/AIDS prevention and care, supported the NACP in overall coordination of efforts, and assisted to establish permanent FHI presence in Eritrea	1
July 2001	Followed-up on existing VCT and care and support activities to date; completed the VCT manual in collaboration with the NACP; and trained two local counterparts on counseling, quality assurance and implementation of counseling supervision	1

July 2001	Participated in Country Director orientation at the FHI home office in Arlington and met with HIV/AIDS and Eritrea country management teams at USAID/Washington in preparation for in-country responsibilities	1
March 2002	Assisted to revise the FY02 workplan and budget, develop the workplan for FY03 activities, and review FHI policies and procedures related to in-country operations	1
October 2002	Organized and co-facilitated a REDSO-supported workshop in Asmara, Eritrea for emerging epidemic countries	1
December 2002	Contributed to the finalization of the report on the situation and response analysis of the HIV/AIDS epidemic in Eritrea and elaboration of the HIV/AIDS strategic plan	1
April 2003	Provided technical assistance in organizing and training health workers from selected health facilities to conduct the 2003 round of HIV sentinel surveillance round in Eritrea	1
May 2003	Provided technical assistance to the Government of Eritrea on elaborating the VCT, PMTCT, and care and support components of its third proposal submission to the Global Fund Against AIDS, TB, and Malaria	1
May 2003	Conducted program review of the FHI/IMPACT program in Eritrea	1
May 2003	Provided technical assistance to the Government of Eritrea on the preparation of its third proposal submission to the Global Fund Against AIDS, TB, and Malaria	1
May 2003	Provided technical assistance to the MOH/NACP and Population Services International-Eritrea/ESMG on the methodology for conducting behavioral surveillance among high-risk and vulnerable populations in 2003/4	1
June 2003	Assessed the status of VCT service delivery, counselor training and supervision, and made recommendations on addressing current or potential areas of weaknesses and local/regional resources to further develop counseling in Eritrea	1
June 2003	Investigated issues related to sex work in Eritrea to make recommendations on implementing BCC interventions among sex workers and their clients	1
June 2003	Monitored ongoing BCC activities and made recommendations for improving current activities, planning/facilitating key outstanding activities, harmonizing BCC activities and building synergy through improved collaboration with partners	1
July 2003	Provided technical input into the design of the 2003/4 BSS, including finalization of study populations and geographic areas, clarification of roles and responsibilities, and drafting the survey protocol and questionnaires	1

November 2003	Photographed images of caring, hope, and action within the context of the HIV/AIDS epidemic in Eritrea in support of materials development for the MOH's BCC strategy, "Winning through Caring."	1
November 2003	Provided technical assistance and training in graphic design to local artists during the BCC materials development workshop	1
October 2003	Organized and facilitated the BCC materials development workshop to develop a stock of appropriate print materials in support of the MOH's BCC "Winning through Caring" campaign	1
December 2003	Provided technical support to the 2003/4 BSS on sex workers, including assistance in planning, study design, sampling and mapping, instrument modification, training of mapping team, and logistics	1
October 2003	Provided technical assistance to the 2003/4 BSS on sex workers, including implementation of the qualitative research study to operationalize the definition of female sex workers and their male clients in Eritrea	1
March 2004	Provided technical assistance to the MOH/NATCoD in assessing the current situation regarding provision of comprehensive care for PLHA, revised the Guidelines for the Use of ART Therapy in Eritrea, and reviewed/updated the Eritrean HIV/AIDS Care and Counselling: A Home-Based Care Manual	1
April 2004	Provided technical assistance to the MOH/NATCoD in accelerating provision of ARV therapy and clinical management of Opportunistic infections to PLHA	1
April 2004	Met with the MOH and VCT focal points and visited VCT centers to become familiar with progress to date and status of the Eritrean VCT program	1
June 2004	Reviewed and revised the FY04 workplan and budget as needed, assisted to draft the workplan and budget for FY05 activities, and provided program management support on issues related to program and financial reporting	1
June 2004	Provided technical assistance in reviewing and monitoring the progress of BCC activities, facilitating the implementation of outstanding activities, and planning for the next cycle of the project	1
August 2004	HIV/AIDS clinical management training and training of trainers for doctors, nurses, laboratory technicians and counselors	1
August 2004	HIV/AIDS clinical management training of trainers for nurses, lab technicians, pharmacists and counselors	1
October 2004	Assist the MOH to establish a national VCT counselors support supervision system and train selected senior counselors as counselor supervisors	2

November 2004	Assist MOH to develop and harmonize health information management system for ART, VCT and PMTCT services, and assess and address any gaps in site readiness for the initiation of ART at designated health facilities	1
December 2004	Assist the MOH to articulate a strategy for targeting interventions toward sex workers and establishing linkages to services such as VCT, PMTCT, STIs, post-test clubs	1
February 2005	Provide follow-up support to the establishment of the national supervision program for VCT counsellors and provide recommendations to the MOH on integration of supervision into quality of VCT services	2
April 2005	Provided technical assistance to MOH in elaborating national training plan for ART, coaching senior staff in ART training, and developing system to track and monitor patients	1
May 2005	Assist the MOH to develop and submit a multi-sectoral HIV/AIDS proposal for the Global Fund's Fifth Call for Proposals	1
June 2005	Assist the MOH to develop and submit a TB proposal for the Global Fund's Fifth Call for Proposals	1
June 2005	Provide technical assistance to overall program management and monitoring of activities	1
June 2005	Review progress of national BCC program, facilitate implementation of priority activities, and formulate plan and next steps for expansion of program	1
June 2005	Train core team of master trainers at central level in ART clinical care and assist them to faciliate trainings for selected health professionals	1
June 2005	Assist the MOH to develop a strategy and framework for merging TB and HIV/AIDS services	1

Appendix 3: Resources Published with FHI Support

This bibliography lists all technical reports, resources and tools, trip reports and other program documents either produced or supported by IMPACT/Eritrea.

Behavior change communication

AIDS Competency Workshop Report, Asmara, November 19-22, 2001. The AIDS Competency Workshop (ACW) was one of the steps in the BCC implementation plan. Designated HIV and AIDS focal persons from each partner ministry or organization were trained on all aspects of the AIDS epidemic. Prepared by PATH. March 2002.

Behaviour Change Communication Report. Ministry of Health, IEC UNIT. October 2002.

Formative Assessment Report for the Development of a Communication Strategy for STI, HIV and AIDS for the IMPACT Project and Ministry of Health, Eritrea. Prepared by Debbie Gachuhi, Consultant. April 2001.

Formative Assessment Report for STI, HIV and AIDS Prevention in Eritrea. Prepared by Ken Kutsch, PATH, and Alazar Mehretreab, MOH, Eritrea. February, 2002.

Winning through Caring: A BCC Strategy for Prevention of HIV and Control of AIDS in Eritrea. Prepared by C. Y. Gopinath, PATH BCC Advisor. June 2001.

Winning through Caring: A BCC Strategy for Prevention of HIV and Control of AIDS in Eritrea (Powerpoint). Prepared by C. Y. Gopinath, PATH BCC Advisor. June 2001.

Winning through Caring: HIV and AIDS Behavior Change Communication Strategy: An Implementation Case Study (forthcoming).

Voluntary counseling and testing

Eritrea VCT Training Manual. Prepared by NACP/MOH with technical assistance from FHI/Eritrea. July 2001.

