

Project AXxes

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IMPACT BEYOND THE INDICATORS

How strengthening health care systems has impacted the lives of millions in a USAID-funded project in the Democratic Republic of Congo

(September 2006 - September 2010)

Integrated Health Services Project (Project AXxes)
USAID Cooperative Agreement No: 623-A-00-06-00058-00
Democratic Republic of Congo



with implementing partners:



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INTEGRATED SERVICE DELIVERY

ABOUT PROJECT AXXES

The Integrated Health Services Project (Project AXxes) was a four-year \$60 million dollar USAID-financed primary health care project designed to revitalize 57 select health zones across the Democratic Republic of Congo (DRC).

Led by IMA World Health from 2006 to 2010, the main goal of AXxes was to provide integrated development assistance for primary health care health systems strengthening based on the “global assistance” (*Appui global*) strategy of the Ministry of Health.

INTRODUCTION: INTEGRATED SERVICE DELIVERY

The World Health Organization defines integrated service delivery as, “the organization and management of health services so that people get the care they need, when they need it, in ways that are user-friendly, achieve the desired results and provide value for money” (WHO, 2008).

The idea is that appropriate care is available when it is most needed; instead of a focus on one disease or health issue, the program treats the whole person. For example, while funding for an HIV/AIDS program may successfully help to raise awareness and prevention efforts among a population, that same population may also lack access to adequate antenatal care or safe drinking water—leaving them equally vulnerable to other diseases and health conditions. In this case, integrating the HIV/AIDS activities as part of a larger effort to strengthen the entire package of health services could serve the whole person and, consequently, the whole population more effectively and efficiently.

According to WHO, “integration is not a new topic – in the past it has been the subject of a rather polarized debate. It is once again topical, largely because of the rise of single-disease funding and in recognition of the fact that the health Millennium Development Goals will not be met without improving health *systems*” (WHO, 2008).



PROJECT AXXES: AN INTEGRATED APPROACH

Project AXxes was a prime example of successful integrated service delivery. Spread across 57 health zones and over 8 million persons in Eastern DRC, AXxes was a horizontal platform that allowed for the successful integration and coordination of technical interventions from many vertical and diverse funding streams to create an integrated approach to primary health care.

At the start of the project in 2006, approximately two-thirds of the health zones were nonfunctional or had very limited services according to conventional definitions of a functional health zone. In order to have a positive impact on any area of health, these zones needed to be revitalized and equipped to provide an array of health services. For this reason, the project’s assistance to

the 57 select health zones focused foremost on the package of primary health care interventions prioritized by the Ministry of Health.

This primary health care package included reinforcement of vaccination services, provision of pharmaceuticals and supplies to hospitals and health centers, and delivery of a full complement of maternal and child health services, including family planning and newborn and postpartum care.

All health zones received thorough training and were equipped in the prevention of HIV/AIDS and STIs, malaria diagnosis, regular surveillance of epidemics, and updated treatment and management of re-emerging diseases such as tuberculosis.

Significant resources were committed to the elaboration of water and sanitation systems and the rehabilitation of health facilities. The project also established or revamped 137 prevention of mother to child transmission (PMTCT) clinics to include updated WHO protocols such as triple antiretroviral therapy.

Support systems on the national, provincial, and health zone level included planning and management, health facility rehabilitation, training and supervision, supply line and cost recovery, and information and surveillance systems.



KEY SUCCESSES OF PROJECT AXES

As has been demonstrated, Project AXes covered a wide variety of activities to strengthen the health systems across all 57 of the targeted health zones—from counseling individual women on HIV/AIDS to training Ministry of Health staff on the newly implemented health management information system (HMIS).

Continually meeting and exceeding goals for project indicators, a summary of key successes is as follows:

- 1) **Health infrastructure.** Rehabilitation of 217 health facilities and construction of 130 facility incinerators.
- 2) **Capacity building and training.** Cumulative training of more than 33,000 health workers at all levels.
- 3) **Curative care.** Attainment of a 44% curative care utilization rate (up from <30% in year one).
- 4) **Fistula repair.** 1,276 fistulae repaired in projects years two, three and four.
- 5) **Antenatal care.** More than 1,000,000 antenatal visits (331,649 in year four versus 189,632 in year one).
- 6) **Malaria.** 661,839 pregnant women received Intermittent Preventive Treatment for malaria (212,896 in year four vs. 112,511 in year one).
- 7) **Malaria nets.** Distribution of more than 1 million long-lasting insecticide treated nets through prenatal and growth monitoring clinics.
- 8) **Assisted delivery.** 618,500 women received assisted delivery with Active Management of the Third Stage of Labor (AMSTL) protocol (282,948 in year four vs. 7,094 in year one).
- 9) **Sexual gender based violence.** Integration of SGBV interventions into the package of primary health care activities in health facilities throughout all 57 supported health zones.
- 10) **Family planning.** 849,306 new acceptors of a new method in family planning (283,166 in year four vs. 26,074 in year one).
- 11) **HIV/AIDS counseling for pregnant women.** More than 200,000 pregnant women received HIV counseling in 137 PMTCT clinics.

- 12) **Prevention of mother to child transmission of HIV/AIDS.** Prevention of HIV mother-to-child transmission in 983 HIV + women.
- 13) **HIV/AIDS counseling and testing.** 13,555 partners/husbands of pregnant women received HIV counseling and testing and received results (7,783 in year four versus zero in year one).
- 14) **Measles vaccination.** 818,368 children vaccinated for measles (251,343 in year 4 vs. 123,638 in year one).
- 15) **Tuberculosis.** Detection of 37,823 cases of Tuberculosis.
- 16) **Community care.** 310 community care sites established and functioning at year's end vs. 25 in year three (the first year of that initiative).
- 17) **Water and sanitation.** Construction of 629 spring caps, 196 facility latrines and 6,313 community latrines.
- 18) **Procurement and delivery.** Procurement, importation, and delivery of more than 100 air and sea freight shipments via Kinshasa, Bukavu and Lumbumbashi.

Project AXxes demonstrated that with the right kind of health zone assistance package, pragmatic project leadership, and an excellent collaboration of implementing partners, MOH authorities, and health zone personnel, it is possible to revitalize health care services even in nonfunctional health zones.

“I have been the MID for this District for almost ten years. All this time my dream has been to see someone intervening in *Appui global*. I am proud and ready to go for retirement now because this dream has come true. Our health personnel have begun an intensive training which I believe that couple with supply of medicines and equipment we will ensure quality services in the days to come.”

–Dr. Leon Manda, District Medical Officer in Kolwezi, DRC, at the start of Project AXxes

ABOUT IMA WORLD HEALTH

IMA World Health, a non-profit organization based in New Windsor, MD, advances health and healing to vulnerable and marginalized people in the developing world. Focusing on international health, IMA provides essential health care services and medical supplies to those most in need.

Forbes has named IMA one of the Ten Most Efficient charities for three straight years, and IMA has received Charity Navigator's highest rating for efficiency six years running. For more information, visit us at www.imaworldhealth.org or call 877-241-7952.

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WOMEN'S HEALTH

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INTRODUCTION: WOMEN'S HEALTH

In areas of conflict, disaster, or high poverty, women and children often bear the heaviest health burdens. Childbirth-related injuries and illnesses are particularly devastating for women in these areas, as essentially all (99%) of the 500,000 maternal deaths every year occur in developing countries (WHO, 2009).

In addition, longstanding social and cultural belief systems often marginalize and discriminate against women—putting them at risk for additional hardship due to violence or inadequate access to health care.

According to the World Health Organization, some of the sociocultural factors that prevent women and girls from benefiting from quality health services and attaining the best possible level of health include:

- Unequal power relationships between men and women
- Social norms that decrease education and paid employment opportunities
- An exclusive focus on women's reproductive roles
- Potential or actual experience of physical, sexual, and emotional violence (WHO, 2011).

Because of the extreme hardships that women often face regarding health and opportunity, two of the UN's eight Millennium Development Goals are specific to raising the status and health of women; Goal 3 is “Promote Gender Equality and Empower Women,” and Goal 5 is “Improve Maternal Health.”



WOMEN'S HEALTH IN PROJECT AXSES

OVERVIEW

In order to meet the significant health needs of women in the target population in DRC, Project AXxes offered many aspects of maternal and women's health care as part of the primary health care package.

Activities undertaken to promote and advance women's health included the following:

- Family planning
- Promoting gender awareness and preventing sexual gender based violence
- Fistula repair
- Improved maternal and child care
- Malaria prevention and treatment
- HIV/AIDS testing, counseling, and PMTCT.

Additional details for each activity are described below.

