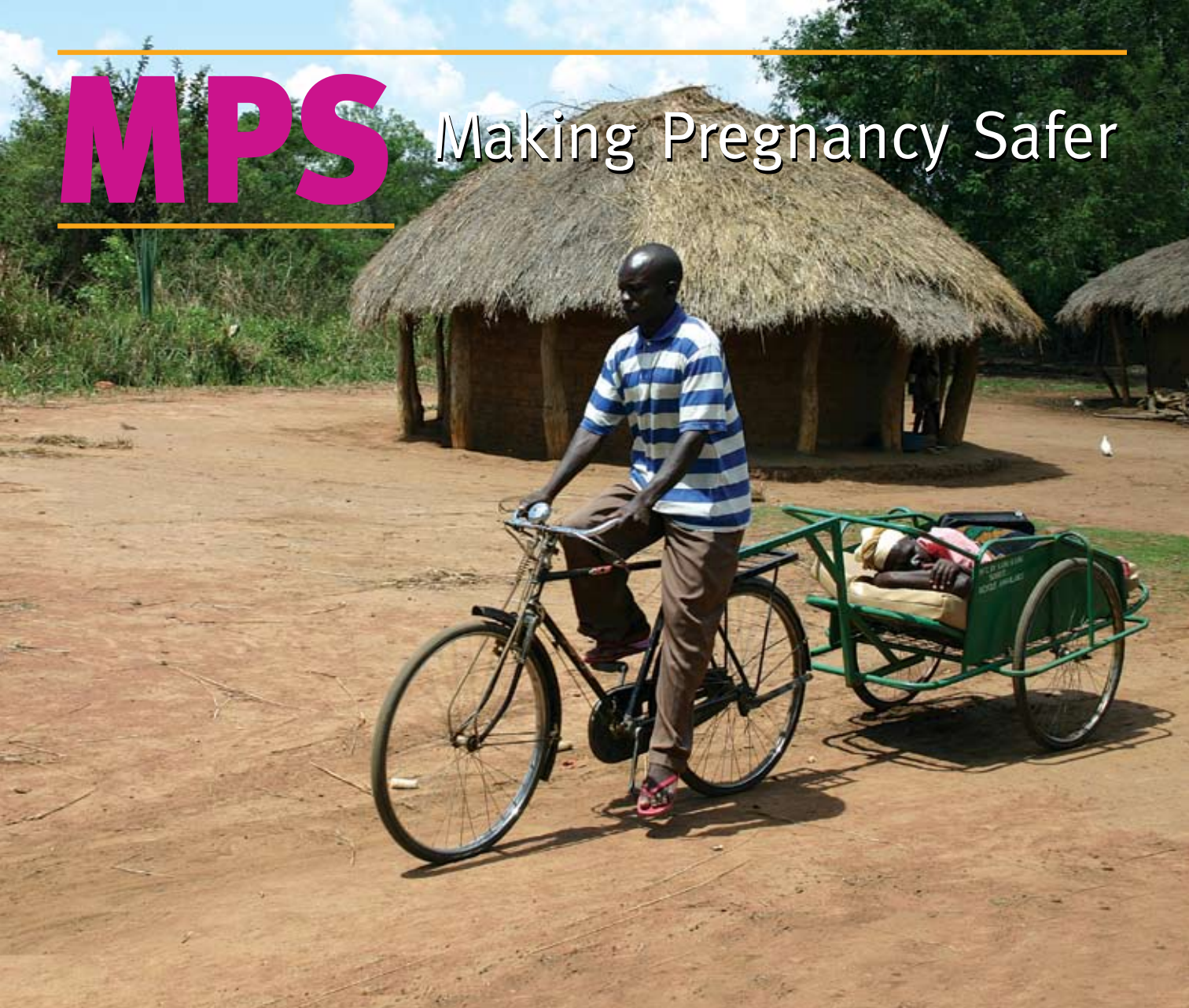


MPS

Making Pregnancy Safer



Implementing the MPS Initiative
in Soroti district, Uganda



Acronyms

ANC	Antenatal Care
BP	Blood Pressure
CAO	Chief Administrative Officer
CRPs	Community Resource Persons
DHO	District Health Officer
HCs	Health Centers
HIMS	Health Information Management System
HIV	Human Immune Deficiency Virus
HSSP	Health Sector Strategic Plan
IEC	Information, Education and Communication
IMPAC	Integrated Management of Pregnancy and Childbirth
MDGs	Millennium Development Goals
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
MPS	Making Pregnancy Safer
NGOs	Non Governmental Organizations
NMS	National Medical Stores
PEAP	Poverty Eradication Action Programme
PMTCT	Prevention of Mother to Child Transmission of HIV
RH	Reproductive Health
SRH	Sexual and Reproductive Health
TBAs	Traditional Birth Attendants
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USD	United States Dollars
VHTs	Village Health Teams
WHO	World Health Organization

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Foreword:

Life-saving care is a priority

The Ministry of Health (MoH), in line with the Health Sector Strategic Plan II (2005-2010), places a lot of emphasis on life-saving interventions that contribute to the improvement of health outcomes for the greater majority of the population especially women and children.

In pursuance of this outcome-oriented strategy, the MoH maternal and child health care interventions aim at reducing childbirth related deaths in line with the Poverty Eradication Action Plan (PEAP) and Millennium Development Goals 4 and 5.

Through the implementation of the Making Pregnancy Safer (MPS) initiative, the MoH, with the World Health Organization worked with Soroti local government and various partners to identify and respond to the critical gaps in maternal health care in the district. Together, the stakeholders identified Emergency Obstetric Care (EmOC) – medical care given to women for problems related to pregnancy, delivery and post-delivery, including post-abortion care – as the most appropriate and cost-effective outcome-oriented intervention.

The intervention was delivered with in an integrated essential health care package. The MoH worked closely with the district by providing both material support and technical supervision to ensure that the MPS initiative was implemented according to the required standards and set guidelines.

The outcomes have been very encouraging and instructive. With average resources the intervention has been able to achieve some of the key targets for the Sexual and Reproductive Health (SRH) programme in HSSP II, reducing the district's maternal deaths by nearly 70% and surpassing the national Maternal Mortality Ratio (MMR) by 50%. This successful story demonstrates that when local governments, hospitals, Health Centers (HCs) and communities work together, they can achieve a lot in health outcomes even with limited resources.

Overall, the challenges notwithstanding, the impressive reduction in maternal deaths has proved that improving emergency obstetric care delivery within an essential health care package as implemented, the MPS initiative is viable for Soroti in Uganda; other districts, and indeed other countries stand to learn a lot from the Soroti experience; hence the importance of this best-practice documentation.

The MoH is glad to note that Uganda was chosen to be one of the first countries to pioneer the MPS initiative. We are also equally glad to note that this initiative was well implemented, once again demonstrating the MoH's preparedness, and commitment to put WHO-supported initiatives to good use and bring them to bear fruits for the benefit of those in critical need of essential health services. The MoH will endeavour to replicate Soroti's successful implementation of the MPS initiative to other districts where maternal deaths remain high. Countries in search of best practices in maternal health care are invited to learn from our humble but successful implementation of the MPS initiative in Soroti



Dr. Sam Zaramba

DIRECTOR GENERAL OF HEALTH SERVICES, MoH



Foreword:

WHO committed to reducing maternal and infant deaths

The WHO, the world over, is committed to working with nations to review their health sector policies and practices in order to reduce both maternal and infant mortality. Through the MPS initiative in low resource country settings, WHO is supporting nations increase their capacity to establish and implement policies and standards for family planning, abortion care and maternal and newborn care.

The MPS initiative started off as a pilot project in several countries; Mauritania, Mozambique, Nigeria, Tanzania, Uganda, Bangladesh, Mongolia, and Bolivia. The WHO supported the governments of these countries to review their health sector policies and address the priority gaps in reproductive health care responsible for high maternal deaths. In Uganda, Soroti district was the pioneer implementer of the MPS initiative because of its then very high maternal deaths, which were way above the national average rate.

In Soroti, WHO supported the district local government to respond to the very high maternal deaths by providing both material and technical support to the project right from needs assessment, planning, implementation, supervision to monitoring and evaluation. Through this partnership, the district was

able to prioritize EmOC by improving the hospital theatre, obstetric life saving skills training, procuring of equipment, supplies and drugs, supporting transport (bicycle and motorized ambulances) as well as communication (radio transmitters and mobile phones) to enhance appropriate referrals of emergency cases from the communities right up to the referral hospital. Community education and mobilisation on danger signs of pregnancy was also strengthened.

Assessed against the key standard indicators of success of the MPS initiative, the outcomes of the first five years were remarkable and worth documenting. Increased access to relatively well-equipped and staffed referral facilities that handle complex emergencies resulted into the drastic reduction in maternal deaths in the short term.

Similarly, deliveries at health units by skilled attendants increased tremendously, again evidencing the dividends of having an increased proportion of women, their male partners, and communities who understand and appreciate the benefits of delivering at health units.

The two major indicators above demonstrate that the MPS initiative, despite the common challenges associated with low resource rural settings, implemented successfully the best practices for the care of pregnant women. It has also shown that reducing maternal deaths may not always require very costly investments. By prioritizing critical interventions such as EmOC along the health service delivery chain, small investments together with the goodwill and participation of local governments and communities can indeed prevent avoidable deaths.

WHO hopes that the best practices documented in this booklet will spur other districts in Uganda and other countries with similar settings to implement the MPS initiative and save the lives of numerous women and newborns, particularly from rural households, that die from pregnancy related complications.



Dr. Melville George

WHO REPRESENTATIVE, UGANDA



Background to MPS initiative in Uganda

Soroti district is found in the eastern region of Uganda. In 2001 when the MPS initiative project was launched, the district population stood at 455,461 (female 235,528 and male 219,933). Females in the reproductive age group accounted for 24% of the total district population. The district population, comprising mostly of Iteso and Kuman sub-ethnic groups, is predominantly rural (86%) and mostly engages in subsistence farming with a few livestock.