HIV/AIDS Counselling Skills Training Curricula. Prepared by NACP/MOH with technical assistance from FHI/Eritrea. July 2001.

National Guidelines for HIV Testing. Prepared by NACP/MOH with technical assistance from FHI/Eritrea. July 2002.

Situational Analysis of VCT in Asmara, Eritrea. Prepared by Deborah Boswell, Consultant. September 2000.

Technical Report: VCT and Care and Support Activities: September 2000-July 2001. Prepared by Deborah Boswell, Consultant. August 2001.

Sentinel surveillance

HIV Prevention Impact in Eritrea: Results from the 2003 Round of HIV Sentinel Surveillance. Prepared by Dr. Donna Espeut, FHI Senior Technical Officer. August 2004.

Proposal: Conducting Sentinel Surveillance among Pregnant Women Attending Antenatal Care at Selected Sites in Eritrea. Prepared by NACP/MOH and FHI/Eritrea with technical assistance from FHI/Eritrea. February 2003.

Protocol: Conducting Sentinel Surveillance among Pregnant Women Attending Antenatal Care at Selected Sites in Eritrea. Prepared by NACP/MOH and FHI/Eritrea with technical assistance from FHI/Eritrea. February 2003.

Report on the Re-establishment of Antenatal HIV Sentinel Surveillance in the State of Eritrea 2003. Prepared by Dr. Wilford Kirungi, Consultant. April 2003.

Behavioral surveillance

Proposal for Qualitative Research to Operationalize the Definitions of Female Sex Workers in Preparation for Behavioral Surveillance among Female Sex Workers and their Potential Male Clients. Prepared by Dr. Laura Porter, FHI Technical Officer. July 2003.

Results of 2004 Behavioral Surveillance among Female Sex Workers and their Potential Male Clients (forthcoming).

Strategic planning

A Framework for Building Capacity in HIV/AIDS/STI and TB Strategic Planning, Monitoring And Evaluation (M&E), and Surveillance in Eritrea, 2004–2006. Two-year strategy for building national capacity in monitoring and evaluation, strategic planning, and surveillance. Prepared by Dr. Donna Espeut, FHI Senior Technical Officer. May 2004.

HIV/AIDS/STI: Analysis of the Current Situation and Response. Prepared by the MOH with technical assistance from FHI/Eritrea. April 2003.

MOH/FHI Plan of Action for Capacity Building in HIV/AIDS Prevention and Care in Eritrea. Prepared by FHI/Eritrea. February 2001.

State of Eritrea: National Strategic Plan on HIV/AIDS/STIs, 2003-2007. Prepared by the MOH with technical assistance from FHI/Eritrea. April 2003.

STI prevention and treatment

Situation Analysis and Recommendations for Strengthening STI Prevention, Control and Surveillance Activities in the State of Eritrea. Prepared by Dr. Wilford Lordson Kirungi, Consultant. April 2003

Workshop Report on Training of Trainers on HIV/AIDS Care and STD Management, Asmara, November 6-11, 2000. Prepared by Dr. Denis Tindyebwa, Consultant. November 2000.

Care and support

BIDHO: An Association of People Living with HIV/AIDS (PLHA), and those most affected, in Eritrea (PowerPoint). Presented by Astrid Richardson, FHI Interim Resident Advisor. July 2001.

Community-based HIV/AIDS Care & Support: Mobilizing the Civil Society of Eritrea (PowerPoint). October 2001.

Clinical care

Debriefing on Technical Assistance Mission to National AIDS and TB Control Division Ministry of Health on HIV/AIDS Care and Treatment (PowerPoint). Presented by Dr. Dominique Kerouedan, Consultant. March 2004.

Eritrean Antiretroviral Therapy Guidelines. Revised by NATCoD/MOH with technical assistance from FHI/Eritrea. May 2004.

Eritrean HIV/AIDS Care Manual: Treatment and Prevention of Opportunistic Infections. Revised by NATCoD/MOH with technical assistance from FHI/Eritrea. May 2004.

Program management, implementation and monitoring

FHI/Eritrea Overview. April 2003.

FHI/IMPACT Program Review Report. Prepared by FHI/IMPACT. May 2003.

Semi-Annual Reports #7-13 to USAID/Washington. Prepared by FHI/Eritrea. September 2000-March 2004.

Proposals

Community-Based HIV/AIDS Care and Support: Mobilizing Religious Groups in Eritrea. Proposal to DANIDA. February 2001.

Community-Based HIV/AIDS Care and Support: Mobilizing the Civil Society of Eritrea. Proposal to the Royal Danish Embassy. July 2001.

The Global Fund to Fight AIDS, Tuberculosis and Malaria. Proposal to Expand and Accelerate the Fight against Aids, Tuberculosis and Malaria. Submitted by the Eritrean Partnership Against HIV/AIDS, Tuberculosis and Malaria. September 2002.

HIV/AIDS and Tuberculosis in Eritrea: Reducing the Threat and Providing Comprehensive Care and Support Services. Proposal to the Global Fund to Fight AIDS, Tuberculosis and Malaria. Submitted by the Eritrean Partnership Against HIV/AIDS, Tuberculosis and Malaria. May 2003.

Other

HIV/AIDS in Eritrea: Threats and Opportunities. Prepared by the MOH with assistance from FHI/Eritrea. June 2002.

Meeting Report: Emerging Epidemic Working Meeting, Asmara, October 21-25, 2002. Prepared by FHI/REDSO with input from FHI/Eritrea. July 2003.

Appendix 4. HIV PREVENTION IMPACT IN ERITREA: RESULTS FROM THE 2003 ROUND OF HIV SENTINEL SURVEILLANCE

HIV PREVENTION IMPACT IN ERITREA:

Results from the 2003 Round of HIV Sentinel Surveillance

We have done a lot in terms of HIV control activities in Eritrea, but are we making a difference? One way to assess the impact of our HIV programmes is to monitor trends in HIV prevalence. International experience shows that the HIV prevalence among pregnant women who seek antenatal care (ANC) is a good estimate of HIV prevalence in the general adult population.

Over the last decade, there have been a number of attempts to generate HIV seroprevalence data for Eritrea. In 1994, an HIV surveillance activity carried out in Asmara indicated a prevalence rate of 3%. In 1997, a small study among pregnant women attending selected ANC sites in all six zones of the country yielded an HIV prevalence rate of 2.0%. In 1999, a round of ANC HIV sentinel surveillance limited to urban areas in Maekel, Debub, Anseba, and Northern Red Sea zones yielded an HIV prevalence rate of 4.2%. The Ministry of Health (MoH) also conducted an HIV/AIDS/STI behavioural and HIV serological survey in 2001. The weighted HIV prevalence among ANC attendees in that study was 2.8%.

Between April and July 2003, the MoH collected basic health and sociodemographic information along with anonymous, unlinked blood samples from 4,651 pregnant women attending ANC sites for the first time during the current pregnancy. Blood samples were tested for both HIV and syphilis infection.

Based on the 2003 round of HIV sentinel surveillance among women attending antenatal care, the unweighted national HIV prevalence rate is 2.4% in Eritrea.