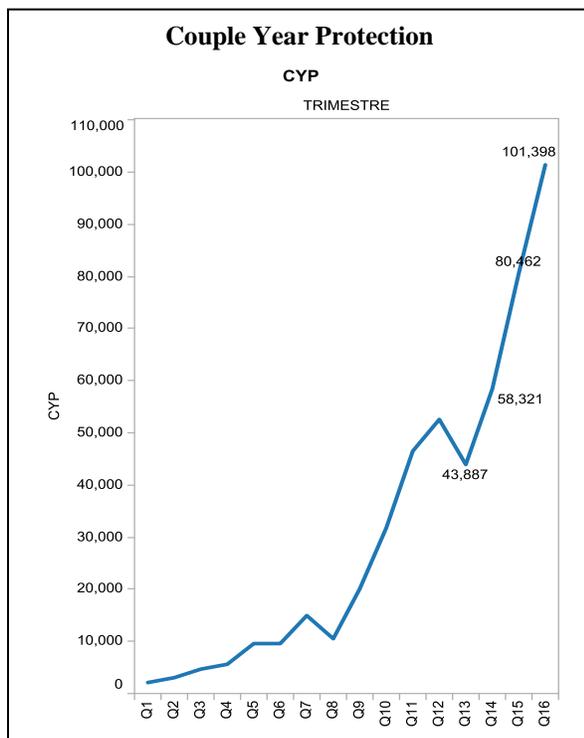
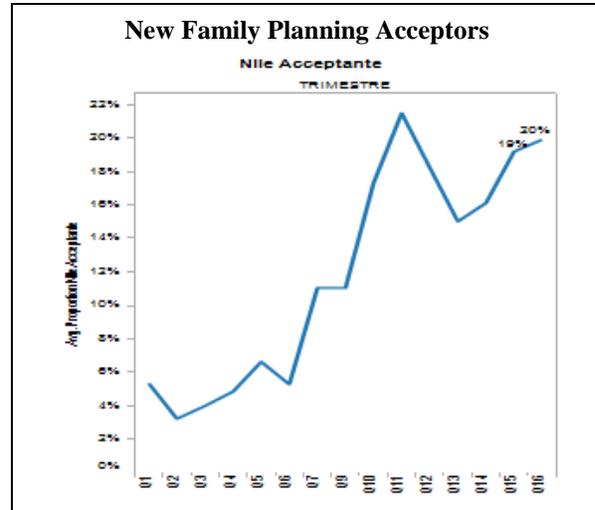
FAMILY PLANNING

The provision of high quality, integrated and accessible family planning services was a key objective of Project AXxes. Family planning (FP) interventions were largely focused on promoting birth spacing and avoiding unwanted pregnancies to improve maternal health and child wellbeing.

Enabling couples to decide whether, when, and how often to have children has many benefits not only to the overall health of mothers but it also has significant benefits for the health and socio-economic conditions of children and families (USAID, 2011).

Through various methods, the project strove to increase Couple Year Protection rates and the rate of new acceptors of family planning methods.

In regard to family planning, the guiding principle of Project AXxes was to provide information and counseling on all methods, then to provide the method of choice to each client. These efforts produced dramatic results, as shown in the graphs below.



GENDER AWARENESS AND SGBV PREVENTION

In DRC, particularly in the Eastern region, brutal rape and violence against women have been making headlines for years, leading one UN official to call DRC the “rape capital of the world” (BBC, 2010). The physical, social, and emotional effects of this violence have many negative effects on women’s health and wellbeing.

In addition, lingering negative social attitudes toward women often lead to other acts of discrimination and bias, including forced or early marriage, missed opportunities (e.g. schooling), limited choices in reproductive health, coerced sexual encounters, and teenage pregnancy.

The aim of sexual and gender based violence (SGBV) interventions in Project AXxes was to

identify and overcome these attitudes to create a healthier environment for women.

Key strategies involved community-based activities such as sponsorship of focus groups, women's forums, community leader workshops, and school and youth groups aimed at uncovering and addressing the issue of gender bias and its negative social impact.

The project supported local NGOs to promote the active participation of women in health center management, train hundreds of community and institutional leaders, and work with law enforcement personnel in promoting gender rights. Radio messages and printed material (including over 10,000 calendars) were also used to mitigate the harmful attitudes of gender bias and discrimination.

The larger impact of Project AXxes has been the successful integration of SGBV interventions into the package of primary health care activities in health facilities in its 57 health zones, aimed at the detection of harmful behavior and attitudes as well as the promotion of community-wide behavioral change.

FISTULA REPAIR

Fistula is a severe injury that has devastating physical, social, emotional, and economic outcomes for women. Fistula is usually caused by complications during labor, but it may also result from violent attack.

Fistula is an abnormal tear between a woman's vagina and her bladder or rectum, and it causes uncontrollable incontinence and constant humiliation. Women with fistula are often unable to work or interact with friends or the community—deepening their poverty and social isolation.

A significant contribution of the AXxes project to women's health was raising the awareness of fistula incidence in the DRC and working to both prevent and treat this disabling problem.

Activities undertaken related to fistula prevention and care included:

1. Increased training in assisted births and established protocols for transfer
2. Creation and support of both mobile and hospital-based fistula repair teams
3. Research on co-morbid factors associated with fistula development and subsequent obstacles to care
4. Partnership with EngenderHealth and co-sponsorship of two national conferences in raising the awareness and creating strategies to address this problem.

From 2007 to 2010, **1,276 women were treated for fistula** through Project AXxes—each one representing a life restored.



IMPROVED MATERNAL HEALTH AND NEWBORN SERVICES

Comprehensive and quality maternal and newborn care were key objectives in the AXxes project. Targeted interventions for expectant mothers included Birth Preparedness and Maternity Services (ANC, Assisted Birth AMSTL, and CPON).

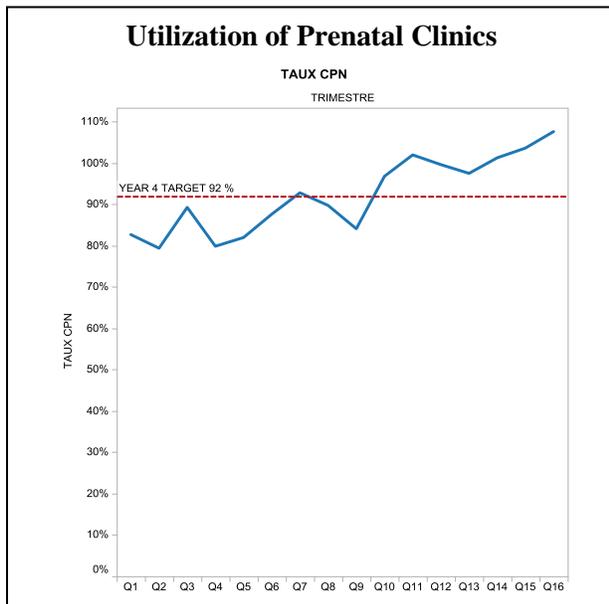
Antenatal Care (ANC)

Improvement and support of antenatal care services was one of the pillars of the AXxes project's preventive health services. Prenatal clinics in DRC traditionally have a high attendance rate, but women typically come late (in the third trimester) and interventions have been limited to weight and blood pressure checks.

The project position was that prenatal visits are not charged for individually, but rather their global costs are integrated into standard delivery fees.

Further, the project provided to women—without supplemental costs—important amenities such as SP for malaria prevention in the second and third trimesters, mebendazole, tetanus vaccination, multivitamins with folic acid throughout pregnancy, and LLINs.

ANC clinics also provide the first setting for family planning counseling, and by project's end 137 of these clinics had comprehensive PMTCT services. As a result of these offerings and encouragement in the community, ANC rates rapidly reached 100% and were even attracting clients from outside the health zone to USAID-supported facilities—a unique accomplishment of Project AXxes.



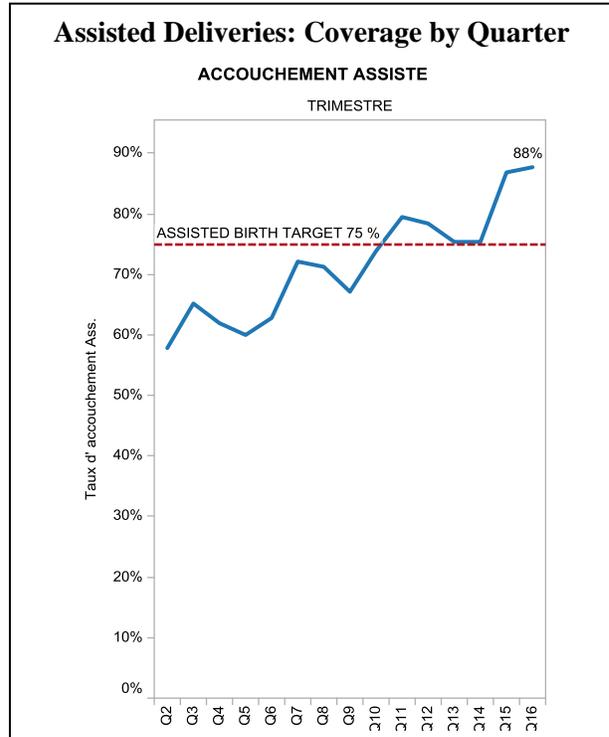
Assisted Delivery

A significant challenge and accomplishment of the AXxes project was to ensure that women had assisted delivery by trained personnel in equipped centers. Births unattended by trained and equipped personnel are associated with significant maternal and fetal mortality and morbidity.