Soroti district was the pioneer implementer of the MPS initiative in Uganda. Launched in 2001, the WHO-supported initiative aimed at reducing the exceedingly high Maternal Mortality Ratio (MMR) in the district through improved, access and utilization of quality reproductive health services.

Soroti's high MMR at 885/100,000 – a ratio much higher than the national average of 504/100,000 in 2000 – was mainly due to obstetric complications such as obstructed labour, retained placentas, abortion, over-bleeding, pre-eclampsia, sepsis, ruptured uterus, ectopic pregnancy and indirect causes such as anaemia.

The five-year intervention was implemented throughout the district with support from WHO, Soroti district local government, MoH, and other partners. It followed an extensive Reproductive Health (RH) needs assessment survey conducted to establish the gaps and needs in responding to the problem of high maternal mortality in the district at both health facility and community level.

To ensure that no woman or baby dies as a result of pregnancy related complications or childbirth in the district, the MPS initiative equipped doctors, nurses and midwives with enhanced obstetrics skills relevant for each level of health care. The IV plant at Soroti Referral Hospital was renovated to enhance its production. Obstetric drugs starter packs were provided. In addition, the initiative focused on improving the referral system right from the communities and health centers up to Soroti Referral Hospital. It equipped communities with bicycle ambulances; Health Centers IIIs (HCs) with radio transmission sets, HCIV with motorized ambulances. Theatre facilities were improved at Soroti Referral Hospital.

These efforts were supplemented with public reproductive health education on the benefits of attending Antenatal Care (ANC), delivering in health units, avoiding early pregnancies, and understanding responsible fatherhood. Information, Education and Communication (IEC) campaigns both in the communities and at ANCs also tackled cultural barriers and practices that hinder safe pregnancy practices such as over-reliance on Traditional Birth Attendants (TBAs), use of herbs and delays in seeking skilled medical attention when in labour.

Causes of high maternal deaths in Soroti

The MPS initiative in Soroti was preceded by a needs assessment baseline survey to identify factors responsible for the high MMR. The baseline survey was conducted between July and August 2001 by the MoH in collaboration with WHO as part of the preparatory activities towards the implementation of MPS in Uganda.

The MPS baseline survey had the following objectives;

- To describe the availability and quality of antenatal, delivery and emergency obstetric care, postpartum and family planning care provided at all levels in the health care system
- To assess the availability of drugs, supplies, facilities and transport required to provide this service
- To identify “gaps” in the provision of this service with particular emphasis on the services provided in the *Making Pregnancy Safer Guidelines*

According to the district databases for the period January – December 2000, Soroti institutional mortality ratio stood at 885/100,000, a ratio much higher than the national average of 504/100,000. The high rate was attributed to:

- Failure to fully implement the policy of delivery of integrated Reproductive Health (RH) services;
- Inadequacy of second line drugs for management of sepsis and malaria;
- Understaffing especially in the remote rural health units;



Soroti District Health Officer, Dr. Nicholas Okwana: The leadership shown at the district health services level was an important factor in ensuring timely intervention and necessary coordination and linkages between health facilities, communities and the donor community.

- Poor knowledge on warning or danger signs during pregnancy;
- Poor access to maternity services; up to one-third (33%) of health centres were not offering weekend services for maternity care;
- Gaps in orientation of midwives in maternal and newborn health, family planning, communication and counselling skills.

The armed insurgency in the district (1989-1991) had also contributed to the deterioration of the infrastructure.

Quality of RH care lacking

The survey established that of the staff conducting deliveries, only 55% had midwifery qualifications. Out of these, only 39% had received in-service training and only 27% in the last one year at the time of the survey. Coupled with other shortcomings, 64% of normal delivery records showed foetal monitoring below normal; and 71% vaginal examinations below normal; and 91% showed blood pressure monitoring below normal.

Logistics, supplies lacking

In addition to the above constraints, the district also experienced shortages of essential logistics at its health facilities. More than 60% of the health units sampled had inadequate anti-infection drugs for maternity care such as Ampicillin, Tetracycline, Chloroquin and Quinine. Over one quarter (27%) of health units did not have folic acid, gentamycin (78%) and egometrine was lacking in (53%); while up to 40% of health units did not have Depo Provera. Also, 80% of health units did not have urine and syphilis testing kits; 67% did not have cord ties, and 40% lacked HIV screening kits. Further more, nearly three quarters (73%) of health centers had no bag and mask for resuscitation of the newborns, while 39% and 28% lacked clinical thermometers and blood pressure machines respectively.

Due to the logistical constraints, foetal heart and blood pressure monitoring was below acceptable standards. In about 64% of deliveries, foetal heart was recorded only between 0-4 times instead of the

recommended 30 minute interval. Further more, while blood pressure (BP) was taken every 0-2 times, in 30% cases no BP was taken at all partly due to lack of BP testing instruments at 28% of the health units. In addition, only between 0-2 vaginal examinations were done, implying that either the mothers came when in either second stage of labour or that the health workers performance on examination fell short of expected standards.

Infrastructure, equipment shortages hurt RH care

Poor infrastructure and lack of essential equipment also affected RH service delivery. Almost two-thirds (60%) of health centers lacked examination rooms; 93% lacked tables and stools for gynaecological examination; and half (53%) of the health centers lacked delivery rooms, 47% did not have satisfactory toilet facilities; while nearly three quarters (73%) lacked reliable sources of water. Also half (53%) of the health centers lacked delivery rooms, and the basic equipment for a functional referral system, notably, radio transmitters and ambulances.

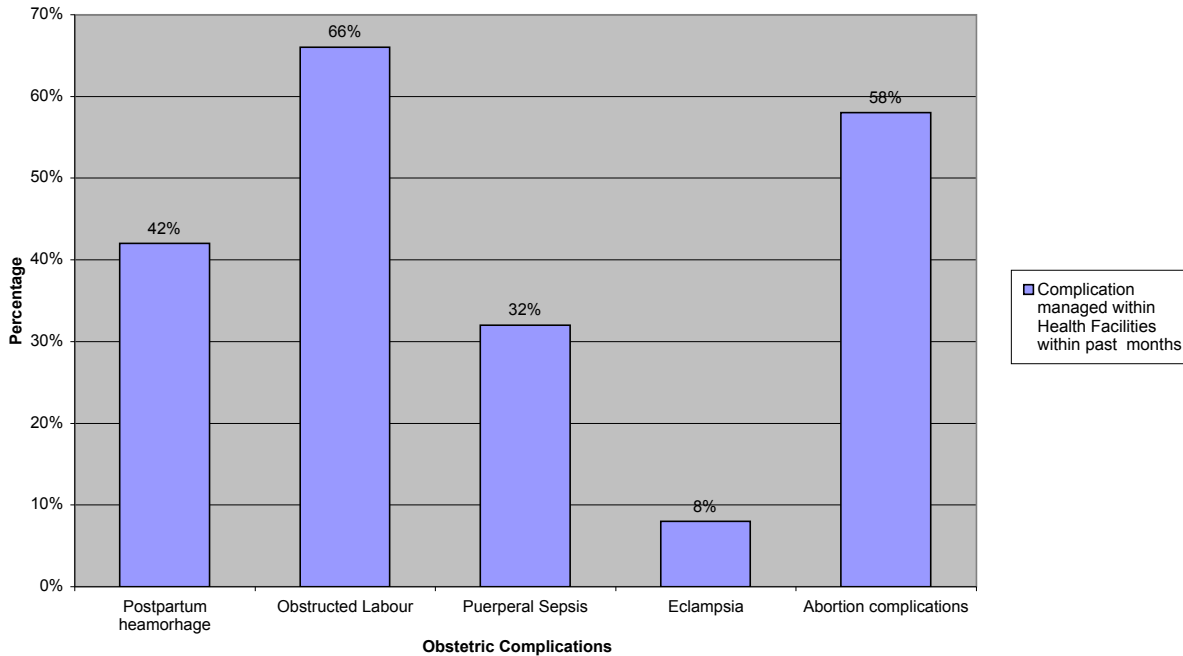
Slow referral system limits EmOC

In spite of obstetric complications being a major problem (see table below) in the district, emergency obstetric care was lacking at most HCIVs. Only 13% of health centers and 50% of hospitals could manage abortion complications. Similarly, only 17% of health centers could manage eclampsia and 44% post-partum haemorrhage.

According to the table II, obstructed labour accounted for 66% of obstetrical complications encountered by staff at both health centers and hospital facilities, followed by abortions (58%), and postpartum haemorrhage (42%).

While the above inadequacies necessitated quick and appropriate referrals, all the health centers had neither ambulances nor two-way radio transmitters to seek help from the district referral hospital for complicated delivery cases (obstetric emergencies). Consequently, skilled personnel did not escort 40% of pregnant mothers with complications during referral. Worse still, on average, it took a mother with complications three hours to reach a referral hospital.