According to the 2003 assessment, which covered all six zones of Eritrea, the unweighted 2003 national HIV prevalence rate is 2.4%. Prevalence rates are highest in Southern Red Sea (7.2%) and Maekel (3.6%) zones. Women age 20–24 years and 25–29 years have higher-than-average rates of infection (2.7% and 3.6%, respectively). Notably, HIV prevalence is higher among pregnant women attending urban ANC sites (3.3%) than among pregnant women in rural ANC sites (0.9%). In urban sites, unmarried women age 15–24 are an extremely vulnerable group. Even though they made up a small proportion of the entire sample, their rate of HIV infection was 7.5%.

The 2003 data show that the following occupational categories have high HIV infection rates: bar, hotel, or tea shop workers (11.9%), housemaids or servants (9.5%), military or National Service personnel (6.0%), and private-sector workers (4.1%). It should be noted, however, that the majority of women in the sample (88%) reported their occupation as 'housewife'. Thus, the 2003 data simply highlight occupational categories that warrant further investigation in terms of HIV burden and risk. Women whose husbands or partners are bus or truck drivers (4.1%), merchants (3.1%), or serving in the military or National Service (3.0%) also have elevated rates of infection. Although women of Ethiopian origin made up only 2% of the 2003 sample, their HIV infection rate is eight times higher than that of Eritreans (16.1% and 2.1%, respectively). This huge differential is justification for investing in well-planned, viable mechanisms for HIV control in the event that the border between the two countries re-opens.

The estimated 2003 national prevalence rate for syphilis is 1.6%. As with HIV, rates vary widely across zones. Syphilis prevalence is highest in Southern Red Sea zone (4.6%), followed by Gash-Barka (3.1%). Urban and rural rates of syphilis infection are identical.

What is the take-home message? When examined with data from other sources, **overall HIV prevalence appears to be stabilizing.** Thus far, the country has been able to avoid a full-scale epidemic in rural areas. There is still a need, however, to continue prevention efforts in rural communities, particularly in anticipation of demobilisation, which will return thousands of military personnel (a seemingly high-HIV-prevalence group according to this assessment) back to their home villages. The data from this round of ANC sentinel surveillance suggest that certain **sub-groups exhibit very high rates of infection, which implies that we need to intensify prevention efforts and refine our targeting**—both geographically and socio-demographically. The data also indicate a need for **greater investment in HIV/AIDS care and support** programmes that address the special needs of different population groups affected by HIV.

In moving forward, it is important to remember that **the 2003 data only give us a snapshot of the current HIV situation, which is a result of past behaviors and past HIV control efforts**. The surveillance data should not be used to evaluate our current prevention programmes. It is encouraging that the overall 2003 estimate is lower than expected. However, it is unclear whether the rate of new HIV infections is decreasing. HIV prevalence among the youngest women (15–19 year olds) is only 1.2%—a very positive indicator in terms of the rate of new infections. However, the high prevalence among young, unmarried pregnant women in urban ANC sites underscores the need for a greater investment in targeted HIV prevention among unmarried youth. The findings from this round of sentinel surveillance serve as a call-to-action to **repeat HIV seroprevalence assessments every year in order to make definitive statements about current and future trends in and the status of the epidemic** in our country.

Background

Sentinel surveillance involves collecting cross-sectional HIV prevalence data over time from the same or similar locations and population groups. It is a useful way to monitor trends in HIV infection and to identify differentials between geographic areas and/or population groups within a particular country.

HIV sentinel surveillance among pregnant women attending antenatal clinics (ANC) forms the basis for mapping and tracking the HIV epidemic worldwide. International evidence shows that the HIV prevalence among ANC attendees closely reflects the HIV prevalence in the general adult population. For this reason, ANC HIV sentinel surveillance provides important data on the status of the epidemic over time. When sociodemographic information is also collected with blood samples, sentinel surveillance provides important information that can then be used to design appropriate HIV interventions and services for segments of the population that are either disproportionately infected or at risk of infection.

Previous HIV Estimates

Prior to the 2003 assessment, there were a number of attempts to generate HIV sero-prevalence data for Eritrea. In 1994, an HIV surveillance activity carried out in the capital city, Asmara, indicated a prevalence rate of 3%. In 1997, a small study among pregnant women attending selected ANC sites in all six zones of the country yielded an HIV prevalence rate of 2.0%. In 1999, the MoH carried out its first round of HIV sentinel surveillance among 2,244 ANC attendees, as well as among sex workers and patients attending sexually transmitted infection (STI) clinics. This study, which yielded an HIV prevalence rate among ANC attendees of 4.2%, was limited to urban areas in Maekel, Debub, Anseba, and Northern Red Sea zones. In 2001, the MoH conducted an HIV/AIDS/STI behavioural and HIV serological survey. A total of 583 ANC attendees were included in that study. The weighted HIV prevalence among ANC attendees was 2.8%, compared with weighted HIV prevalence rates of 2.4% in the general adult population, 0.1% among secondary school students, 4.6% among military personnel, and 22.8% among female bar workers.

Despite these early efforts to estimate HIV prevalence in Eritrea, it is not yet possible to draw major conclusions regarding trends. This is due to a number of factors such as small sample sizes, unclear methodologies for data collection and analysis, and the fact that the populations from which the data were collected were not consistent across time (e.g., some studies were limited to certain geographic areas or ANC sites). Thus, there is an urgent need for methodologically rigorous assessment of HIV prevalance that can be repeated over time to generate quality trend data. This data can then be used for advocacy, planning, and the assessment of prevention impact within the country.

The 2003 Round of Sentinel Surveillance

The 2003 round of HIV ANC sentinel surveillance aimed to generate timely and quality data on the magnitude of HIV in Eritrea. The following were the main objectives of this assessment:

1. To determine the current prevalence of HIV and syphilis infection in pregnant women seeking ANC
2. To establish a basis for comparison with data from subsequent rounds of surveillance in order to assess trends in HIV and syphilis prevalence
3. To identify key geographic areas and sociodemographic factors associated with increased HIV infectivity in Eritrea.

Boxes 2 and 3 (pages 13–14) present a detailed description of the methods employed in this assessment. In brief, the assessment included 14 urban and 29 rural ANC sites. For the analysis, small sites within certain geographic areas were combined to form clusters. In Maekel, two sites—Edaga Hamus Mini Hospital and Akria Community Hospital—each formed their own cluster. There were a total of 12 clusters in the analysis, with a minimum of two clusters per zone (rural and urban, if possible). Two exceptions were Maekel zone (which had two urban sites and one rural site) and Southern Red Sea zone (which had one major urban site and a small rural site combined to form one single site for the entire zone).

Table 1 presents the number of women enrolled in the 2003 round of HIV ANC sentinel surveillance, according to zone, cluster, and geographic location.

Virtually all women (98%) included in the assessment were of Eritrean origin. The average age in the sample was 25.9 years (26.0 in rural ANC sites and 25.8 in urban ANC sites). One-half of the subjects were between the ages of 20 and 29 years old. The youngest pregnant woman was 14 years old, and the oldest was 50 years old. On average, women in rural sites had more live births (i.e., higher parity) than their counterparts in urban sites (2.5 versus 1.9 live births, respectively). They also had a higher number of previous pregnancies (3.7 and 3.1, respectively). Table 2 presents additional characteristics of the sample.

Table 1. Number of pregnant women in the 2003 sample, according to zone, cluster, and geographic location.