At project inception the global rate of assisted deliveries hovered below 60%; at project's end a rate of nearly 90% was achieved.

A multiplicity of factors contributed to this achievement, including capacity building of

healthcare workers, significant investments in rehabilitation of maternities, and the procurement of equipment, delivery tables, lighting, and commodities.



Active Management of the Third Stage of Labor (AMTSL)

The AMTSL or GATPA protocol refers to the active management of labor and delivery and includes the use of empiric oxytocin injection to stimulate uterine contractions and avoid postpartum hemorrhage—a leading cause of maternal death in developing nations.

Like assisted deliveries above, this intervention was rapidly undertaken by supported facilities and became the standard of care for not only AXxes but other health zones as well, where the rate is notably lower.

Contributing factors to this success included:

1. Capacity building of healthcare workers and their supervision
2. Successful adaption of national data recording and collection sheets

3. Adequate supply of oxytocin in all health zones
4. Posting of the GATPA (AMTSL) protocol and instructions for prevention of postpartum hemorrhage in all birthing centers.

Post-Natal Consultations (CPON)

CPON, or postnatal care, involves comprehensive postpartum care during the first 72 hours following birth. Aside from important monitoring of the health of mother and child, CPON visits are essential for teaching and counseling in practices such as exclusive breastfeeding, nutrition, hygiene, and family planning. Women who have facility-based and assisted births benefit significantly from this important intervention.

Newborn Care (and integrated care of mother and child)

Integrated care activities for the mother and newborn were important project components. The project, along with MCHIP and the Ministry of Health, laid the groundwork for essential care of newborn and mother in 2007 with the “Specific Working Group” on 18 July 2007 and a “Consensus Workshop” in October 2007.

Aside from the adoption of strategies to support and monitor the health of mother and newborn (SNME) a number of modules were designed, printed, and distributed. These included a Reference Manual, Facilitator’s Guide, Participant Workbook, Clinic Registers, and Guide for Trainers of Community Relays.

The purchase of mannequins and durable equipment, as well as the training of provincial and district wide teams with TA from BASICS and MCHIP, allowed for the rapid uptake and dissemination of these important protocols. By project end, strategies for the care of newborns (including provision of hundreds of newborn resuscitation kits) and integrated care of mother and child were instituted in all 57 health zones—a significant achievement of Project AXxes.

MALARIA

The malaria component of Project AXxes included

a primary goal of improving and promoting malaria prevention through intermittent preventive treatment (IPT) and long-lasting insecticidal nets (LLINs).

Pertaining specifically to women, the prevention objective in years one through three was that 80% of pregnant women receive IPT during ANC visits as well as 60% coverage of LLINs for pregnant women. In the fourth year, the project objective in relation to TPI was maintained at 80%, while LLINs would be provided to all women attending antenatal care clinics.



Long-Lasting Insecticidal Nets (LLINs)

Project AXxes distributed more than one million LLINs to pregnant women and children under five through established prenatal and well child clinics. Through Project AXxes, antenatal clinics had a near 100% coverage rate for LLINs.

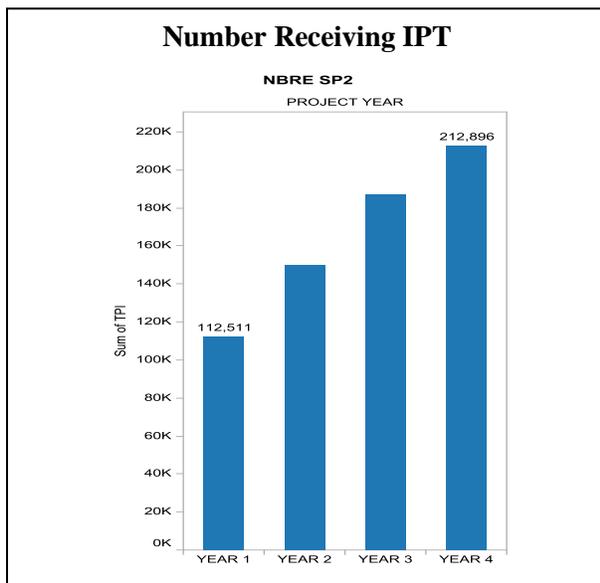
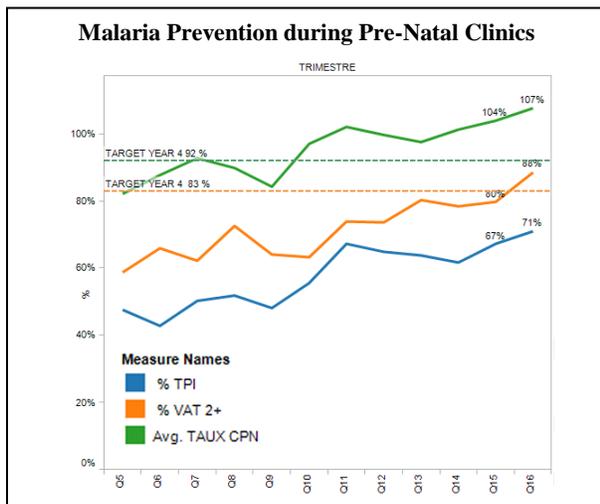
In addition to malaria prevention, the presence of LLINs served as a positive incentive for antenatal consultations of pregnant women (ANC) and children (CPS), which increased attendance at both clinics.

Intermittent Preventive Treatment in Pregnancy (IPTp)

Intermittent Preventive Treatment in Pregnancy (IPTp) involves the administration of two series of prophylactic doses of sulphadoxine-phuremethamine (SP) to pregnant women in order to reduce the adverse consequences of malaria

during pregnancy. Project AXxes considered this indicator attained only if women receive both doses starting at 16 weeks (second and third trimesters) during pregnancy, consistent with WHO guidelines for this method.

As can be seen in the chart below, there was a progressive increase in this indicator between years one and four, culminating in a 71% coverage rate—compared to a national average of just 5% (EDS 2007) and the national objective of 50% (PNLP).



For more information on malaria work in Project AXxes, see the separate report, *Malaria Prevention and Treatment*.

HIV/AIDS

Counseling, Testing and Prevention of Mother to Child Transmission (PMTCT)

Project AXxes established and/or supported 137 PMTCT sites during project years two, three and four. Established sites offered counseling and screening to nearly 90,000 women annually by year four.

All sites provided ARV prophylaxis to seropositive mothers and their babies as well as the provision of HIV basic care (cotrimoxazole, multivitamins) and referral to HIV clinical services where available.

HIV testing was also offered to spouses of women who visited the prenatal clinic. Though the uptake of testing by spouses was timid in year two (only 554 accepted), by year three over 5,000 accepted and by year four over 8,000 accepted.

CONCLUSION

Due to the nature of women’s health challenges in developing countries like DRC, in many cases one intervention is dependent upon another in order to have the maximum benefit.

While each of the above activities provided significant benefits to women’s health as a whole, the project found that these activities had the most impact when offered together as part of an integrated package of primary health services.

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FISTULA PREVENTION AND REPAIR

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INTRODUCTION: FAMILY PLANNING AND MATERNAL HEALTH

In keeping with U.N. Millennium Development Goal 5, improving maternal health, the provision of high quality, integrated and accessible family planning services was one key objective of Project AXxes. Family planning interventions in Project AXxes focused on promoting birth spacing and avoiding unwanted pregnancies to improve maternal health and child wellbeing through education and service delivery.

Comprehensive and quality maternal and newborn care were also key objectives in the AXxes project. Targeted interventions included birth preparedness and maternity services (including antenatal care, assisted birth, active management of the third stage of labor, and post-natal consultation) and newborn essential care (newborn resuscitation care and antibiotics).

One important aspect of these maternal health efforts by Project AXxes was the care and

treatment of debilitating vaginal fistulae caused most often by complications in childbirth.