Obstetric Complication managed within Health Facilities within past months



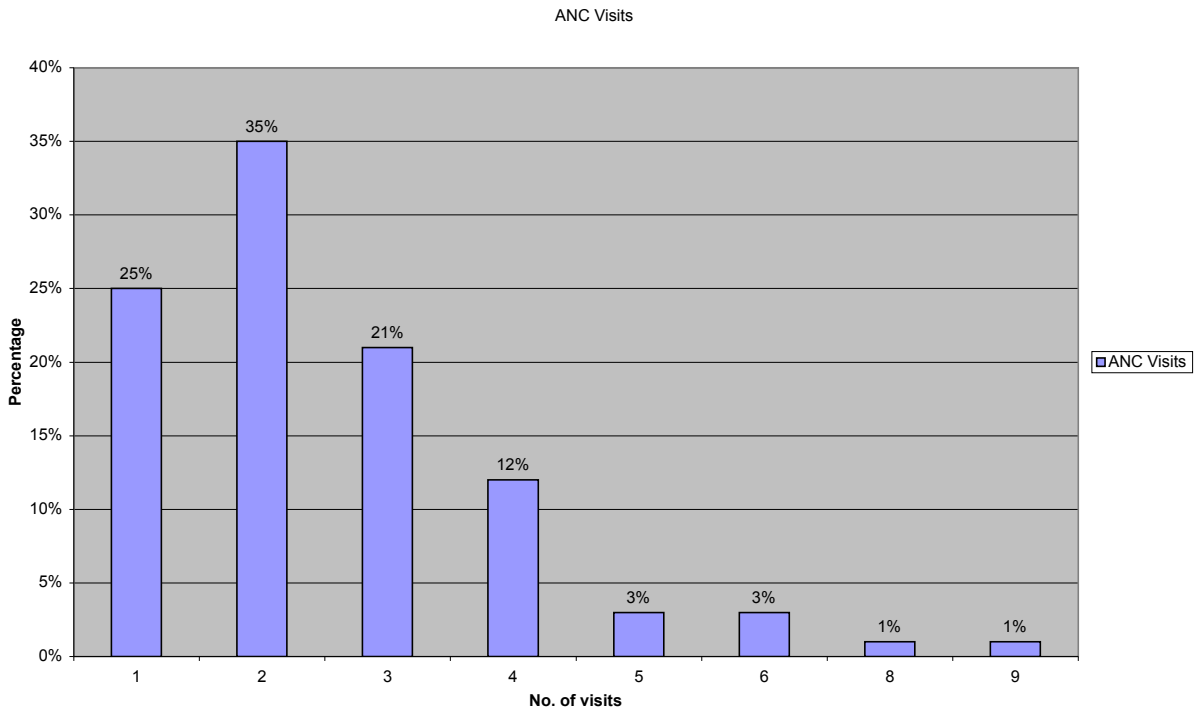
Awareness of danger signs low

Low understanding of danger signs resulted into late referral of women with complicated pregnancies. For instance, only 34% of ANC clients knew that vaginal bleeding was a dangerous sign; only 12% knew that labour of more than 12 hours was risky and an indication for referral; a paltry 10% knew that foul smelling vaginal discharge (sepsis) was risky; and less than half (40%) knew that persistent headaches, swelling and fits were dangerous signs. Knowledge on danger signs among TBAs for patients necessitating referral was low overall and was further compounded by the use of herbs (50%) during pregnancy and delivery.

Long distances affect ANC

The baseline survey examined a number of factors affecting healthy pregnancy outcomes. These included: health seeking behaviour as reflected by the number of ANC visits; and accessibility of ANC services in terms of distance and payments for the service.

It was found that mothers were not sufficiently educated about the benefits of attending ANC. Attendance cards showed that 86% of the mothers had attended ANC at least three times but the frequency dwindled thereafter. Besides the low knowledge on the benefits of completing attendance of ANC, the long distances appeared to be a deterrent as mothers spent on average one hour to travel from home to the clinic; 51% reaching by bicycle and 47% on foot. Whereas there was a significant increase (41%) in the number of mothers that booked ANC between 3-6 months – in comparison to 1995 when the majority booked after the seventh month – a significant number (31%) still booked after the sixth month.



Postnatal care neglected

Postnatal care was also of poor quality and care of the child tended to take precedence over care of the mother. Abnormal bleeding and family planning was for example discussed with only 15% and 48% of mothers respectively. Similarly, Blood Pressure (BP) was taken in only 35% of the mothers.

Midwives and nurses also tended to lay less importance on advising mothers to return for the post partum visit within the first week. Consequently, few mothers turned up for the post partum visit within the first week, the majority having been advised by nurses/midwives (HC 91% and hospitals 80%) to return within six weeks unless they experienced a major problem.

Soroti district moves to address MPS gaps

MPS Strategy and Approach

The gaps identified by the baseline survey provided a basis for planning and intervention. The first step in the MPS implementation was to share the survey findings and planned responses to address the reproductive health gaps with all shareholders across the national and district political domain, the health service delivery domain, the communities and potential beneficiaries.

The general approach involved reviewing reproductive care policies, defining priority areas, prioritizing intervention reviewing implementation procedures and training materials using WHO guidelines such as Integrated Management of Pregnancy and Childbirth (MCPC) and supplying some of the inputs. Building partnerships between district leaders, the district health team, hospital, HCs and communities to share resources, roles and responsibilities was a key component of the initiative.

Review meetings were held with politicians and providers on evidence-based obstetric care, equipping health units according to identified gaps, and holding educational talks on radio as well as training health educators.

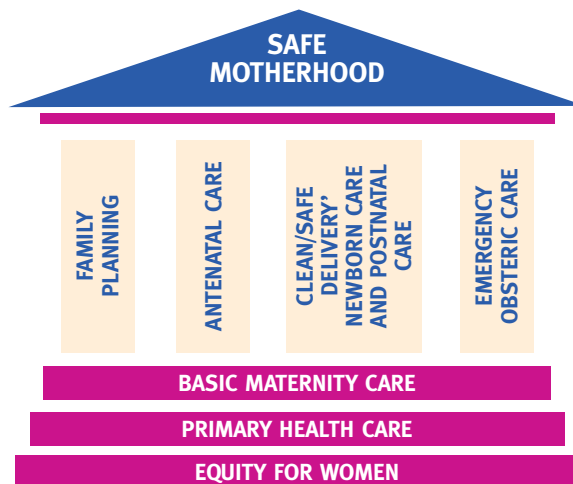
MPS specific objectives

To reduce on the high maternal and newborn mortality through improved delivery and utilization of reproductive health services and consequently make pregnancy safer, the project had the following specific objectives as a package:

- To improve health care with special reference to hospital services for safe pregnancy
- Increase the level of awareness on the importance of safe pregnancy, dangers of young motherhood, and importance of male participation in reproductive health
- Increase the number of people seeking reproductive health services

The objectives were guided by WHO's four pillars of safe motherhood; family planning; ANC; clean/safe delivery, newborn care and postnatal care; and EmOC.

FOUR PILLARS OF SAFE MOTHERHOOD



Since the majority of maternal deaths were due to failure to get skilled help in time for management complications, the MPS initiative in Soroti district adopted as a priority the strategy of developing a well coordinated EmOC-based referral system that could quickly identify complications and ensure their management with first aid and referral without delay to either HCIV or referral hospital. The strategy was based on the basic assumption that any pregnancy can become complicated and hence the need for EmOC referral system. Having a clean and safe delivery was another priority.

i) Life-saving EmOC, referral system re-activated

To reduce the unmet need for EmOC and consequently reduce MMR from 885/100,000 to the national target of 354/100,000, the Soroti MPS initiative put in place appropriate referral protocols specifying when and where to refer, and a recording system of referred cases right from homes, TBAs, communities, HCs up to the referral hospital.

The referral pyramid was streamlined by placing bicycle ambulances at every parish to transport mothers in bad condition to the nearest health unit. Motorised ambulances were placed at HCIVs to transport mothers requiring emergency care from the lower health units or communities to either back at HCIV or the referral hospital depending on proximity. To ease communication, two-way radio transmitters were placed at the various health units to call for ambulances and skilled health workers for cases requiring EmOC. The District Health Office (DHO) and the referral hospital monitor the radio communication to ensure the emergency calls are responded to.

In addition to equipping health staff with resuscitation skills before referral, provision was also made to have referral cases escorted by skilled health personnel to manage further en-route emergencies. To reduce delays in referrals at the home and community level, mothers, close families, TBAs and Village Health Teams (VHTs) were educated on the need to deliver at health facilities as well as the danger signs for complicated pregnancies and deliveries.

On their part, the local government improved on the road infrastructure, making more HCs easily accessible by ambulances. The local communities were also mobilised and sensitised on the need to support and where necessary share the running costs of the ambulances.

The referral facilities (HCIVs and hospital) had their capacities enhanced with mini theatres, skilled personnel to perform surgical procedures, e.g. safely perform caesarean sections, vacuum extraction, manual vacuum respiration and blood transfusion among other emergencies. They were also provided with drugs and other essential supplies.

ii) IEC activities stepped up

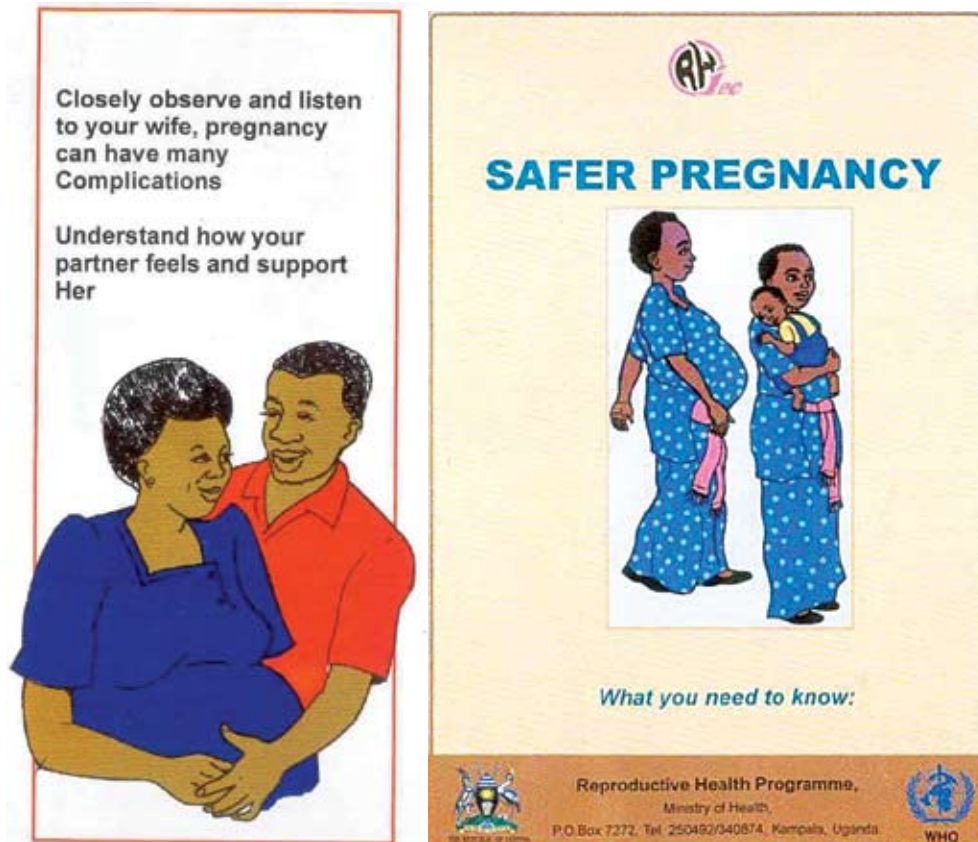
The district education office carried out a series of public sensitisation campaigns on the benefits of reproductive health and the need to seek skilled help during pregnancy, delivery and post delivery. The project relied on radio talk shows and spots but also used other channels such as sensitisation meetings and drama. Drama groups included Kyere Drama Actors in Serere sub county, Iteso Cultural Performers in Soroti, Kasiro Drama Actors in Kasiro, and Nawepa Drama Actors in Soroti Municipality.