Zone	Cluster[1]	Geographic Location	Number
Maekel	1. Edaga Hamus Mini Hosp	Urban	600
	2. Akria Community Hosp	Urban	366
	3. Serejeka Cluster	Rural	401
Debub	4. Mendefera Cluster	Urban	353
	5. Areza Cluster	Rural	298
Anseba	6. Keren Cluster	Urban	434
	7. Geleb Cluster	Rural	365
Gash Barka	8. Barentu/Agordat Cluster	Urban	420
	9. Haycota Cluster	Rural	453
Northern Red Sea	10. Massawa Cluster	Urban	475
	11. Shieb Cluster	Rural	174
Southern Red Sea	12. Assab/Tio Cluster	Urban/Rural	222
Total Number of Pregnant Women			**4561**

[1]**Serejeka cluster** included Serejeka Community Hospital and the following health stations: Zagir, Weki, Geshnashamin, Embaderho, Beleza, Azien, Adi-Shaka. **Areza cluster** included Areza Community Hospital and the following health stations: Ziban Debri, Maidima, Adi Guroto, Adi Gulti. **Mendefera cluster** included Mendefera Hospital and Mendefera Hospital MCH Clinic. **Keren cluster** included Joko MCH Clinic, Hagaz Hospital, and the following health stations: Magore, Blocho, and Waliko. **Geleb cluster** included the following health stations: Geleb, Elabered, Kermed, Hashishay, and Fredant. **Barentu cluster** included Barentu Hospital and Agordat Hospital. **Haycota cluster** included the following community hospitals: Haycota, Mulki, Mogolo, and Guluj. **Massawa cluster** included Amatere MCH Clinic, Kutmia Health Station, and Ghindae Hospital. **Shieb cluster** included Shieb Community Hospital and the following health stations: Foro, Robrobia, and Ghelaelo. **Assab/Tio cluster** included Assab Hospital, Tio Mini Hospital, and Bahti Meskerem MCH Clinic.

Table 2. Percent distribution of pregnant women included in the 2003 round of ANC HIV sentinel surveillance, according to geographic location and selected background characteristics

Background Characteristic	Geographic Location		
	Urban ANC Sites	*Rural ANC Sites*	*All Sites*
Age			
< 15	0.1	0.2	0.2
15–19	16.2	18.7	17.1
20–24	27.9	25.1	26.9
25–29	26.9	21.6	24.9
30–34	17.0	18.6	17.6
35–39	8.3	10.4	9.1
40+	2.7	4.1	3.2
Unknown	0.9	1.3	1.0
Nationality			
Eritrean	96.4	99.5	97.6
Ethiopian	3.1	0.3	2.0
Other	0.1	0.1	0.1
Unknown	0.4	0.1	0.3
Education			
Illiterate	27.8	57.2	38.9
Elementary	26.3	28.4	27.1
Junior secondary	15.4	9.1	13.0
Senior secondary	28.8	4.4	19.6
University and beyond	0.5	0.0	0.3
Other/Unknown	1.3	0.9	1.1
Marital Status			
Single	7.2	3.5	5.8
Married	91.8	95.8	93.3
Divorced/widowed	0.7	0.3	0.6
Other/Unknown	0.3	0.3	0.3
Religion			
Orthodox	58.5	51.4	55.8
Muslim	36.1	45.3	39.6
Catholic	3.9	2.7	3.4
Protestant	1.0	0.1	0.6
Other/Unknown	0.6	0.5	0.6
Woman's Occupation			
Unemployed	0.5	0.4	0.4
Housewife	83.8	95.2	88.1
Government worker	4.5	0.3	3.0
Private-sector worker	3.1	0.5	2.1
Bar/hotel/tea shop worker	1.1	0.6	0.9
Daily labourer	1.2	0.3	0.9
Servant/housemaid	1.3	0.3	0.9
Military/National Service	2.1	0.4	1.5
Other	2.0	1.8	1.9
Unknown	0.5	0.1	0.3
Partner's Occupation			
Unemployed	1.0	0.2	0.7
Government worker	7.1	1.5	5.0
Private-sector worker	5.8	1.5	4.1
Daily labourer	5.0	1.9	3.8
Military/National Service	49.2	47.7	48.7
Student	1.5	1.8	1.6
Merchant	5.5	2.0	4.2
Truck/bus driver	4.4	1.2	3.2
Farmer	10.9	37.8	21.0
Lives abroad or died	1.7	0.5	1.2
Fisherman	1.9	2.0	1.9
Other	5.4	1.3	3.8
Unknown	0.8	0.5	0.7
TOTAL NUMER OF WOMEN	**2838**	**1723**	**4561**

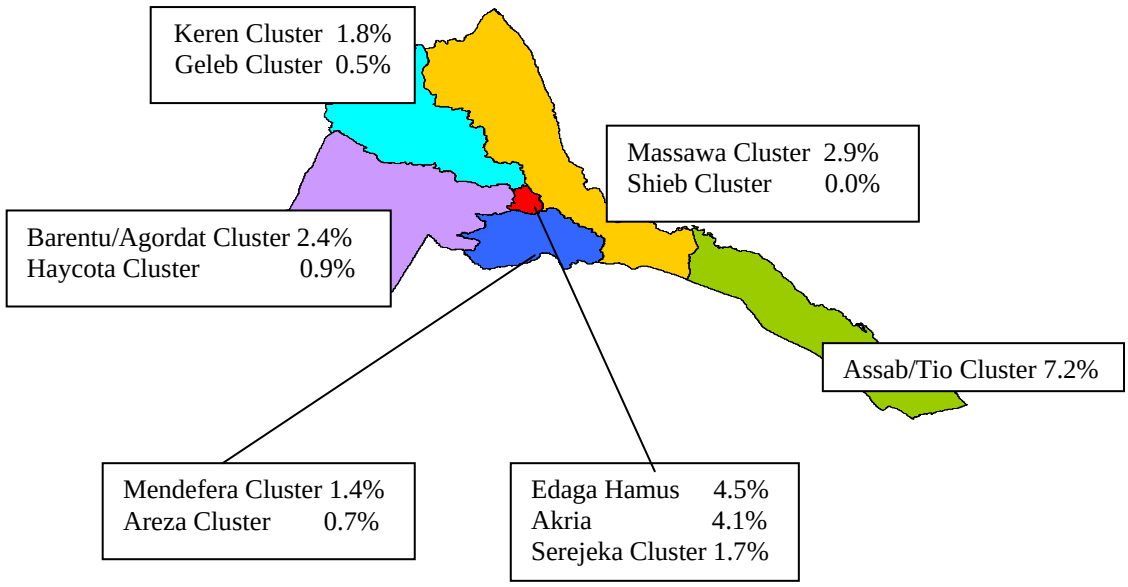
Key Results

Geographic Differences in HIV Prevalence

According to the 2003 round of ANC sentinel surveillance, the estimated national HIV prevalence rate is 2.4%. HIV prevalence varies considerably by zone. Rates are highest among ANC attendees in Southern Red Sea (7.2%) followed by Maekel (3.6%), Northern Red Sea (2.2%), Gash-Barka (1.6%), Anseba (1.3%), and Debub (1.1%). Figure 1 highlights differences in HIV prevalence by sentinel surveillance cluster. As seen in the figure, the "hot spots" for HIV infection are Assab/Tio Cluster in Southern Red Sea zone, Edaga Hamus Mini Hospital and Akria Community Hospital in Maekel zone, and Massawa Cluster in Northern Red Sea zone.