According to WHO, obstetric fistulae can largely be avoided by delaying the age of first pregnancy, by the cessation of harmful traditional birthing practices and by timely access to quality obstetric care—all of which Project AXxes actively advanced through education, capacity building and service delivery (WHO, 2010).



WHAT IS FISTULA?

Vaginal fistula is a severe—yet, in most cases, surgically reparable—injury consisting of an abnormal opening between the woman’s bladder and vagina (vesico-vaginal fistula) or between the vagina and rectum (recto-vaginal fistula).

Fistulae cause urine or feces to leak continuously and uncontrollably, and they often result in an inability to carry and bear children. These debilitating effects often lead to devastating consequences on the social, economic and psychological status and health of women affected (EngenderHealth 2006; Lister 1977; Murphy 1981; Wall 1988).

Though the ongoing violence in eastern DRC has brought much attention to traumatic fistula caused

by sexual violence against women, fistulae most commonly occur in childbirth during prolonged, obstructed labor. Occurring in 5% of live births, obstructed labor accounts for 8% of all maternal deaths and is one of the four major causes of maternal mortality and morbidity (WHO, 2010).

The most common sufferers of fistula are women in developing countries like DRC where access to emergency obstetric services is extremely limited.

“I have lived through very difficult times. I must wear diapers all the time like a baby. These cloths cause sores. I release odors which prevent me from being with other people. It is difficult because my life has been dramatically reduced and the flow of urine increases. I cannot engage in any activities. This condition has taken away all of my value as a woman or mother. I cannot even do anything for my three children...”

—Woman with fistula from Lodja, DRC

FISTULA: A MEDICAL AND SOCIAL PROBLEM

Though fistulae are generally treatable with a simple surgery, the World Health Organization estimates that over 2 million women live with untreated obstetric fistula in Asia and sub-Saharan Africa (WHO, 2010).

The negative effects of fistula are particularly heavy in societies where a woman’s value is closely linked to her role as a child bearer and childcare provider (Wall 1988). Continuous incontinence may reduce her productivity and ability to carry out routine household chores. In addition, fear and humiliation may inhibit work or

interaction with friends and the community, further deepening poverty and social vulnerability.

Additionally, a wife and mother suffering from fistula may bring added responsibility and hardship to her family. Older children, particularly girls, are reported to have dropped out of school to assume their mother's responsibilities. Financial costs of care also place economic burdens on families, adding to the financial strains a family may have already experienced from losing the woman’s work productivity.

FISTULA CARE IN EASTERN DRC BY PROJECT AXES

A significant contribution of the AXxes project to reproductive health was raising the awareness of fistula occurrence in the DRC and working to prevent and treat this disabling problem.

Key activities undertaken related to fistula prevention and care included the following:

1. Increased training in assisted births and established protocols for transfer
2. Creation and support of both mobile and hospital-based fistula repair teams
3. Research on co-morbid factors associated with fistula development and obstacles to care
4. Partnership with EngenderHealth and co-sponsorship of two national conferences in raising the awareness and creating strategies to address this problem.

Summary of Fistula Repairs (Project Year 2 to Year 4)						
Districts/Provinces	Sites	Year 1	Year 2	Year 3	Year 4	Total
Haut Lomami	HGR Kabongo (Mobile Clinic)	Training of doctors and nurses in fistula care	41	29	126	196
South Kivu	HGRs Panzi & Kaziba (HGR based)		247	234	163	644
Sankuru	HGRs Lodja & Kole (Mobile Clinic)		1	122	116	239
Kolwezi	Kolwezi (Mobile Clinic)		18		66	84
Kananga	HGR Tshikaji (HGR based)		51	57		108
Mbuji Mayi	HGR Dibindi (HGR based)		3		2	5
Total			361	442	473	1,276

Highlights of Fistula Repair and Prevention Activities in Project AXxes

- 1,276 fistulae repaired in project years two through four
- Conducted study on social and economic factors associated with the development of fistulae and care seeking behavior
- Created mobile fistula repair clinic and empowered hospitals with knowledge and skills on assisted births and fistula repair
- Co-hosted two national Fistula Repair and Treatment Conferences to raise awareness and develop strategies.

TRAINING. In year one, Project AXxes focused on supporting the training of doctors and nurses in surgical fistula repairs to increase capacity of medical staff in treating this condition.

TREATMENT. In years two through four, a total of **1,276 women were treated for fistula** through Project AXxes, making it the third largest source of fistula repair in DRC at the time. (See chart below.) Each surgery represents the end of humiliation and a life restored.

SPREADING THE WORD. One of Project AXxes' most significant accomplishments was not only in the number of surgeries performed, but also in the level of awareness raised, stakeholders engaged, and prevention methods instituted.



Launching a Mobile Clinic to Extend Reach

After the training programs in year one, the project began noting a high turnover rate of the medical professionals who were trained in fistula repair,

most of whom gravitated toward better paying positions in urban settings and even outside DRC.

To remain productive and reach more women in need, the project changed its focus to creating and supporting a **mobile fistula repair clinic**, which served the dual purpose of meeting critical health needs for fistula sufferers while training personnel at the facilities it visited.

The mobile unit visited different health zones over a 4-6 week period and provided treatment to women with fistula in surrounding areas. Since most women with fistula do not have access to care and treatment, Project AXxes brought the treatment to them. These sessions were extremely well-attended, with **the number of women in need of fistula repair typically exceeding the number of available beds** and the time available to surgeons to repair fistula cases.

Research Study: Living with Fistula

Project AXxes also conducted a research study, “Living with Fistula: An examination of the social and cultural consequences and careseeking behavior in DR Congo,” to understand how treating fistulae through a mobile unit compares to treatment provided in fixed health facilities, in terms of accessibility and quality of treatment.

Using a mix of quantitative and qualitative methods, the study was conducted in three sites in non-conflict regions of DRC. The study aimed to describe the lives of girls and women before and after having developed fistula, including the prenatal period and childbirth, as well as the physical and social consequences associated with the condition and attempts at obtaining care.

In addition to gaining an understanding of the causes and implications of living with fistula, according to the report, “the results...illuminate an appallingly limited understanding and knowledge of family planning, as well as the extreme pressure women have to conceive and bear children” (Blum, Yemweni, et. al, 2010).

According to WHO, obstetric fistula still exists because health care systems fail to provide accessible, quality maternal health care, including

family planning, skilled care at birth, basic and comprehensive emergency obstetric care, and affordable treatment of fistula (WHO, 2010).

The results of the Project AXxes research study on fistula were meant to guide policy makers in establishing informed recommendations for the prevention of fistula and appropriate treatment approaches with the hope of decreasing occurrence and successfully treating existing cases.

IMA and Project AXxes are confident that, with proper education and training on family planning and safe childbirth practices, women and health care workers can each play a vital role in greatly decreasing the burden of this and other maternal health challenges in developing countries like DRC.

Highlights of this and other studies are posted on the Project AXxes website:
http://sanru.org/projects/axxes_reports.htm.



National Fistula Repair and Treatment Conferences

In order to raise awareness and plan fistula prevention and treatment activities, IMA World Health and EngenderHealth co-hosted two major conferences on fistula repair in Kinshasa, DRC, in November 2009 and April 2010 with support from USAID.

In addition to Ministry of Health and USAID representatives, the meetings were attended by international and local nongovernmental organizations active in addressing Fistula in DRC. Participants also included surgeons from both government and faith-based hospitals.

Highlights and achievements of the meeting included a comprehensive review of treatment and prevention of fistula in the DRC and updates on

current and planned activities. The meetings also included technical discussions and presentations on urinary diversion techniques for the fistula surgeons in attendance.

The sharing of ideas among the greater network of fistula service providers was one of the major achievements of the meetings.

CONCLUSION

Women and children often bear the heaviest health care burdens of war and poverty. Fistula is just one example of how women suffer needlessly and bring additional hardship onto their families through poor health conditions.

When critical steps to prevent and treat fistula are taken, such as those undertaken during Project AXxes, other childbirth and maternal health related injuries and complications can be prevented and addressed as well.

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FAMILY PLANNING

ABOUT PROJECT AXSES

The Integrated Health Services Project (Project AXxes) was a four-year \$60 million dollar USAID-financed primary health care project designed to revitalize 57 select health zones across the Democratic Republic of Congo (DRC).

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INTRODUCTION: FAMILY PLANNING

Family planning is a critical component of improving maternal health, the UN’s fifth Millennium Development Goal.