Dr. Wilberforce Sekirime, formerly with WHO, was one of the people who provided technical support to the project. He attributes the success of the project to strengthening of the existing health and referral system; training of midwives to use labour monitoring tools such as the partogram, data collection and interpretation; and support from the community in managing the ambulance.

The district health education officer mobilised the drama groups, trained and equipped them with key MPS messages and also facilitated them to stage performances in the communities. As part of the outreach services and sensitisation, various types of Information Education and Communication (IEC) materials such as leaflets were developed, translated into the local language (Ateso) and distributed to health units in the district. The messages emphasised key pregnancy related danger signs/dangers of early pregnancy and responsible fatherhood. Public reproductive health education materials developed by the MoH with support from WHO formed part of the IEC materials translated and distributed to the HCs.

Examples of IEC leaflets developed by the MoH with support from the WHO





Kyere Drama Actors perform in the community: Drama was a key component of IEC activities.



Dr. Olive Sentumbwe-Mugisha of WHO addresses a gathering during one of the community sensitisation meetings in Soroti.

In Akaboi community, men and women were selected by the community. They were trained on danger signs, danger of adolescent pregnancy and on the concept of responsible father hood. They were equipped with bicycles, log books and bags so as to do continuous education. They were regularly supervised by the District Education Officer and sometimes where possible given allowances for meals when mobilising communities. They managed to mobilise communities in their local language using the various resources at hand.

iii) Administration, management revamped

Health administration and management was another critical component of the MPS initiative in Soroti. Health unit management committees were trained to link up with hospitals to monitor and efficiently use resources, especially in reproductive health. In addition the ambulance committees were also sensitised on how to mobilise and efficiently use ambulances. Maternal Mortality Audit Committees composed of selected health workers were also set up at health units and trained to manage and support MPS activities.

Lastly, in Akaboi, trained Community Resource Persons (CORPS) trained at various parishes and facilitated with bicycle transport to go around and sensitise people about the benefits of MPS programme using translated IEC materials. The resource persons later became the model community component of the MPS initiative in the district.

Health workers trained, re-oriented

The MPS initiative also had a training component to update the skills of medical officers and midwives using MoH life saving skills and WHO training guidelines based on IMPAC tools. The life saving skills had a community component composed of social mobilisation, outreach services and reproductive health education. The clinical training component emphasised delivery and obstetric emergency care such as manual vacuum aspiration, retained placenta removal, over-bleeding management, blood and fluid transfusion, and post-birth care especially limiting the chances of a mother from dying after birth. Training also focused on ANC and postnatal care through the Local Government Development Fund.



Mrs Joy Phumaphi, former Assistant Director-General, Family Community Health WHO HQ listens to Dr Geoffrey Egwau at Soroti Referral Hospital.

iv) HIMS re-activated and prioritised

The Health Information Management System (HIMS) was yet another critical component of the MPS initiative implementation. Health staff were trained in health information management, record keeping, data collection tools (ANC cards, partographs etc), maternal mortality auditing (gathering information on root cause of death), and management (analysis and utilisation). The programme for auditing maternal deaths at community level involved talking (verbal autopsy) to the bereaved

immediate family about the factors leading to the death to identify exactly what could have gone wrong. Community involvement in maternal care auditing gave health workers the opportunity to dialogue about the deaths and build confidence among the communities without the fear of being blamed for having failed to stop the death.

v) *Key partnerships built*

The MPS initiative realised quite early that the donors, notably WHO, while providing major support, success of the implementation would depend on the involvement of other stakeholders. Partnerships were therefore built between district leaders, district health team, hospital and HCs, communities, development partners and NGOs working in Soroti to share goals, resources, roles and responsibilities.

The district local government was identified as one such key partner and played a role in addressing the key reproductive health gaps. Roles ranged from improvement of the infrastructure such as roads, buildings, equipment, to advocacy at various levels of the district. The local government also built maternity wings and labour wards for some of the HCs that had not had any. They also provided solar power to enable HCs provide a 24-hour service.

The MoH was another key partner and provided the essential policies and standards for safe delivery and EmOC. The MPS implementation strategy was guided by MoH definition of EmOC as “the urgent medical care given to women for problems related to pregnancy, delivery and post-delivery, including post-abortion care.” (A Strategy to Improve Reproductive health in Uganda 2005 – 2010, December 2004). The MoH strategy also stipulates that a basic safe delivery care and EmOC should be available at all HCIIIs, while HCIVs offer the more comprehensive service, which includes surgical interventions and blood transfusion. In addition, the MoH equipped two theatres in the district Apapai HCIV and Tirir HCIV.

Another key component of the partnerships was aimed at increasing collaboration between the referral hospital and HCs through the sharing of ideas and resources. Audits by WHO, MoH and members of Uganda Prevention of Maternity Mortality Network at the referral hospital for example identified a lot of old and unused equipment occupying valuable space next to the maternity wing. After dialogue with the hospital management, the equipments were repaired and sent down to Kyere HCIII. Meanwhile the space created by getting rid of the unused equipment was turned into a wing for private patients and later patients referred for VVF.

The approach was found logical, quick and an efficient utilisation of resources and improved relations between the referral hospital and the district team responsible for the HCs. The parties involved learnt that through partnerships they could identify and share the meager resources and address each other's needs in addition to lobbying other development partners to respond to the district's urgent medical supplies needs. The Japanese Government donated two ambulances and a radio communication system while the American Government supported the equipping of the hospital.

Other key partners included UNFPA and UNICEF who supported and advocated for the birth and death auditing. *Voice of Teso*, a local FM radio station, offered airtime at a reduced cost and this increased the airtime available to promote the MPS initiative. Health workers from the hospital and HCs plus the communities participated in the radio talk shows and other health programmes to promote maternal care.

The more partners that were brought on board, the more the MPS initiative was broadened and made all-inclusive in the spirit of health for and by all.



In 2006, Ambassador Grover Rees from the United States Government, and Ms Serene Thaddeus of USAID visited Soroti Hospital to witness the success of the MPS initiative.

Outcomes:

Soroti MPS initiative registers remarkable gains

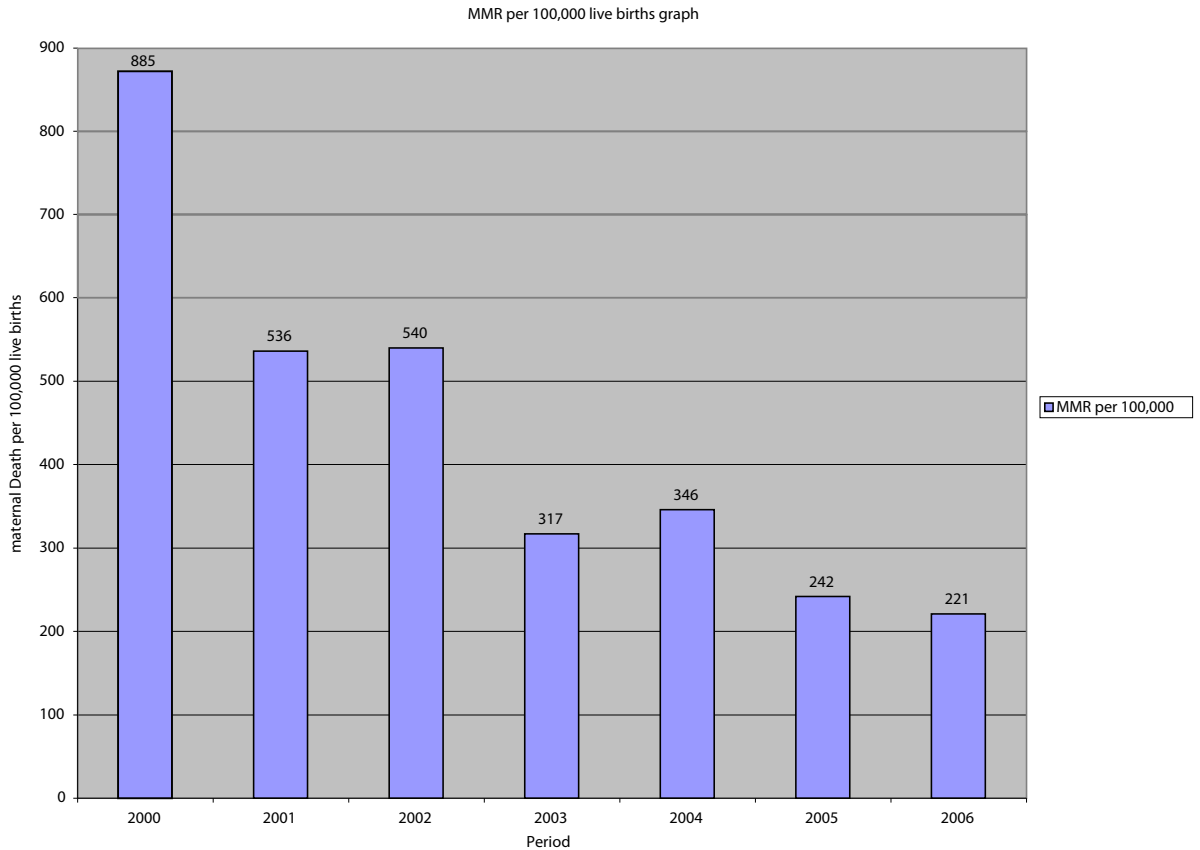
Overall, there has been an improvement in the reproductive health performance indicators since the launch of the MPS initiative in Soroti district in 2001.