In 2003, 7 out of every 100 pregnant women in Southern Red Sea zone and 4 out of every 100 pregnant women in Maekel zone were infected with HIV.

Figure 1. HIV Prevalence among ANC Attendees, by Cluster, 2003



Geographic Differences in Syphilis Prevalence

The estimated national prevalence rate for syphilis is 1.6%. As with HIV, rates vary across zones. Syphilis prevalence is highest in Southern Red Sea zone (4.6%), followed by Gash-Barka (3.1%), Anseba (2.0%), Northern Red Sea (1.1%), Maekel (0.8%), and Debub (0.2%). The major "hot spots" for syphilis infection among pregnant women are Assab/Tio Cluster (4.6%), Haycota Cluster (4.3%), Keren Cluster (3.0%), and Barentu/Agordat Cluster (1.9%). Urban and rural rates of syphilis infection are identical (1.6%).

The Link Between Syphilis Infection and HIV Infection

International experience has shown that STI infection increases one's risk of contracting HIV. Syphilis, in particular, is also associated with adverse perinatal outcomes such as stillbirth. Interestingly, with the exception of Assab/Tio Cluster in Southern Red Sea zone, the hot spots for HIV infection are not the same hot spots for syphilis infection. Nevertheless, when one looks at the association between the two diseases at the individual level, a pregnant woman with syphilis infection is almost four times more likely to be infected with HIV than a pregnant woman who is not infected with syphilis. HIV infection rates are 8.3% among pregnant women with syphilis and 2.3% among pregnant women who do not have syphilis. Although the assessment was not designed for further

disaggregation of the data, the data suggest an even more striking relationship between syphilis infection and HIV infection in urban ANC sites, where over 13% of women with syphilis had HIV. In rural sites, no syphilis-infected women tested positive for HIV.

A pregnant woman with syphilis is four times more likely to be infected with HIV than a pregnant woman who does not have syphilis.

Key Risk Factors for HIV Infection

The collection of information on a select number of sociodemographic factors in addition to the blood samples enables us to identify key factors associated with elevated HIV infection rates. Table 3 presents 2003 HIV prevalence rates according to key sociodemographic characteristics. With the exception of women's occupation, no data are presented in the table for categories with fewer than 50 women. The following are highlights of observed differentials in HIV infection.

- **Geographic location:** As mentioned earlier, HIV prevalence rates are much higher among pregnant women found in urban ANC sites (3.3%) than among pregnant women found in rural ANC sites (0.9%).
- **Age:** HIV prevalence increases from 1.2% among 15–19 year olds, peaks at 3.6% in the age group 25–29, and declines thereafter.
- **Nationality:** Women of Ethiopian origin have a prevalence rate that is eight times higher than that of Eritreans (16.1% and 2.1%, respectively).
- **Marital status:** Women who are not married have rates that are at least three times higher than that of married women (6.9% and 2.1%, respectively).
- **Education:** HIV prevalence generally rises with education level (from 1.2% among illiterate women to 4.4% among women who completed senior secondary school).
- **Woman's occupation:** In the 2003 sample, there was not much diversity in terms of women's occupation; 88% of respondents reported being housewives. Nevertheless, the following sub-groups stand out as being disproportionately infected with HIV: bar, hotel, or tea shop workers; servants or housemaids; private-sector workers; military or National Service personnel; and daily labourers. Further investigation is needed to truly understand the degree to which HIV affects the above groups.
- **Husband's/partner's occupation:** Women whose partners were truck/bus drivers (4.1%), merchants (3.1%), or in the military/National Service (3.0%) exhibited elevated levels of HIV infection.

The average age of pregnant women infected with HIV did not differ substantially from that of HIV-negative pregnant women (26.2 years versus 25.8 years, respectively). However, **there were differences in parity and gravidity between the two groups**. On average, HIV-positive pregnant women included in this assessment had 2.7 previous pregnancies and 1.4 previous live births, compared with 3.3 previous pregnancies and 2.1 previous live births among their HIV-negative counterparts.

Figure 2. Urban-Rural Differences in HIV Prevalence, Eritrea, 2003

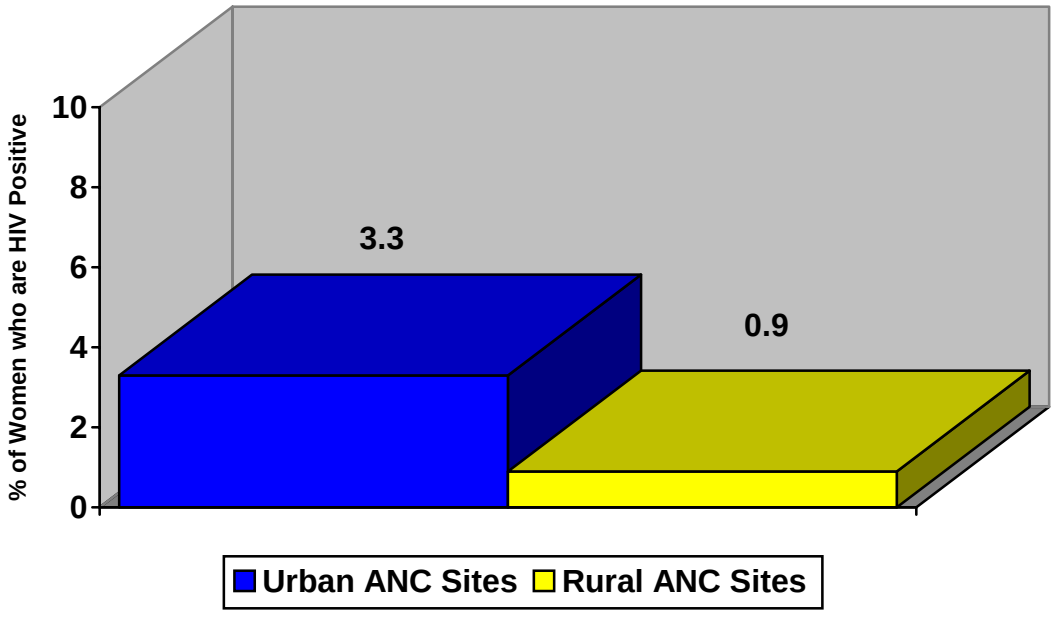
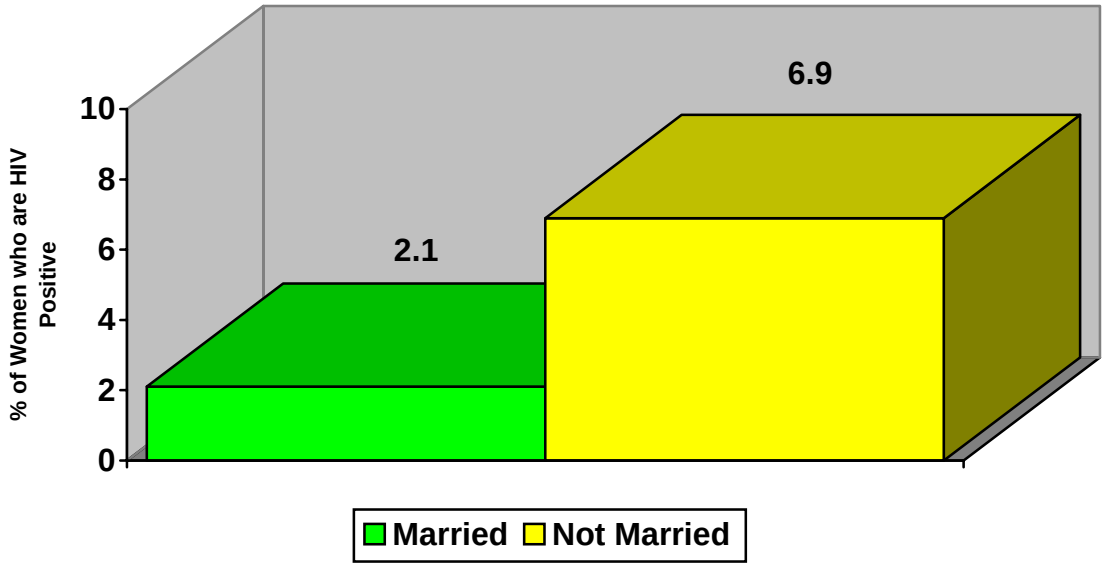