Enabling couples to decide whether, when, and how often to have children has many benefits to the overall health of mothers and children as well as multiple significant economic and social benefits for families and children, including:

- Protecting the health of women and children by allowing sufficient time between pregnancies
- Reducing high risk pregnancies and the development of injuries such as obstetric fistula (see separate Project AXxes report, *Fistula Prevention and Repair*)
- Decreasing unsafe abortions and adolescent pregnancies
- Fighting the spread of HIV/AIDS by providing information, counseling and access to condoms
- Supporting women’s rights and opportunities for education, employment and participation

in society

- Protecting the environment and resources by stabilizing population growth (USAID, 2011).



In sub-Saharan Africa, a woman’s maternal mortality risk is 1 in 30, compared to 1 in 5,600 in developed regions. According to the UN, family planning can play a large role in lowering these high rates of maternal death (UN, 2010).

Some 215 million women who would prefer to delay or avoid childbearing lack access to safe and effective contraception. It is estimated that meeting the unmet needs for contraception alone could cut—by almost a third—the number of maternal deaths (UN, 2010).

Family planning, therefore, is a critical component of an integrated health services project like Project AXxes for its many benefits to individuals, families and communities.

FAMILY PLANNING IN PROJECT AXSES

The provision of high quality, integrated and accessible family planning services was a key objective of Project AXxes. Family planning (FP)

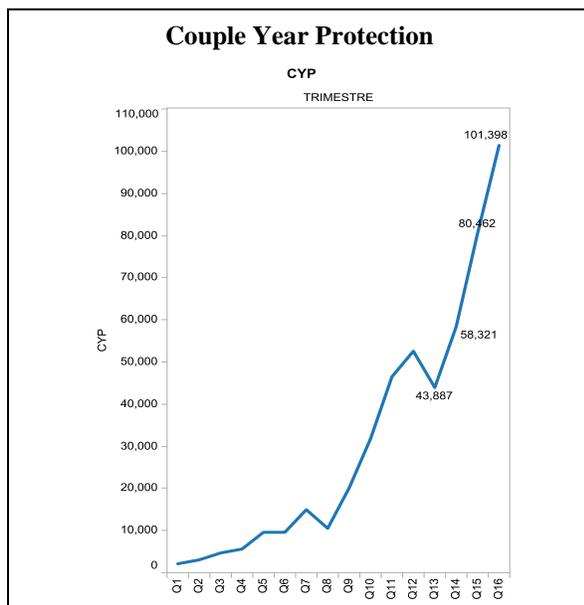
interventions were largely focused on promoting birth spacing and avoiding unwanted pregnancies to improve maternal health and child wellbeing.

Targeted interventions focused on two key areas:

1. Enhancing service delivery for women by providing a full complement of family planning methods, training clinical providers, and increasing service accessibility at the community level
2. Promoting family planning and helping communities understand the value of family planning as a component of good health.

Couple Year Protection (CYP) Rate

The CYP is the estimated protection provided by contraceptive methods during a one-year period, based upon the volume of all contraceptives sold or distributed free of charge to clients during that period.



The CYP evolution is among the most dramatic graphs produced throughout Project AXxes; but the reader should be aware that part of the exponential increase in these family planning graphs is related to reinforcing the use of natural methods and improved reporting of all methods.

In particular, two natural FP methods, MAMA (Méthode d'Allaitement Maternelle et

Aménorrhée) and MAO (Méthode d'Auto-Observation), account for more than 50% of the increase of CYP; but even with these removed from the data, **Project AXxes still exceeded its target in CYP rates.**

Moreover, the inclusion of MAMA and MAO in counseling and reporting served to introduce the important concept of family planning and to integrate reproductive health care services at the facility level.

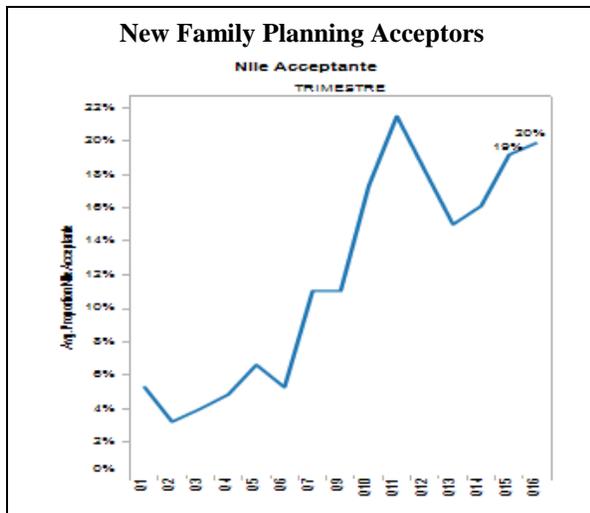
Nearly every woman is counseled on the advantages of lactation related amenorrhea postpartum; then, at her six month visit, she is given options for other methods of family planning—a normal step from natural to modern methods. Other methods that increased CYP and will sustain it in the future are dependent on commodity flow (a historic hurdle in the DRC) including condoms, cycle beads, depo-provera, birth control pills, and surgical methods.

The guiding principle of Project AXxes was to provide information and counseling on all methods, then to provide the method of choice to each client.

Aside from an assured supply chain, another challenge in this context is cultural pressures ascribing worth to number of children and a history of needing partner consent for family planning. With work by trained counselors, relays, C-change, and the new DRC constitution, such age-old cultural biases are breaking down. This should pave the way for higher and sustained CYP rates in the future. **This groundbreaking work and elevation of CYP from nearly zero to 90,000 per quarter is, regardless of methods, a phenomenal accomplishment of Project AXxes.**

New Acceptors

The rate of new acceptors refers to the number of new FP acceptors in USG-supported family planning clinics. This number increased steadily from Q1 to Q16 as seen in the graph below.



Successful strategies that contributed to the growth of this indicator include:

1. Quarterly review sessions in clusters with all family planning workers and health zone authorities to discuss methods and validate data
2. Utilization of Community Relays to promote family planning on a village level
3. The design and printing of family planning promotional tools such as pamphlets and flipcharts
4. The integration of family planning into community care sites and continued supply chain from USAID in modern contraceptives.

GENDER AWARENESS AND SGBV PREVENTION IN RELATION TO FAMILY PLANNING

In Eastern DRC, lingering negative social attitudes toward women often lead to incidents of gender-based violence and other acts of discrimination and bias, including forced or early marriage, missed opportunities (e.g. schooling), limited choices in reproductive health, coerced sexual encounters, and teenage pregnancy.

Clearly, these social attitudes are barriers to increasing family planning and access to healthier reproductive choices for women.

The aim of sexual and gender based violence (SGBV) interventions in Project AXxes was to identify and overcome these attitudes to create a healthier environment for women.

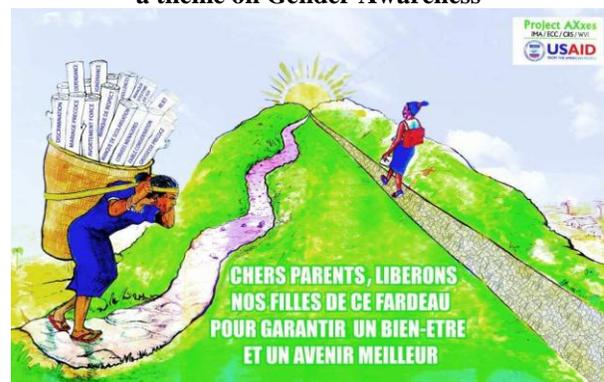
Key strategies involved community-based activities such as sponsorship of focus groups, women's forums, community leader workshops, and school and youth groups aimed at uncovering and addressing the issue of gender bias and its negative social impact.

The project supported local NGOs to:

1. Promote the active participation of women in health center management
2. Train hundreds of community and institutional leaders
3. Work with law enforcement personnel in promoting gender rights.

Radio messages and printed material (including over 10,000 calendars) were other methods used to mitigate the harmful attitudes of gender bias and discrimination. The picture below was featured on the 2009 SANRU Calendar and funded by Project AXxes.

The 2009 SANRU Calendar featured a theme on Gender Awareness



For more information about the ways Project AXxes supported and improved health and health care for women in DRC, please see the separate report on *Women's Health*.

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MALARIA PREVENTION AND TREATMENT

ABOUT PROJECT AXSES

The Integrated Health Services Project (Project AXxes) was a four-year \$60 million dollar USAID-financed primary health care project designed to revitalize 57 select health zones across the Democratic Republic of Congo (DRC).

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INTRODUCTION: MALARIA

Malaria is a serious and potentially fatal disease caused by a mosquito-borne parasite. Malaria occurs mostly in poor, tropical and subtropical areas of the world. Half of the world's population is under threat of malaria infection.

According to the World Health Organization’s (WHO) Malaria Fact Sheet, in 2008 there were 247 million cases of malaria and nearly one million deaths – mostly among children living in Africa. In Africa a child dies every 45 seconds of malaria, and the disease accounts for 20% of all childhood deaths. In addition to young children, pregnant women are also among the most susceptible to acute malaria infection.