Maternal deaths reduce drastically

The strategy to prioritise emergency obstetric care, together with appropriate referral for women with obstetric complications, led to dramatic outcomes. In a period of only five years the MMR has more than halved from 885/100,000 live births in 2000 to 221/100,000 in 2006, which is 50% below the 2006 national ratio of 435/100,000.



Ms Grace Were, Principle Nursing Officer, MoH: "Through the Soroti MPS Initiative, we have been able to; save a number of low birth babies (babies born with low weight); reduce on the number of mothers admitted with complicated malaria; and therefore contribute to the reduction of infant deaths".



The drastic reduction in maternal deaths is attributed to improvement in EmOC. Increases in deliveries at health units, ANC attendance, awareness of RH, male participation, logistics and essential supplies supplemented EmOC in reducing maternal deaths in the short term.



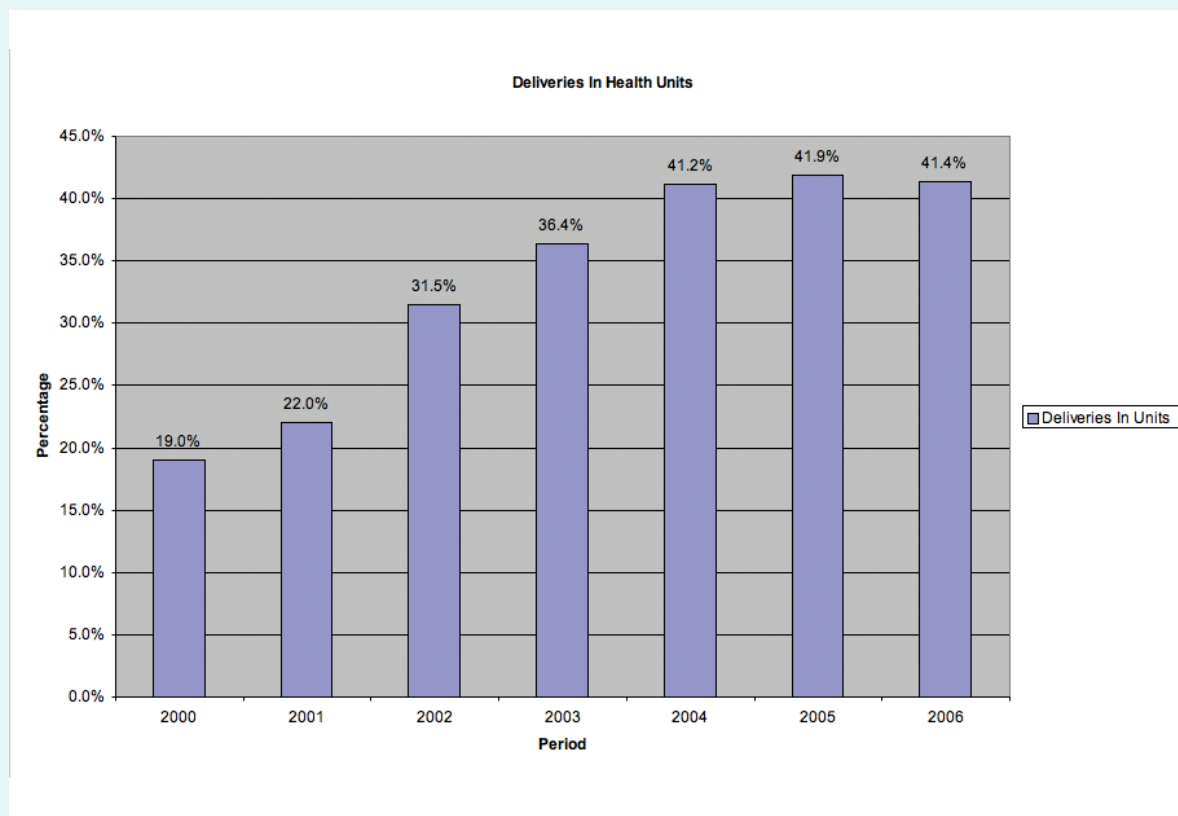
A patient is brought into the health center by an ambulance. The quality of EmOC depends on ambulances to get patients in critical condition to the most appropriate health unit in time.

i) *Emergency Obstetric Care and referral save lives*

The improvement in EmOC in the short term is attributed to the efficient referral system and skills improvement put in place at the start of the MPS initiative. By placing ambulances at HCIVs instead of the referral hospitals, bicycle ambulances in the communities, and radio transmitters at the majority of health units, the time taken for patients to reach referral hospitals has reduced drastically from an average of two hours to only 30 minutes. As a result, more women with complicated pregnancies can now get access to EmOC, a fact demonstrated by the very high patient load at the Soroti Referral Hospital maternity ward. Bed occupancy has reached 200%, meaning that for every patient on bed, there is one on the floor. While this has created numerous hardships associated with the patient overload at the ward, most of the women faced with pregnancy complications are nevertheless gratified to have access to the life-saving EmOC.

ii) Deliveries in HCs increase

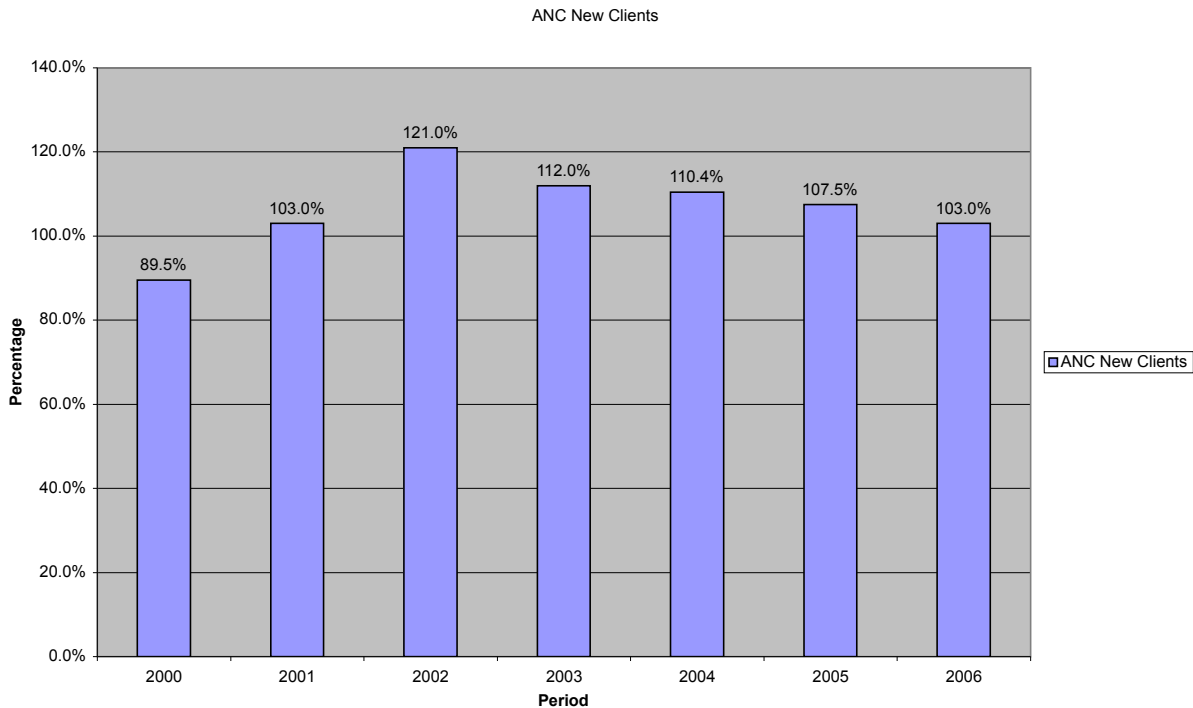
The percentage of deliveries at health facilities in Soroti has increased steadily from 19% in 2000 doubling to 41.4% in 2006.



Factors ranging from increased public awareness especially by the women on the benefits of delivering at health units, increased ANC attendance, and an improved referral system and reproductive health delivery care in general, have all contributed to the increase in deliveries at health units.

iii) ANC attendance improves

Attendance of ANC by pregnant women has also increased significantly. Attendance by new clients rose steadily from 89.5% in 2000 to 103% in 2003. At Serere HCIV, attendance has increased from between 15-20 to 30-60 pregnant women per session. Some women start attending ANC as early as two months in their pregnancy. On average mothers attend ANC two times and the challenge now is to increase attendance to at least four times (national average 42%) to 50%. Initially women used to fear PMTCT HIV testing but now willingly accept it in big numbers. Overall, the increased ANC attendance is attributed to increased public awareness of women on the benefits of ANC attendance.



iv) *RH awareness levels up*

The public has responded relatively well to the public awareness campaigns. The level of public awareness on the benefits of delivering at health facilities has increased. Many women come even before the labour pains start and wait to deliver at the health centers. For example, in Kyere sub-county, the bicycle ambulances in the communities are hardly used any more as women, especially in their second pregnancy, for fear of being caught up at home by any unforeseen complications, now report early and wait to deliver at health units. Similarly, most TBAs are responding well to the training and only deliver emergency cases where it is too late to get to health units. The TBAs have in some areas assumed a new role of mobilizing women on reproductive health and referring them to health units for ANC and deliveries.

v) *More men accompany wives for maternity services*

The increased public awareness of RH care is again evidenced in increased male participation. Almost all HCs reported increases in ANC clients accompanied by their male partners and willingness to test for HIV. The men, more than ever before, now respond appropriately to the pregnancy danger signs and are increasingly becoming instrumental in reducing late referral of complicated cases from the communities.

v) *Logistics, supplies, training improve*

Drug procurement has also greatly improved in the last five years. The process has been streamlined and now every department gives an input in the procurement of drugs. The policy has also been changed to emphasise high impact drugs often used in terms of disease pattern. This has reduced drug stock-outs and thefts.