Figure 3. HIV Prevalence by Marital Status, Eritrea, 2003



HIV in Young Women: A Glimpse into Prevention Impact

By examining HIV prevalence among young pregnant women (age 15–24), we can get a fairly robust indication of our progress in eradicating HIV infection in Eritrea. This is because the average duration of HIV infection among young people is short. As a result, trends in HIV prevalence among 15–24 year olds are a good proxy for trends in new HIV infections and risk behaviors. According to the 2003 round of ANC sentinel surveillance, 2.0% of pregnant women age 15–24 are infected with HIV. Rates are much higher among young women at urban ANC sites (2.8%) than their counterparts at rural ANC sites (0.9%). When one further examines these differences according to marital status, it becomes clear that young, unmarried women at urban sites are an extremely vulnerable group. Of the 134 never-married women age 15–24 found at urban ANC sites, 7.5% of them were HIV positive. This elevated rate of infection holds true even among the youngest unmarried women (15–19 year olds) at urban sites, who had a rate of infection of 6.9%. Notably, 6 out of 10 of those HIV-infected women have partners who are in the military or National Service.

HIV prevalence among all 15–24 year olds is 2.0%, and it is highest in urban ANC sites (2.8%). What is encouraging, however, is that the youngest women, 15–19 year olds, have a very low HIV prevalence (1.2%)—much lower than the prevalence among 20–24 year olds (2.7%). Even among urban 15–19 year olds, the prevalence is low (1.5%) compared to urban 20–24 year olds (3.5%).

Young, never-married women at urban sites are disproportionately infected. According to the 2003 data, for every 100 urban unmarried pregnant women age 15–24 years, almost 8 are infected with HIV. The majority of those women reported having partners who are in the military or National Service.

Table 3. HIV prevalence rates according to background characteristics,
ANC HIV sentinel surveillance, Eritrea, 2003

Background Characteristic	HIV Prevalence (%)	No. of Women
Age		
< 15	*	7
15–19	1.2	781
20–24	2.7	1225
25–29	3.6	1137
30–34	2.4	802
35–39	1.2	415
40+	1.4	147
Unknown	*	47
Nationality		
Eritrean	2.1	4450
Ethiopian	16.1	93
Other/Unknown	*	18
Education		
Illiterate	1.2	1775
Elementary	2.0	1235
Junior secondary	3.5	593
Senior secondary	4.4	892
University and beyond	*	14
Marital Status		
Not married	6.9	4256
Married	2.1	305
Religion		
Orthodox	3.6	1804
Muslim	0.9	2545
Other	1.1	186
Woman's Occupation		
Unemployed	*	20
Housewife	2.0	4018
Government worker	1.5	135
Private-sector worker	4.1	97
Bar/hotel/tea shop worker	11.9	42
Daily labourer	7.7	39
Servant/housemaid	9.5	42
Military/National Service	6.0	67
Other	6.9	87
Partner's Occupation		
Unemployed	*	31
Government worker	1.8	227
Private-sector worker	1.6	189
Daily labourer	1.7	174
Military/National Service	3.0	2219
Student	0.0	73
Merchant	3.1	191
Truck/bus driver	4.1	146
Farmer	1.0	960
Lives abroad or died	5.5	55
Fisherman	1.1	88
Other	3.4	175
Unknown	*	33

**Fewer than 50 women in this category; therefore, HIV prevalence estimate is not presented.*

Box 1. WHICH WOMEN HAVE THE HIGHEST HIV PREVALENCE RATES?

- urban women (3.3%)
- women age 25–29 (3.6%)
- women of Ethiopian origin (16.1%)
- women with senior secondary school educations (4.4%)
- unmarried women (6.9%)
- Orthodox Christians (3.6%)
- women who work in bars, hotels, or tea shops (11.9%)
- women whose partners live abroad or died (5.5%), or whose partners are truck or bus drivers (4.1%)

Isolating the Effects of Different Factors

As mentioned earlier, information on the following background characteristics was collected:

- age of the pregnant woman
- whether the ANC site where she was found is in an urban area versus a rural area
- her nationality
- her education level
- her marital status
- her religion
- her number of previous pregnancies (gravidity)
- her number of previous live births (parity)
- her occupation
- her husband's/partner's occupation

Of the sociodemographic variables collected in the 2003 assessment, the best predictors of current HIV infection were:

- **where the woman was interviewed (rural vs. urban site)**
- **her religion (Muslim vs. not)**
- **her marital status (married vs. not)**
- **whether she is in a high-HIV-risk occupation (i.e., bar/hotel/tea shop worker, merchant, daily labourer, maid, or military/National Service personnel)**
- **whether she has syphilis.**

It is important to recognize that some of the above factors are related to one another. For example, highly educated women have a tendency to be found in urban areas. They also tend to marry educated men and might be older or have fewer children. As part of the analysis, an effort was made to examine the relationship between HIV status and each of the aforementioned background variables, while taking other important background characteristics associated with HIV infection into account.

When one examines associations between HIV infection and each of the above background characteristics, the following characteristics stand out as major predictors of HIV serostatus: geographic location (rural versus urban), religion (Muslim versus Christian), marital status (married versus unmarried), presence of syphilis infection, and HIV occupational risk category (i.e., whether the woman was a bar/hotel/tea shop worker, merchant, daily labourer, maid, or military personnel versus not). It should be kept in mind, however, that there was not enough diversity within the sample to truly explore the degree to which two highly important factors—nationality and occupation—contribute to a woman's risk of HIV infection in the presence of other important factors. Notably, however, even when one controls for other important factors in HIV transmission, women from urban sites are still three times more likely to be infected with HIV than women from rural sites.

What Does It All Mean?

The estimated national HIV prevalence for 2003 (2.4%) is encouraging. However, it is important to remember that trend data (i.e., data from **multiple rounds of sentinel surveillance) are required in order to correctly interpret the status of the HIV epidemic in Eritrea.** We are not yet at a stage to make definitive statements about HIV trends.

Nevertheless, more-detailed information is available from the 1999 sentinel surveillance round than previous surveillance efforts, enabling us to conduct a very basic analysis of trends in HIV prevalence between 1999 and 2003 among selected urban ANC sites in four zones (Table 4). It is important to note, however, that Ethiopians comprised a much larger proportion of the sample in 1999 than in 2003. Consequently, the 1999 data are presented for all subjects, Eritreans only, and Ethiopians only.