WHO has also tabulated the significant economic impact that malaria has on countries with high levels of transmission. Health costs include both

personal and public expenditures on prevention and treatment, accounting for:

- Up to 40% of public health expenditures
- 30% to 50% of inpatient hospital admissions
- Up to 60% of outpatient health clinic visits.

Malaria also disproportionately affects poor people who cannot afford treatment or have limited access to health care, trapping families and communities in a downward spiral of poverty (WHO, 2010).

According to the organization Malaria No More, malaria affects five of the UN’s eight Millennium Development Goals.

MALARIA PREVENTION FOR WOMEN AND CHILDREN

Reducing malaria in the target population was a major component of Project AXxes. The malaria component was based on a two prong strategy:

1. Improve malaria treatment at health centers and reference hospitals
2. Improve and promote malaria prevention through intermittent preventive treatment (IPT) and long-lasting insecticidal nets (LLINs).

The treatment objectives were as follows:

- That 80% of children with fever would be treated promptly and correctly
- In years one through three, that 80% of

Procurement of LLINs by Project Year					
Procuring Agent	Year 1	Year 2	Year 3	Year 4	Totals
IMA	180,000	180,000	180,000	324,100	864,100
JSI	0	0	0	235,000	235,000
	180,000	180,000	180,000	559,100	1,099,100

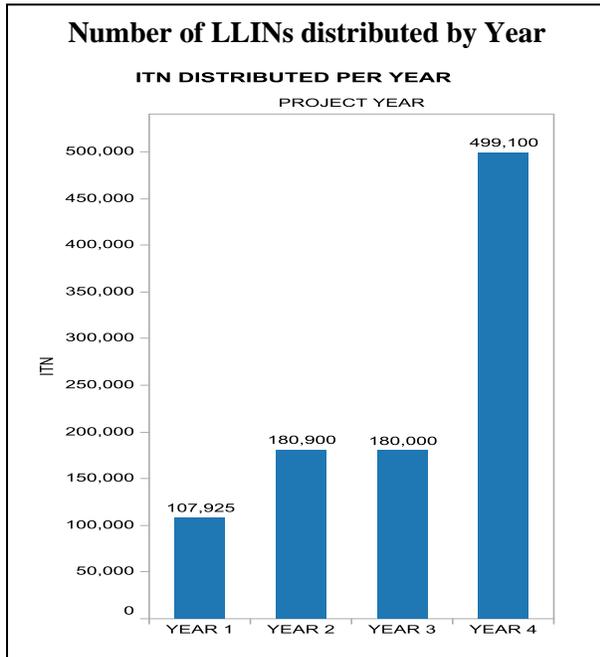
pregnant women receive IPT during antenatal care (ANC) visits, as well as 60% coverage of LLINs for pregnant women

- In year four, that IPT was maintained at 80%, while LLINs would be provided to all women attending ANC clinics.

Long-Lasting Insecticidal Nets (LLINs)

Project AXxes distributed more than **1 million LLINs to pregnant women and children** under the age of five through established prenatal and well child clinics. Of that number, 235,000 nets were provided by USAID/JSI. In addition, 60,000 were given to other projects for distribution (40,000 to Global Fund/ECC and 20,000 to MSH/LMS) for the same purposes.

The LLINs proved to be a positive incentive for antenatal consultations of pregnant women (ANC) and children (CPS), thereby increasing attendance at both clinics. In the few health zones where Global Fund or other projects provided nets, Project AXxes collaborated with them so such nets from other donors could be used for other purposes such as for school children and social marketing campaigns to ensure the widest and most efficient use possible.

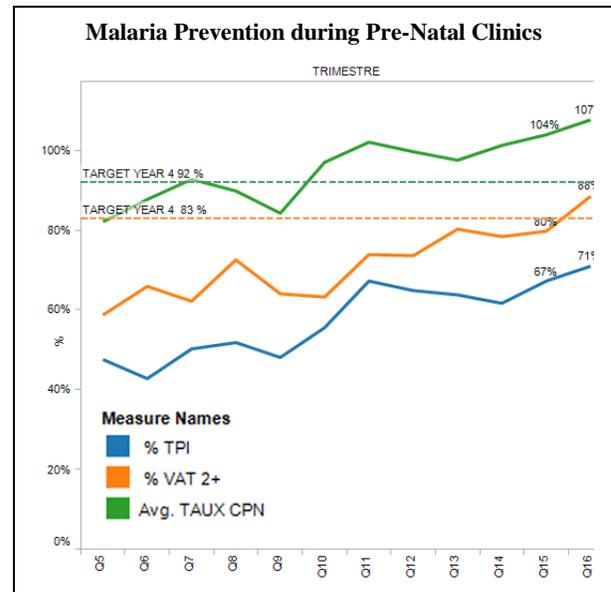


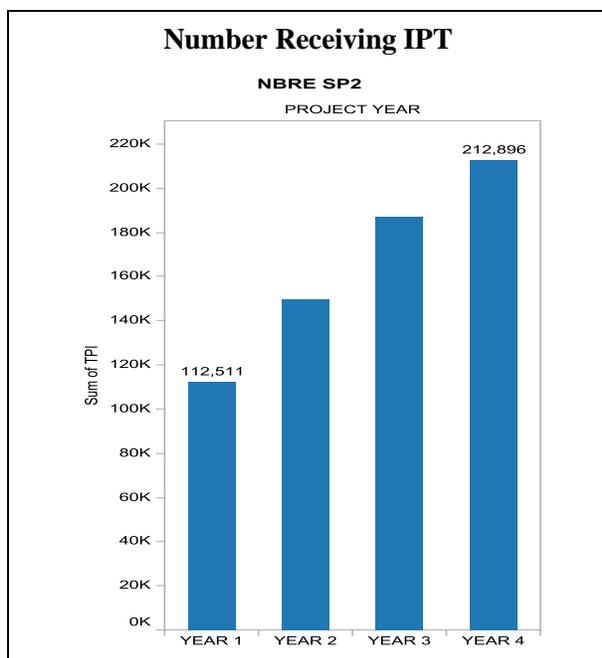
While antenatal clinics had a near 100% coverage rate, the need for LLINs community-wide will continue to be enormous. The challenge with the upcoming PMI initiative and scale up from Global Fund and other donors will be to ensure synergy and coordination so that all vulnerable persons will be served—an endeavor that led to successful net distribution and coverage rates during the four year AXxes program.

Intermittent Preventive Treatment in Pregnancy (IPTP)

Intermittent Preventive Treatment in Pregnancy (IPTP) involves the administration of two series of prophylactic doses of sulphadoxine-phuremethamine (SP) to pregnant women in order to reduce the adverse consequences of malaria during pregnancy. Project AXxes considers this indicator attained only if women receive both doses starting at 16 weeks (second and third trimesters) during pregnancy, consistent with WHO guidelines for this method.

As can be seen in the chart below, there has been a progressive increase in this indicator between years one and four, culminating in a 71% coverage rate—compared to a national average of just 5% (EDS 2007) and the national objective of 50% (PNLP).





Adjusting to changing protocol, correct care of malaria and use of ACTs

The national protocol for initial treatment of presumptive and uncomplicated malaria changed midway through the project from SP to Artemisinin-Based Combination Therapy (ACTs). Project AXxes worked aggressively to rapidly integrate this policy in hundreds of hospitals and clinics.

This change of policy required the following adjustments:

- Training and briefing health care workers
- Informing community and institutional relays in the importance of health center based treatment (as opposed to self-treatment)
- Providing a new therapy for adults and children.

Early challenges were the reluctance of providers and patients to adopt a new therapy, and concerns over potential drug side effects. In fact, the first drug order of approximately 130,000 cures risked expiring due to underutilization. The project campaigned heavily for the use of this drug and cut its relative price (line of credit price) in half, and in the end directed CDRs (Centrale de Distribution Régionale) to serve all health facilities regardless of orders. This forward

pressure on prescribers caused increased utilization and then near stock-out as uptake escalated.

By the latter part of year four, **the number of children treated for malaria surpassed the target of 115,000 by nearly 100%** (the actual number of children treated surpassed 200,000 on average over the last three quarters).

Given the increased uptake of ACTs and significantly higher utilization rate, it was estimated that the year four stock would be depleted by the end of the calendar year. As this report is being written, the planned delivery of 3.7 million cures, provided by PMI and imported with assistance from Project AXxes, is a timely contribution and will ensure consistent treatment levels into the near future—a success story founded on work done by Project AXxes and its collaborators.