Training of staff in life-saving skills to manage complications such as post-abortion care, and vacuum extraction among others has also helped improve the quality of reproductive health care at all levels of care. As a result of training, sustained supervision and monitoring, record keeping along the referral pyramid chain has greatly improved. The records capture all deliveries and



A drug shelf at Akaboi HC11: Staffs say supplies have greatly improved.

deaths plus associated issues in the pyramid area. This has eased data collection, analysis and guided responses to major gaps in the maternal care service delivery chain.

Also as a result of advocacy and mobilization, the communities have responded well and continue to support the MPS implementation. For example, the communities accepted the CORPs well and in many instances such as in Akaboi even constructed simple structures for use during community outreaches.



Grace Apio, one of the very dedicated midwives in Soroti Hospital Maternity Ward and now a trainer of her colleagues. She also supervises midwifery health services in lower units at HC IVs to HC IIs in the neighbouring districts as well as being part of the regional supervision team.

MPS initiative motivates maternity staff

Joyce Mary Adongo is a Nursing Officer/Registered Midwife at Soroti Referral Hospital. She says before the MPS initiative, the hospital experienced very late referrals of women with pregnancy complications. The rate at which women were losing babies either due to obstructed labour or other reasons was high. Very essential personal protective wear such as gloves and gumboots were inadequate, exposing staff, mothers and newborns to risk of infection.

Staff at the maternity ward also lacked essential life saving skills. But after the launch of the MPS initiative, the situation has greatly improved. The referral system has been re-activated and late referrals have drastically reduced, and consequently, maternal and newborn deaths. Staffs have also now updated their life saving skills. They can now assess and establish mothers' complications and respond appropriately. The presence of personal protection equipment has also been a great motivation as staffs now quickly respond to cases without fear of infection.

The hospital has also done its best to buy and stock essential supplies and drugs. Communication along the referral chain has also greatly improved. Staffs, having been alerted about incoming referrals well in advance through radio and mobile communication systems, prepare in advance to deal with the complications. The mobile phones also help them communicate with medical officers in case they are not at the hospital to respond appropriately to emergency obstetric cases.



Mothers thankful to ambulance system and Soroti Hospital

The 27 May 2007 will remain a memorable day in the life of 21-year-old Sara Agero having survived death because of her wise action to seek skilled health care when her pregnancy run into complications.

Sarah is seated with her newborn baby in Soroti Referral Hospital labour ward counting her self a “wise survivor for having attended ANC and having sought skilled help in time” the previous day. When labour for her second pregnancy started, the uncle of her husband rushed her on a bicycle to Tirir HCIV. After being diagnosed with compound presentation, she was rushed by ambulance to Soroti Referral Hospital from where she safely gave birth to a baby girl. She says she feared to deliver at home having been taught at her ANC to always deliver at a health facility. She swears that if she had delivered from home, she would have died. “The old women (TBAs) would not have known or managed the hurdles,” she says in a matter of fact tone.

Sara Agero at Soroti Referral Hospital: mothers like her owe their survival during childbirth to the improved referral system and obstetric care.

District leaders happy with outcomes

The district local government leadership responded well to the MPS implementation. Support ranged from finance, buildings (maternity wards and mini theatres), road maintenance, and advocacy at lower levels, monitoring and evaluation.

The district authorities attribute the drastic reductions in maternal mortality on the re-activated referral system. “MPS came to save lives. Maternal death is one area where we have scored. The death rates have drastically reduced,” says the Chief Administrative Officer (CAO) Mr. George William Omuge.

The district authorities are happy that more women than ever before, now deliver at HCs, and fewer newborns die than was the case in the past. He attributes the increase in deliveries at HCs to sensitisation of the communities on the benefits of skilled help during pregnancy and childbirth, plus the training of the VHTs on the shared responsibility in reducing maternal and newborn deaths.

The CAO attributes the drastic gains on the ambulances and radio transmitters, which have quickened up the referrals of mothers with complications. In addition, the district appreciates the support that WHO has extended to the MPS initiative. “Dr. Olive Sentumbwe-Mugisa of WHO has regularly checked on us, identified the loopholes and mobilised us to respond to the problem areas,” says the CAO. The district is also happy that after equipping and training of staff, HCIVs can now competently handle some of the complicated pregnancies or make appropriate referrals.



The CAO of Soroti district, Mr. George W. Omuge has always been very helpful with all the steps requiring top management, coordinated action and community mobilisation and takes particular interest to ensure that he takes timely action and decisions to ease implementation.

WHO support helped direct initiative to success



Dr. Olive Sentumbwe-Mugisa, National Professional Officer, Family Health and Population, WHO, Uganda.

Dr. Olive Sentumbwe-Mugisa, the WHO Family Health and Population National Professional Officer, regularly visited Soroti to get first hand information and guide the implementation of the MPS initiative. This was part of WHO technical support to MoH and Soroti district in the effort to reduce maternal and newborn deaths.

In her judgement, the success of this initiative depended very much on the commitment of the health workers and the positive district political leadership. The presence of an obstetrician/gynaecologist at Soroti Regional Referral Hospital was a key ingredient for improved quality of care particularly emergency obstetric care.

The service providers at the hospital worked tirelessly under the able leadership of the hospital medical superintendent. This is another component that needs to be emulated by all the other districts. Good management of hospital resources and team work make it possible for clinical supplies and drugs to be available.

It is important to note that at this particular time the hospital leadership attracted some resources from local government and central treasury to be able to do some infrastructure improvement. Partnerships with both the American and Japanese governments also came in handy at this time.

These achievements and interventions can be replicated in every district since Government has now allowed for an obstetrician/gynaecologist at district level hospital. In any case medical officers need to be specifically oriented in management of obstetric emergencies where the specialist does not exist. This focus has to be strengthened in the medical schools there after further mentoring can occur during practice at district level by senior colleagues in a systematic manner.



Dr. Oladapo Walker, the then WHO Country Representative regularly visited and mentored colleagues to reduce mortality and morbidity, and played a key role in directing the initiative to success.

More MPS challenges ahead

As the MPS initiative moves from the project stage to being institutionalised, critical challenges abound, especially concerning the sustainability of the momentum put in place in the last six years. While the local government still has the commitment to fund the MPS initiative, the scrapping of Graduated Tax has affected its ability to meet its financial obligations. While the MoH is more than willing to bail the local government out, its hands are tied by budgetary constraints. The health sector still receives less than 15 % of the national budget. The above constraints pose challenges in the provision of logistics, supplies, staffing, and maintenance of equipment and infrastructure that are critical to the provision of quality safe motherhood care.

i) Equipment, logistics, supplies taunt MPS

- The ambulances are a critical component of the EmOC and referral strategy and continue to play a big role in bringing the MMR down.
- However running costs (fuel, spare parts, repair etc) continue to increase as the ambulances age, and have increasingly become difficult to sustain. As a result, the ambulance committees

are beginning to feel the strain and will require a lot of mobilization to maintain the support and momentum exhibited during the MPS project period.

- In addition to the ambulances, radio transmitters also function irregularly and most HCs are increasingly relying on mobile phones. WHO, Ministry of Health and the district is trying to introduce village mobile phones in the remote areas from where emergency calls for ambulances and skilled help can be made from, unlike the radio transmitters, it is not easy to monitor phone communication along the referral pyramid and ensure response to emergency situations. It requires that the health unit contact numbers are known by the villagers.
- Furthermore, some of the mini-theatres such as the one at Serere and Apapai HCIVs are not yet operational and this continues to strain the EmOC referral system. Some of the theatres were poorly done and did not meet the expectations of the MoH, a reminder that theatres are not ordinary structures and require specialised contractors. Also, some theatres at HCIVs, years after they were erected, still lack the necessary equipment to perform surgical operations, a factor contributing to the high patient load at Soroti Referral Hospital.
- Similarly, while the congestion at the referral hospital maternity wards is a good sign that the referral system is working, and also tests the system; there is an urgent need to improve on the capacity of the wards (both space and skilled staff) to handle the overwhelmingly high patient load.
- This urgency is highlighted further by the fact that Soroti district continues to shoulder the burden of having to deal with obstetric emergencies from the neighbouring districts of Amuria and Katakwi at some of its HCIVs. The increased burden from neighbouring districts tends to distort Soroti's performance and increase its MMR indicators, and will only be managed if the MPS implementation is scaled up in the neighbouring districts.



A crowded maternity ward at Soroti referral Hospital: The improvement in the referral system has resulted into patient overload in the wards.

- Whereas a lot of progress has been made in the provision of logistics, supply of maternity drugs is sometimes irregular either due to delays in procurement, delivery or inadequate supplies due to lack of funds. Some health units go for several months without essential infection prevention drugs such as Sulphadoxine-pyrimothamine (fansidar) for Intermittent Prophylaxis Treatment (IPT) for malaria and pregnant women have to buy them, making it difficult for ANC staff to ensure compliance in drug use by pregnant women.