Generally speaking, the data from these urban sites look encouraging. In addition, when one attempts to examine potential trends by age, the data from the two surveillance rounds clearly indicate that there is not an increasing trend in HIV prevalence in the youngest age groups (e.g., 15–19, 20–24)—age groups for which sexual activity has begun more recently and where HIV prevalence rates more closely reflect recent infections (data not shown).

Information on new infections is hard to come by, but it is encouraging that the prevalence rate among young ANC attendees (i.e., pregnant women age 15–24) in the 2003 sample is not higher than the national average. Nevertheless, **the extremely elevated rate of**

infection among young, unmarried women in urban locations is a wake-up call for us to intensify prevention efforts targeting youth (particularly in urban areas), in order to further contain the spread of HIV/AIDS.

Some of the observations from this assessment have been noted in other African contexts. For example, the lower HIV prevalence among Muslims than Christian religious groups in Eritrea has also been found in most other areas of Africa. Neighboring African countries that are predominantly Muslim (e.g., Sudan, Somalia) continue to have fairly low HIV prevalence rates. In moving forward, it is important that we glean lessons learned from other contexts with similar population dynamics.

What else does the 2003 round of ANC HIV sentinel surveillance tell us? First and foremost, **the epidemic is not homogeneously distributed throughout Eritrea**. Within each zone, urban centres have much higher rates than rural centres. In addition, three clusters—**Assab (7%), Asmara (4%), and Massawa (3%)—have HIV prevalence rates that are well above the national average** (2.4%).

The data also tell us that **a number of population groups have elevated rates of HIV infection**. Those groups include:

- Urban women
- Unmarried women
- Women whose partners are bus or truck drivers or merchants
- Women whose partners are in the military/National Service

Almost 9 out of every 10 women in this assessment were housewives, making it difficult to make statements about the toll of the epidemic on women from particular occupational categories. Nevertheless, the data suggest that **women who work in bars, hotels, or tea shops; who are daily labourers; who are housemaids/servants; who are in the military or National Service; or who work within the private sector are disproportionately affected by HIV**. In addition, women of Ethiopian origin, who were found in small numbers in this assessment, were also disproportionately infected with HIV.

It should be kept in mind that the sentinel surveillance was not designed to yield statistically precise estimates of HIV infection within specific subgroups of the population. The 2003 findings simply highlight the need for further investigation and programme effort specific to the subgroups mentioned earlier. By refining and refocusing our current and future HIV control efforts based on what we now know, it is likely that we will achieve success in controlling the epidemic.

Important Caveats

The nature of this assessment, which is based in health facilities providing ANC, might prompt the question of whether the results from this large sample of ANC attendees can be generalized to all women of reproductive age, as well as Eritrea's general population. There are, indeed, differences between urban and rural areas in terms of ANC care seeking. According to the 2002 Eritrean Demographic and Health Survey, 92% of urban women sought ANC, compared with only 61% of rural women. Thus, the surveillance probably paints a fairly accurate picture in terms of urban ANC sites. Whether our observations among women found at rural sites is a true representation of reality is less clear.

It is also important to acknowledge that the differences noted between women in urban and rural ANC sites might not be an accurate reflection of true urban-rural differences. This is due to the fact that it is not uncommon for some pregnant women from rural areas to seek antenatal and/or delivery care in urban areas. Future rounds of sentinel surveillance need to collect information on the woman's place of residence in order to have a better understanding of urban-rural differentials in HIV infection.

Also, in order to draw comparisons between women from urban and rural ANC sites, the 2003 round of sentinel surveillance oversampled women from urban sites. The final sample was 62% urban and 38% rural, which is different from the estimated national urban-rural distribution of 38% urban and 62% rural (2002 Eritrean Demographic and Health Survey). In this round of ANC sentinel surveillance, the overall prevalence rates were not corrected for this oversampling. **For future rounds of sentinel surveillance, we should use any available information on the estimated urban-rural distribution within each zoba and weight the data accordingly**

in order to make the prevalence estimates more nationally representative.

With the exception of certain sub-groups, the data paint a fairly positive picture of the epidemic in the country. **We have clearly enjoyed some success in HIV control. However, it is important to acknowledge the roles that** a) the **mass mobilisation of youth**—especially young men—into the military and National Service and b) the **closure of the border between Eritrea and Ethiopia** (where HIV rates are known to be considerably higher than in Eritrea) **have played in shaping the epidemic** within this country.

Table 4. Comparison of HIV prevalence rates between 1999 and 2003, by zone and nationality, Eritrea

Zone	Health Facility	2003		1999					
				All Subjects		Eritreans Only		Ethiopians Only	
		No. of women	HIV prev.	No. of women	HIV prev.	No. of women	HIV prev.	No. of women	HIV prev.
Maekel	Edaga Hamus M/Hosp	600	4.5%	181	7.7%	166	7.2%	15	13.3%
	Akria Com Hosp	366	4.1%	149	7.0%	121	4.1%	28	7.1%
Debub	Mendefera Hosp	264	1.5%	174	4.0%	167	3.6%	7	14.3%
Anseba	Joko Com Hosp	170	2.4%	462	3.0%	447	2.9%	14	7.1%
	Hagaz Com Hosp	88	1.1%	162	0.6%	161	0.6%	1	0%
NRS	Amatere MCH Clinic	216	4.2%	74	8.1%	62	6.5%	12	16.7%
	Kutmia Com Hosp	53	7.5%	100	8.0%	81	6.2%	19	15.8%

Where Do We Go From Here?

In terms of next steps, there are six major recommendations:

- Better geographic targeting
- Tailored interventions to vulnerable groups
- Design of appropriate behaviour change materials and media
- Expansion of HIV care and support efforts
- Annual rounds of HIV sentinel surveillance
- Integrated assessment of the status of the epidemic

Better Geographic Targeting of Interventions. . . It is clear that blanket coverage of HIV control interventions is not what is needed in the Eritrean context. The hot spots for HIV infection—Assab, Asmara, and Massawa—require intensive HIV prevention, mitigation, and care and support activities now and into the future. Although intensive efforts are required in urban areas, continued effort is also required to maintain low prevalence levels in rural areas.

Tailored HIV Control Interventions for Sub-Groups that are Most Vulnerable to HIV Infection. . . Based on the findings from the 2003 HIV sentinel surveillance, we need to put greater emphasis on reaching young people in urban areas, military/National Service personnel, truck and bus drivers, and women in particular high-HIV-risk occupational categories. Further investigation is needed to better understand why certain sub-groups are more affected than others. It is also advisable to integrate HIV services with other services (e.g., STI services) to ensure that we are not missing opportunities to provide vulnerable groups with HIV prevention and care information and services.

Design of Appropriate Behaviour Change Materials and Media. . . It is imperative that we take a step back and evaluate the appropriateness and effectiveness of our communications materials and other media used to target groups at greatest risk of acquiring and transmitting HIV infection. In addition to considering the content of our BCC initiatives, we should also consider where and how different types of individuals obtain (e.g., from radio or television) and best internalise information. We should also explore different mechanisms for effectively diffusing innovations, ideas, etc. throughout the population.

Expansion of HIV Care and Support Efforts . . . Programmes to provide home- and community-based care, as well as appropriate health care for people living with HIV/AIDS, should be planned, designed, and implemented in areas where the majority of HIV/AIDS patients are likely to be found. We must also address ways to make our efforts more accessible and appealing based on the characteristics of those most likely to be affected by the epidemic in Eritrea. This means making greater efforts to build programmes in urban areas (especially Assab, Asmara, and Massawa) and developing services that match the demographic profile of the population most affected by HIV.