SUCCESS STORY: ROLLING BACK MALARIA IN KOLWEZI

Through a partnership with Roll Back Malaria (RBM), a program started by WHO and other UN agencies, Project AXxes overhauled the malaria treatment and prevention activities in the Kolwezi District in Katanga Province, DRC.

In Kolwezi District, almost 85% of transfusions in children under age five and 40% of miscarriages are due to malaria, according to the 2007 National Malaria Control Program Report.

In order to ease this burden, Project AXxes reinforced all RBM control strategy components in

Kolwezi District, where only malaria treatment activities had been done before. Project AXxes reinforced the use of LLINs, ensured effective treatment, implemented vector control, and facilitated use of IPT for pregnant women.

Since intervention by Project AXxes, officials noted a marked decrease in malaria illness among children following this intervention.

“Before we started using LLINs, I was always seen in this health center almost every other week because my children were getting fever from malaria.”

– Mujinga Ilunga, mother of 3 children under age 5 in Kolwezi

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HEALTH INFRASTRUCTURE

ABOUT PROJECT AXXES

The Integrated Health Services Project (Project AXxes) was a four-year \$60 million dollar USAID-financed primary health care project designed to revitalize 57 select health zones across the Democratic Republic of Congo (DRC).

Led by IMA World Health from 2006 to 2010, the main goal of AXxes was to provide integrated development assistance for primary health care health systems strengthening based on the “global assistance” strategy of the Ministry of Health.



INTRODUCTION: HEALTH INFRASTRUCTURE

A key Project AXxes objective was to increase utilization of health care facilities, or the percent of the population that visits a center once a year.

One key strategy supporting this goal was to strengthen health infrastructure by rehabilitating health facilities across Eastern DRC.

The rehabilitations included physically repairing and upgrading the facilities as well as equipping

them with essential equipment and supplies.

Other significant rehabilitation work, including capping of water springs, installation of cisterns, and the construction of latrines and incinerators, is highlighted in a separate Water/Sanitation report.

FACILITY REHABILITATION

Throughout the four years of the project, **Project AXxes rehabilitated 217 health centers.**

Key strategies that led to this significant achievement included the following:

1. Asking health zones to prioritize sites for rehabilitation
2. Engaging community health boards (CODESA) in the elaboration and follow-through of such projects
3. Using competent local contractors, paid according to a set timeline of objectives.

Abandoned facilities were restored, and those that were severely neglected or run down were made cleaner, safer and more inviting. Some of the results of these rehabilitation projects have been no less than spectacular.

Health Facility Rehabilitations

Implementing Partner	Facilities Rehabilitated
Catholic Relief Services	83
Protestant Church of Congo	67
World Vision	67
TOTAL	217

BEFORE AND AFTER: Health Facilities Rehabilitation



Nguba HC Fungurume HZ



Buziba in Mwenga HZ, South Kivu



Pania Mutombo BCZS

Challenges to Success

Challenges included supplying remote sites with necessary durable material such as roofing and cement as well as maintaining construction during periods of conflict—a frequent reality in the Eastern region where the project was centered.

However, the significant physical improvements to facilities made a notable difference in the population’s access and ownership of local care.

Key improvements included expansion, lighting, security, reception, and space.



Equipping of health care facilities

At the onset of the project, a needs assessment was conducted in every health zone to determine the availability of essential hospital and health center equipment such as:

- Delivery tables
- Operating room equipment
- Health center diagnostic/treatment material
- Cold chain
- Bicycles
- Motorcycles
- Communication equipment.

In years one and two, significant container orders of such durable equipment was procured for these facilities, particularly for solar lighting and refrigeration.



SUCCESS STORY: SOLAR LIGHTING IN SOUTH KIVU

Bitale health center in South Kivu serves a population of over 6,000 people, including 1,250 women of reproductive age. Though conflict in the region had stabilized, Bitale was still operating in emergency mode—providing the most basic medical care without any investment in the facility or adequate tools or medicines to provide the ongoing quality care the population needed.

Enter Project AXxes. In addition to providing training, supplies, essential drugs, improved management and supervision, Project AXxes helped to rehabilitate the facility at Bitale.

Bitale was equipped with delivery beds, essential tools and skilled midwives, and it is one of five health centers in the health zone that received solar panels to provide lighting for its maternity. Project AXxes funded over 500 solar lighting systems and 207 solar refrigerators in Eastern DRC.

“The solar panel provided by AXxes for our maternity is making my work easy and pleasant. Before this donation, we had difficulties in taking care of pregnant women correctly, especially during delivery at night. Both simple and complicated cases were difficult to handle. Care of the newborn and the mother was compromised because of darkness or poor lighting from [the] kerosene candle that we used. Thank you to the project and to the donor, USAID for this support. I am motivated to do this work because it is contributing immensely in the reduction of child and maternal deaths particularly deaths related to childbirth.”

—Mimi Mapendo, midwife at Bitale

IN BRIEF: WATER/SANITATION

Project AXxes also oversaw significant water and sanitation projects as key elements to improving infrastructure. The objectives of this component were to increase the number of persons with access to both improved drinking water and sanitation facilities.

Project AXxes accomplished these projects by working with health zone officials to strategically identify existing sites for rehabilitation (spring capping), installation of cisterns and collection systems, and construction of incinerators in selected facilities.

Similarly, each health zone identified both community and facility-based sites for the construction of latrines.

WatSan Achievements in Project AXxes

Indicators	Total
Water springs capped	629
Health center latrines constructed	196
Community latrines constructed	6,133
Rainwater catchment cisterns installed	116
Hospital & health center incinerators constructed	130
Clean villages certified	41

Additional information and details about the water and sanitation component of Project AXxes can be found in a separate report, *Water and Sanitation*.



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WATER AND SANITATION

ABOUT PROJECT AXXES

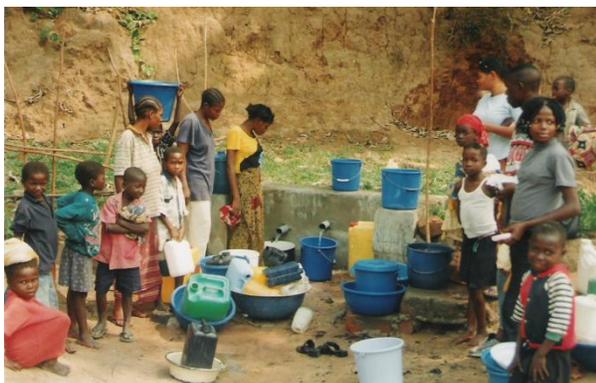
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INTRODUCTION: WATER AND SANITATION

In keeping with U.N. Millennium Development Goal (MDG) 7, ensuring environmental sustainability, IMA World Health and partners incorporated extensive water and sanitation activities into Project AXxes.

Specifically, the water and sanitation efforts of Project AXxes fit into MDG Target 7.C: *Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.*



Water/Sanitation Conditions in DRC

According to the U.N., just 46% of the population in DRC was using improved drinking water sources in 2008 (U.N., 2010). That number may be deceiving, however, because of the great discrepancy between urban and rural conditions. Though the average access was 46% overall, only 29% of people in rural areas had access compared to 82% of people in urban areas (WHO, 2010).

Meanwhile, just 23% of people in DRC had access to improved sanitation services in 2008 (U.N., 2010). Again, there remains a wide discrepancy between urban and rural access.



Water/Sanitation and Health

Adequate water and sanitation systems are critical to the health of entire populations. Common diseases related to poor water and sanitation include diarrhea, arsenicosis, cholera, fluorosis, Guinea worm disease, opportunistic infections relating to HIV/AIDS, malaria, schistosomiasis, trachoma and typhoid (UNICEF, 2005). Many of these diseases have serious implications and can cause permanent disability or death. Globally, diarrhea is the third largest cause of morbidity and the sixth largest cause of mortality (Pond et al., 2004).

In the DRC, lack of access to safe water and sanitation systems, combined with poor hygiene practices, are major contributors to infant and child morbidity and mortality. Diarrhea is associated with an estimated with 16% of under-five mortality, and water-borne diseases are the number two killer of children in developing nations. In addition, water-borne illnesses can negatively impact a child’s ability to make use of food and water, contributing to malnutrition. Malnutrition is cited as the principal cause in 8-11% of deaths in the DRC and is generally considered a contributing factor in 40% of infant deaths. Malnutrition can also impede proper physical and mental development.

Improved water and sanitation systems not only prevent the spread of disease, but they may also help to increase daily productivity and school attendance since collecting sufficient water for a family’s needs may take up to six hours a day (WHO/UNICEF, 2005). Improved water and sanitation may also lead to increased business and farming opportunities for adults, leading to improved financial situations and even improved nutrition for families (Montgomery, et al., 2007).