A WHO vehicle braves the flooded roads on one of its supervision visits to Akaboi HC11.

ii) *Bad roads keep TBAs around*

Bad roads continue to deter mothers from seeking reproductive health care services especially in the very remote rural areas. A notable example is the community served by Akaboi HCII that is hard to access by road from Serere HCIV. During the rainy season the road is impassable by ordinary vehicles and bicycles, and because of this, mothers find it convenient to be delivered by TBAs within the communities served by Akaboi HCII. On average, a TBA delivers about five mothers a month in this part of the district.



TBAs at Akaboi HC11. They regularly visit the HC to interact with midwives and report cases delivered by them in the communities.

Aware of the constraints, the staff at the HCIII have opted for constructive engagement with the TBAs to keep an eye on their activities through supervision and training, and with the limited resources, more than often, try to carryout home visits to follow up the mothers and newborns. On their part, the TBAs have reciprocated positively and refer complicated cases to the HC. Similarly, after delivering mothers, in addition to referring them to the HC for immunization of the newborn, the TBAs regularly report the deliveries to the HC, which then follows up the mothers in the communities through home visits.

iii) *More staff, training needed*

In addition to the above challenges, the reproductive health staff remain very few and overstretched. This is critically evident at Soroti Referral Hospital where the success of the EmOC and referral system has meant increased surgical service load among others, and ward rounds competing for skilled staff attention with emergency surgical operations in the theatre. The problem at the referral hospital is compounded by the lack of medical doctors at HCIVs to handle some of the complications that end up at the referral hospital. Further, the strained budgets have in many instances affected the rate of training and re-orientation of new reproductive health care staff.

iv) *IEC campaign must continue*

When initiatives with high public utility value – as the MPS implementation has proven in Soroti – start facing resource constraints for their sustenance, courting and drumming up support among the beneficiaries becomes an inevitable recourse. The district has to rise up to the challenge of sustaining and even stepping up the momentum among the beneficiary communities through an intensified IEC campaign. This necessity is best summarised in the words of Soroti District Health Officers (DHO) Dr. Okwana: “Health is not only for everyone, but by everyone.”

Besides, as the MPS project experience has demonstrated, increase in public awareness about the benefits of reproductive health care can translate directly into increased service utilisation such as ANC attendance, delivery at health units, and ultimately, reduction in maternal and newborn deaths. The following aspects of reproductive health awareness therefore need to be targeted:

- **Underage pregnancies:** Public awareness has to rise up to the challenge of addressing the prevalence of underage pregnancies, which, being prone to complications, are responsible for 35% of emergency cases that, now end up at the referral hospital. Any reduction in underage pregnancy directly translates into fewer complications, especially caesarean sections, and consequently less strain on the life-saving EmOC and the overstretched funds.

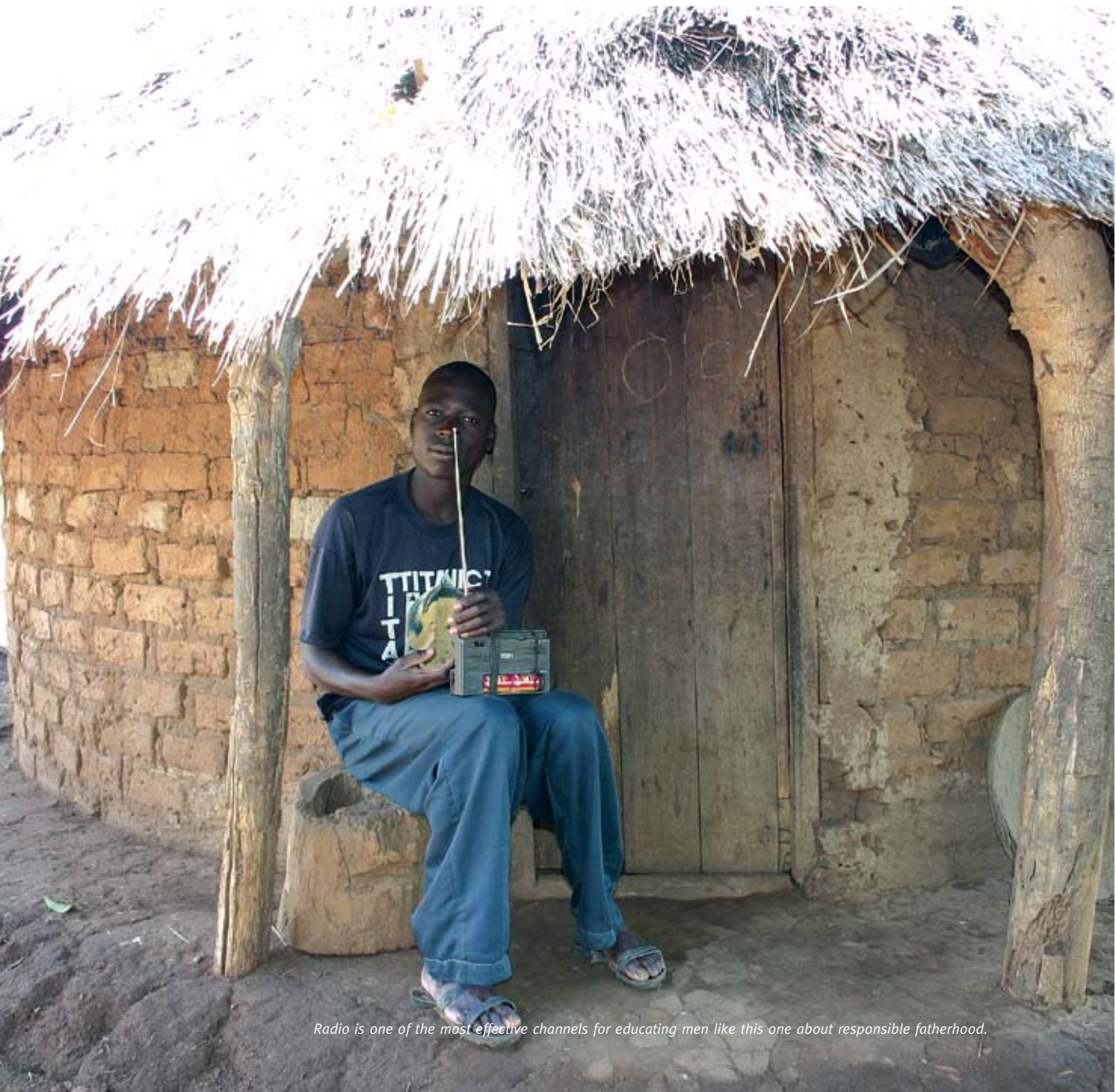
- **Child spacing, contraception:** Closely related to the above challenge is the need to step up family planning campaigns in the district to promote child spacing through affordable family planning methods. Male and female adults need to be sensitised about the benefits of child spacing and contraception among other family planning methods. This will entail addressing the related challenge of inadequate skilled staff to perform surgical contraception for mothers who seek it.
- **Appropriate ANC attendance:** Similarly, although ANC attendance has increased, the two times that the majority of pregnant women attend has to be increased to at least four times starting appropriately after 2 missed monthly periods, and should, together with more male participation, become the focus of sustained IEC sensitisation campaigns.
- **Community participation:** Mobilisation and sustainability of community participation is still a major challenge and CORPs need to be regularly replaced and motivated, hence the need for more advocacy and mobilisation at community level.

v) *Family planning needs scaling up*

Whereas family planning was not a direct area of the MPS intervention, it still remains a strong pillar for safe motherhood in the district; just as it is elsewhere in the country. Evaluations of the MPS initiative have so far indicated that if family planning had been targeted, the results would have been even much better. Therefore, subsequent implementation of MPS should strengthen family planning through partnerships with other bodies working in the district. The district is however gratified to learn that WHO is working with the MoH to review the curricula for family planning in the country, updating of job aids, and increasing community-based family planning services together with permanent methods such as surgical contraception.

vi) *Deaths of newborns a major worry*

Monitoring and evaluation continue to indicate that while MPS has had reduced maternal deaths, newborns from distant areas continue to die. The inadequacy of skilled health personnel at HCVs



Radio is one of the most effective channels for educating men like this one about responsible fatherhood.

compounds the situation. The continued deaths of newborn make a very strong case for the need to strengthen further all health units in the district by increasing the number of skilled health personnel, notably doctors at HCVs as well as orienting more health workers on the essential newborn care so as to strengthen both family and community based care in this area.

vii) *Post-natal care still wanting*

The death of newborns is linked to the low post-natal coverage which is still a major challenge for the district. Because of the limited staff, post-natal care is not given priority as emphasis is placed more on ANC, and delivery care. Mothers are not adequately cared for during the initial seven days of post partum, because of the limited numbers of staff and work load. At six weeks post partum, it is mainly immunisation and IEC on risk of cervical cancer that are addressed. Worse still, because of limited staff, some staffs advise mothers to return to the HC only in incase of post-natal complications.



A mother escorted by family members returns home with her newborn baby after delivering at Soroti Referral Hospital. Like many others, she is not adequately cared for during the initial seven days of post partum.



Yusuf Kayondo, an ambulance driver at Serere HCIV, says he has given out his cell-phone number to the communities and is regularly called to pick up emergency cases

Bad roads, long journeys hurt ambulances

28 May 2007: For ambulance drivers like Patrick Bongo, the referral system is still far from being a smooth sail. A minute ago, he delivered a mother from Ageregere village 15 kms from Amuria HCIV in the newly created Amuria district. The patient was picked from her home and after a short examination at the HC IV; she was referred to Soroti Referral Hospital. Jane Atuket, an enrolled midwife accompanied the patient on the 45 minute journey to Soroti hospital.

Bongo says he on average picks up 2-3 patients everyday, some brought to Amuria HCIV, and others, depending on their state or proximity, straight to Soroti Referral Hospital. “The roads in the villages are bad. There are almost no roads in some villages and we have to drive through bushes. This affects the state of the vehicle,” laments Bongo.