Annual HIV Sentinel Surveillance. . . In order to monitor and assess the trends in HIV infection in Eritrea, it is important to conduct ANC sentinel surveillance on an annual basis using the same sites (or expanding the number of sites) and the same study methodology over time. The variations in HIV prevalence across population groups points to the need for frequent monitoring of HIV prevalence. In addition, certain contextual factors such as the highly mobile and highly HIV-infected sex worker population, as well as the mobilisation and deployment of the majority of the nation's youth in military and National Service, make regular monitoring of HIV infection trends and differentials even more important.

It might also be fruitful to conduct a smaller-scale seroprevalence assessment among individuals who might not be best reached through an ANC setting (e.g., women working in bars or hotels, sex workers, etc.).

Integrated Assessment of the Status of the Epidemic. . . Seroprevalence data only give us a partial picture of the epidemic. Sentinel surveillance tells us where we are as a result of the past. It is therefore advisable to consult other data sources (e.g., health-service statistics, AIDS case reports, data on general mortality trends) in order to achieve a more comprehensive understanding of the epidemic in this country. For example, behavioural surveillance will give us an indication of current behaviours, attitudes, and norms. It is only when we examine sentinel surveillance data along with other types of data that we achieve a full understanding of where we stand and where we are going.

BOX 2. Overview of the Methods Used in the 2003 Sentinel Surveillance

I. Selection of Sentinel Surveillance Sites: This round of HIV sentinel surveillance was conducted in 14 urban and 29 rural ANC sites throughout the country. A number of small sites within certain geographic areas were combined to form clusters. There were a total of 12 sites/clusters in this assessment, with a minimum of two sites/clusters per zone (rural and urban, if possible). Two exceptions were Maekel zone (which had two urban sites and one rural site) and Southern Red Sea zone (which had one major urban site and a small rural site combined to form one single site for that zone). Study sites (see Table 1, page 3) were selected based on the following criteria:

- Geographical representation of all zones
- Urban/rural representation
- Volume of ANC attendance
- Sites used in 1999 HIV sentinel surveillance
- Availability of facilities for processing and storing blood specimens
- Commitment and willingness of the health staff to participate
- Feasibility for supervision and shipment of specimens to the NHL in Asmara
- Other on-going or planned surveillance activities (e.g., behavioural surveillance)

II. Study Population: The HIV sentinel surveillance survey was conducted among pregnant women attending ANCs at the 12 selected health facilities or clusters (combined group of health facilities). All pregnant women, regardless of their age, attending ANC for the first visit in the current pregnancy were recruited into the survey consecutively until the required sample size was attained using unlinked anonymous procedures.

III. Preparation for Field Collection of Specimens: The MoH prepared kits for the staff of each selected health facility to use to enrol clients and obtain blood specimens. These materials included registers and forms for collecting information and monitoring the process of enrolment at each health facility. In addition, these kits contained materials for collecting and labelling the blood specimens and materials for performing on-site syphilis testing of the blood specimens.

IV. Background Characteristics: In addition to collecting blood specimens from pregnant women, field staff collected information on important background characteristics to consider during the analysis. Those characteristics are as follows:

- Age
- Religion
- Nationality
- Total number of pregnancies (gravidity)
- Number of previous live births (parity)
- Marital status
- Education
- Occupation
- Partner's occupation

V. Training of Health Staff: Each participating health facility sent at least one clinic staff member and, if available, a laboratory staff member to an orientation and training session that was held in Asmara in April 2003. At the end of this training, the health care workers were supplied with the client enrolment and specimen collection materials.

VI. Sampling and Time Frame: The aim was to obtain a minimum sample size of 300 pregnant women from each of the selected sites or clusters within a 10-week period. This is in line with the World Health Organisation (WHO) guidelines on HIV sentinel surveillance among ANC attendees that recommend a sample size of 250–300 per site (see the following page for more information).

VII. Blood Specimen Testing at the National Health Laboratory: The laboratory staff of the National Health Laboratory completed the HIV testing of the sentinel surveillance specimens in December 2003. Syphilis testing was completed in early 2004.

VIII. Data Management: During December 2003 and January 2004, NATCoD staff performed preliminary data entry. Repeat data entry and data cleaning were carried out by an independent team of data entry clerks, led by a local consultant who has data management expertise.

BOX 3. Sampling Methodology

As mentioned on the previous page, Eritrea's 2003 round of ANC sentinel surveillance followed a methodology prescribed in the UNAIDS/WHO guidelines for conducting HIV sentinel sero-surveys among pregnant women. This section provides additional details on the sampling aspects of that methodology.

Time Frame

UNAIDS and WHO recommend that the data collection period for one round of ANC sentinel surveillance be 4–12 weeks in length. Generally speaking, 4–12 weeks is an adequate amount of time to achieve the desired sample size (see below). In addition, placing these limits in terms of the length of data collection ensures that the data from a given round of surveillance closely reflect a single point in time. If the data collection is extended beyond the three-month maximum, it is possible that changing dynamics of the epidemic will not only affect prevalence estimates, but may limit our ability to correctly interpret the data.

Sample Size Determination

The desired sample size for the 2003 round of ANC sentinel surveillance was based on a number factors such as the amount of change in HIV prevalence the MoH wanted to be able to detect over time, the desired precision of our prevalence estimates, and the resources (e.g., time, money, health personnel) available to conduct the assessment. After careful deliberation, it was determined that, given an assumed national HIV prevalence rate of 2–3 percent (based on previous data) and the resources available, a target sample size of 300 pregnant women from each site/cluster was appropriate. This number was not only associated with an acceptable margin of error (i.e., 95% confidence interval); it would also enable the MoH to detect a significant amount of change between two rounds of sentinel surveillance.

Why did some sites included in Eritrea's 2003 round of ANC sentinel surveillance contribute more than 300 women to the final sample? This was done for two reasons: 1) to enable the MoH to track trends in HIV prevalence among certain ANC sites/clusters that account for a large proportion of pregnant women and 2) in the interest of exploring certain differentials, the larger sample sizes ensured that there were enough women in each category of the variable(s) of interest. For example, the MoH wanted to be able to explore age differentials in HIV prevalence, and increasing the sample size beyond 300 in certain sites ensured that there were a sufficient number of women in each age group to highlight potential age differences in prevalence.

Sampling Approach

Sampling was done in two stages:

1. Selection of a sample of facilities that provide ANC
2. Selection of a sample of pregnant women at the selected ANC facilities

ANC facilities were selected using non-probability sampling. In other words, sites were included in the 2003 round based on certain criteria (see section I of Box 2). Within each selected site, the MoH used convenience sampling to achieve the desired number of pregnant women to be included in the study from that site. More specifically, within a given ANC site, the first pregnant woman to meet the eligibility criteria within the designated time frame for data collection was included in the study. Each eligible pregnant woman thereafter was included until the desired sample size was achieved or until the data collection period ended. This sampling approach is not only easy to implement; it also reduces the potential bias that might be introduced if health personnel were responsible for selecting which pregnant women are included in the surveillance round.

For more information on HIV/AIDS in Eritrea, please contact the National HIV/AIDS/STI and TB Control Division of the Ministry of Health (telephone number: 291-1-121562).