WATER AND SANITATION IN PROJECT AXES

The objectives of the water and sanitation (WATSAN) component of Project AXes were to increase the number of persons with access to both improved drinking water and sanitation facilities.

Properly capping a spring costs only about \$700

and will provide clean water to about 300 people for 10 to 20 years with little maintenance.

A key success of Project AXes as a whole was the construction of 629 spring caps, 196 facility latrines and 6,313 community latrines.

With the capping of 629 springs, Project AXes ensured clean, safe water for nearly 190,000 people for the next 30 years.

Project AXes accomplished these projects by working with health zone officials to strategically identify existing sites for rehabilitation (spring capping), installation of cisterns and collection systems especially where springs are inadequate, and construction of incinerators in selected facilities.

Similarly, each health zone identified both community and facility-based sites for the construction of latrines.

In a health center setting, both incinerators and latrines are essential to ensuring basic safety, hygiene, proper waste disposal and consequently the overall quality of health and care at the facility.

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Engaging the community and key stakeholders

All of these projects required the initiation and planning of local authorities, the contribution of local resources, and training in the maintenance and care of such structures.

Engaging community stakeholders in finding practical, cost-effective solutions promotes local ownership and continuity of the strategies, which—with the right training and knowledge—

need not depend on outside support to meet water and sanitation needs for their communities.



SUCCESS STORY: RESTORING A LIFE-GIVING SPRING

The women and children of Bumoga used to collect rainwater and go to the river to fetch water used for cleaning and washing. They walked between five and seven miles from their village each day to get clean and safe drinking water for their families.

Bumoga’s only water source—called “Mulambi” or “death” in the local language—was known to be harmful and unsafe. Bumoga is located in the Kalonge health zone in the northern part of DRC’s South Kiva province, where there is no central water distribution system.

With help, guidance, and materials provided by Project AXxes, the community was fully engaged in hoeing the site, bringing stones and hauling sacks of cement to help restore the water source. Within a few weeks, the spring was cleaned out, filled with rock, covered, and sealed with a cement wall and outflow pipes.

Crystal clear, safe drinking water now flows from the spring which is no longer called “Mulambi” but “Ruvina”—meaning “life.”

Project AXxes assisted in restoring over 600 of these water sources throughout Eastern DRC, allowing life-giving water to flow where disease and sickness had formerly been a danger.

“Since AXxes rehabilitated the water source, I now have more time to devote to taking care of my new born twins because I’m no longer obliged to fetch water far from my house.”

– Mrs. Hortence BORA of Bumoga

ABOUT IMA WORLD HEALTH

IMA World Health, a non-profit organization based in New Windsor, MD, advances health and healing to vulnerable and marginalized people in the developing world. Focusing on international health, IMA provides essential health care services and medical supplies to those most in need.

Forbes has named IMA one of the Ten Most Efficient charities for three straight years, and IMA has received Charity Navigator’s highest rating for efficiency six years running. For more information, visit us at www.imaworldhealth.org or call 877-241-7952.

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HEALTH MANAGEMENT INFORMATION SYSTEMS

ABOUT PROJECT AXXES

The Integrated Health Services Project (Project AXxes) was a four-year \$60 million dollar USAID-financed primary health care project designed to revitalize 57 select health zones across the Democratic Republic of Congo (DRC).

Led by IMA World Health from 2006 to 2010, the main goal of AXxes was to provide integrated development assistance for primary health care health systems strengthening based on the “global assistance” strategy of the Ministry of Health.

INTRODUCTION: HEALTH MANAGEMENT INFORMATION SYSTEMS

Under Millennium Development Goal 8, the UN has recognized that the demand is growing around the world for information and communications technology. This is not only true of individuals but of health systems and health programs as well.

In order to provide effective health care services for large populations, having an organized and systematic flow of data and information is essential.

Health management information systems help to maximize the limited resources in developing countries by keeping track of key information, such as the number and locations of clinics and hospitals, the number and qualifications of health care workers, and the nature and effectiveness of active programs.

Knowing this key information helps health managers to plan better, to provide health care access to more people, and to improve the efficiency of service.

REINFORCEMENT OF THE HMIS IN PROJECT AXXES

A major component of Project AXxes involved increasing the capacity of national health programs across health zone, district, and central levels. Part of that capacity entails the ability to collect, analyze, and use health data collected from DRC’s 515 health zones and more than 10,000 health institutions.

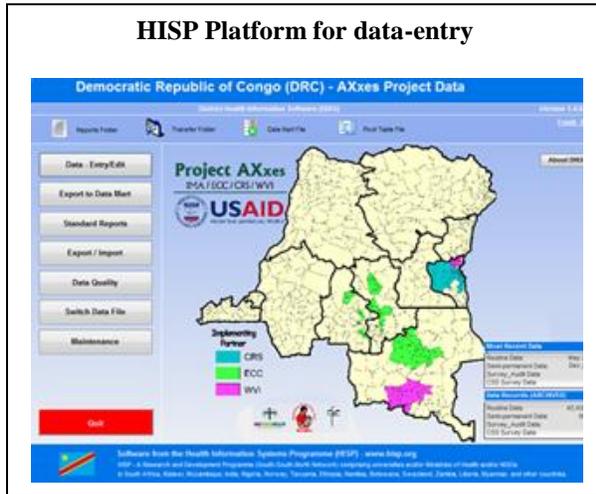
All institutions report monthly using standardized monthly paper forms. Health zones compile a monthly paper report or SNIS (National Health Information System), which passes through various levels and is sent to Kinshasa as hard copies. The paper-driven process is cumbersome and slow, and the data difficult to critique, analyze, and process.

Project AXxes focused on improving data collection, verification, and transmission at the health zone level through support from the Health Information System Program (HISP) from South Africa. The project also reinforced data collection and analysis at the central (Ministry of Health) levels through support from Department of Informatics of Johns Hopkins University.

Adopting and Replacing the GESIS Program

At the beginning of the project, the Ministry of Health (MOH) had contracted with European donors the installation of an electronic data collection system (GESIS) to replace the paper-based and cumbersome SNIS system. As an integrated program, for continuity Project AXxes invested resources in years one and two to adopt this system, purchasing computers and modems for all health zones and investing in software installation and training of personnel.

Unfortunately the GESIS program was never adopted nationally and restrictions within GESIS made it impossible to make modifications in format to allow the addition of new zones, new districts, changes in population, or evolving indicators and targets. In addition, the MOH had its own challenges with GESIS.



Noticing the perceived abandonment by the MOH and a continued need to capitalize on the training in electronic data transmission, Project AXxes contracted HISP in South Africa to transition the data collection program from GESIS to DHIS (Data Health Information System) software. The DHIS software has had significant success in contextually similar countries such as Tanzania, South Sudan, Liberia, Malawi, Namibia, Nigeria, Kenya, and South Africa.

The MOH was involved in this transition and readily adopted the system, asking Project AXxes to install and adopt it province-wide in South Kivu where it has been made operational.

Aside from health zone transmission, partners and regional coordination offices have been reporting electronically to the project’s headquarters in Kinshasa since year one with an access-based data entry system (Katele-lite). This data has formed the basis of all Project AXxes quarterly reports with charts and graphs, as shown throughout these reports, generated using *Tableau* software.

**Training of project staff in DHIS
(Kinshasa, May 2010)**



With technical assistance from the Department of Informatics of Johns Hopkins University, Project AXxes worked with the MOH to make the very important transition from a paper to electronic database system. The Project provided and installed high-capacity Dell Edge servers, desktops, laptops, LCD projectors, and wireless networking equipment in the MOH.

AXxes personnel and the team from Johns Hopkins provided month-long training of personnel from key departments of the MOH. This allowed ministry personnel to analyze data, track changes, monitor progress, compare trends at the health zone, district, and provincial level, as well as chart out and put into graphic form the various results.

**Training of MOH staff in DHIS
(Kinshasa, May 2010)**



Paving the way for Phase II

Project AXxes paved the way for phase II of this work, which would include sending monthly drug and health data reports by phone modems using EDGE technology directly from the health zones to coordination units. This work was to be done in collaboration with Health Information System

Program (HISP) and JHU and is still primed to go forward. The essential hardware equipment including new laptops, modems, and solar-based energy supply is all in place to facilitate this continuing work.

“This is fantastic...we not only have the tools to create a national database and national health information system (server and desktops) but have the software as well (Tableau) to analyze disease trends district-by-district, week-by-week and respond proactively rather than after the fact to epidemics in our country. Thank you Project AXxes for bringing us to this point!”

–Patrick Mayub, statistician from the Fifth direction
(Office of Planning and Research)

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