Patriick Bobgo, an ambulance driver at Amuria HCIV in the newly formed district of Amuria (formerly part of Soroti district and the MPS initiative) narrates his experiences at Soroti Referral Hospital soon after bringing a referral case from Amuria

The problem of bad roads is compounded by lack of reliable communication in some communities. This particular patient would have been delivered earlier but for lack of a mobile phone and a radio transmitter at Willa HCII – only 2kms from the patient’s home – the person who came for the ambulance had to travel 15 kms to Amuria HCIV, in effect delaying the patient pick up time.

Thankful that the vehicle is well maintained, Bongo says he is the lone driver on call 24 hours. “They need to think of a night driver urgently. They call me at night several times. Actually, I am on call 24 hours. Worse, there are no allowances say when out of station in Soroti, I operate on an empty stomach,” laments Bongo.

Despite the challenges, Bongo is upbeat about his work. “I am happy to serve my country. I want the patients to get better services,” he says, adding that the people in the community are happy about the ambulance because it has greatly helped them.

Some patients still delay to seek help

28 May 2007: Jane Atuket, an enrolled midwife stands outside Soroti Referral Hospital moments after accompanying a patient on the 45 minute referral journey from the new neighbouring Amuria district.

The patient she has accompanied on the ambulance is one such typical example of many who, despite the public awareness campaign on the signs of complicated pregnancies, still delay to seek skilled help. Atuket says a night nurse picked up the patient by ambulance from her home to Amuria HCIV. The patient had a history of severe bleeding for two days. She was already severely anemic but had ignored to seek help at the nearest HC only 2kms away from her home.



Jane Atuket: Some patients with complications in the new Amuria district still delay to seek skilled help.

“She would have died if she had stayed any longer,” says Atuket.

Atuket however paints a positive picture of the prevalence of cases of this nature. She says they get only one anemic case in two weeks, a big improvement compared to nearly a daily case five years ago. But like the midwives at Soroti hospital, she says that shortage of staff is still a major challenge at Amuria HCIV. The HC has only two enrolled midwives and one registered midwife. With one constantly in theatre, the two are overstretched.

Soroti offers key lessons to MPS initiatives

As the MPS implementation steers through its sixth year, both the outcomes and challenges offer key lessons to those seeking to implement the initiative, especially in low resource settings.

- i) While responding to high maternal and newborn deaths in low resource settings, prioritising obstetric care, particularly EmOC and the referral system, can drastically reduce deaths in the short-term period. The presence of ambulances and radio transmitters at HCs boosted the communities' confidence in the health facilities and attracted more emergency cases based on the knowledge that they would be easily referred to Soroti hospital.
- ii) The emphasis on EmOC notwithstanding, where resource and infrastructure limitations make it difficult to get mothers to the most appropriate referral point, the nearest referral site must be developed as much as possible to be able to assist women with problems paying special attention to strengthening both the traditional and added responsibilities for midwifery skills of health workers through focused training.

iii) The huge reduction in maternal deaths in Soroti in the last six years disproves the common belief that achieving good health indicators must always require a lot of money. With only **USD 200,000** Support from WHO over a period of three years, the district was able to respond quickly and bring down Maternal Mortality Ratio 50% below the national rate, demonstrating clearly that strong commitment from the stakeholders in the implementation of the MPS initiative, plus efficient utilisation of available resources, can achieve a lot in the short term and save women from dying from pregnancy or childbirth related complications.



Mr. Benjamin Sensasi, National Professional Officer, Health Information and Promotion: Documentation is very essential in keeping track of the progress made in MPS implementation. Sensasi frequently travelled to Soroti and took most of the pictures used in this booklet.

iv) Theatres are not ordinary structures and require specialised contractors to meet the standards set by government to avoid the shoddy work that crippled EmOC at some of the HCIVs. Besides pulling down the referral system, mistakes of that nature are too costly and extra efforts ought to be taken to avoid them in low resource rural settings.

v) Community sensitisation and participation is critical to the success of the MPS implementation. The communities participated in the radio talk shows among other communication channels by asking health workers very challenging questions and in the process built confidence between both parties. The Soroti MPS slogan “The baby should go back with the mother, and the mother should go back with the baby after coming to deliver in a health facility” or “Health not only for everyone but by everyone” are valuable direction pointers and a source of inspiration for the MPS implementation elsewhere.



*Dr. Anthony Mbone, Assistant Commissioner,
Reproductive Health, MoH.*

Conclusion

The outcomes of the Soroti MPS initiative documented in this booklet – including the challenges and lessons – provide valuable best practice on how to implement Making Pregnancy Safer initiatives especially in low resource settings. Prioritising outcome-oriented interventions especially EmOC and improved referral system in responding to high maternal and newborn deaths plus community involvement can drastically reduce maternal and newborn deaths in a short term.

However, to institutionalise the short-term gains in maternal and newborn morbidity and mortality, sustenance of such outcome-oriented interventions will largely depend on the sustained strengthening of the other equally deserving pillars of safe motherhood; family planning; antenatal care; and clean delivery, newborn care and postnatal care.

“Contrary to the view of many people that it is difficult to reduce maternal and newborn death, our experience working with Soroti informs us that being focused and putting resources in improving quality

of obstetric care and the referral system can yield results far beyond expectations. However, commitment and hard work on the side of health service providers and supervisors is a prerequisite for success,” says Dr. Anthony Mbonye, the Assistant Commissioner, Reproductive Health, MoH.

“Working together as a team from the MoH, WHO and blending with the district officials at all levels helped us all to achieve our goals and targets. I am grateful to the drivers of the ambulances who dedicated their lives to saving mothers and continue to spend long hours away from their families.

“To us as a ministry, it gives us hope and it is indeed a source of inspiration to continue to do even more in other districts. It was possible for us to follow and document this work because of the effort of both the ministry through Mr. Emmanuel Kayaga and the Soroti district HMIS focal person Mr. Wakwesa who both worked tirelessly to set up the data system at health facility and district levels,” adds Dr. Mbonye.

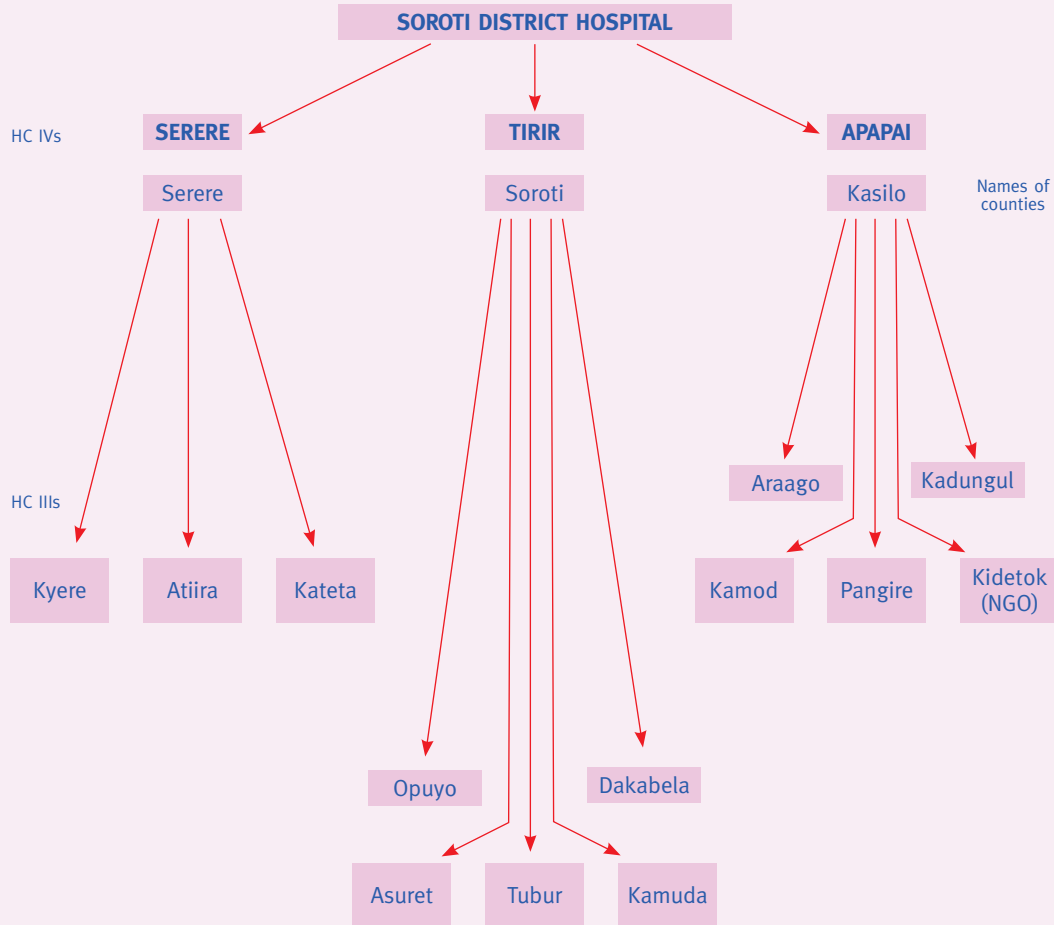
The districts neighbouring Soroti and indeed the rest of the country and the developing world seeking to implement the MPS initiative need to include from the start, family-planning as a long-term strategy component of safe motherhood. Besides being a sustainable fallback pillar for EmOC’s short-term gains, family planning has the added advantage of reducing poverty and promoting sustainable development.

Last, but not least, this document is a powerful advocacy tool for those seeking to respond to the problem of high maternal and newborn mortality. The best practices documented here demonstrate that the MPS initiative is viable and should be replicated in similar settings to save the lives of mothers and newborns.





HEALTH SECTOR PYRAMID FOR SOROTI DISTRICT



Implementation was done through these tiers. The major focus was on functionality of the hospital for comprehensive EmOC, ANC and PNC care. The community was also mobilized in various ways.

WHO publication, Kampala Uganda



Kyere Health Center III - More than ever before, men accompany their partners for ANC.

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