In the past two decades, the global health community has witnessed tremendous gains in child survival. Yet, these gains have not been matched in the survival of pregnant women and mothers. The continuing high estimate of more than 500,000 women dying annually due to pregnancy, however, obscures some real progress. At least 13 countries (Bangladesh, Benin, Bolivia, Egypt, Ethiopia, Indonesia, Guatemala, Kenya, Mali, Morocco, Nepal, Rwanda, and Senegal) recorded promising reductions of 17 percent to 48 percent in maternal mortality ratios within one decade.\(^1\) Over the past two decades, close to four million maternal deaths have been averted as a result of the increased use of family planning.\(^2\)

Maternal health and survival directly affect child survival. Four million newborn infants die each year. Many of these deaths are preventable. Tackling this problem requires improved health and nutrition status of women before and during pregnancy as well as improved care during pregnancy and childbirth. The deaths of mothers and newborns and the lives of those who survived pregnancy complications with a serious disability, depriving them of health, productivity and prosperity, represent a significant “unfinished agenda” in the decades-long effort to protect and improve the survival, health, and nutrition of mothers and children in developing countries.

**USAID approach to Maternal and Child Health**

The United States government recognizes its opportunity to address these challenges in cooperation with the global health community. In December 2007, the US Congress provided USAID with a 25 percent increase in funding for maternal and child health programs. With these increased funds, by 2013 USAID will have strengthened its maternal and child health programs to support the achievement of:

- Average reductions of both the under-5 mortality rate and the maternal mortality ratio by 25 percent in 30 high mortality-burden countries;

- Average reductions of child malnutrition by 15 percent in at least 10 of these countries;

- Addressing the human resources crisis by increasing by at least 100,000 the number of functional (trained, equipped, and supervised) community health workers and volunteers serving at primary care and community levels.\(^3\)

The principles of USAID programming in maternal and child health involve a systematic approach that includes:

- Focus on maternal, newborn, and child mortality reduction as a clear goal;
• Support to country-led strategies;

• Identification and scale up of high-impact interventions most relevant to the country, using country-specific epidemiology as the basis for identifying priorities and interventions;

• Aim for impact at scale;

• Strengthening of health systems and human capacity to support and sustain improved maternal and child health outcomes;

• Support for the most effective approaches to deliver key interventions to vulnerable families and communities by identifying the best mix of system strengthening, demand creation, and community and public-private approaches;

• Introduction of approaches that link water and sanitation investments to improved women’s and children’s health, and

• Complementarities with other US government agency, multilateral and bilateral donor, and host country resources.

Unintended Pregnancies

Of the 187 million annual pregnancies that occur in developing countries, more than one-third are unintended, suggesting a great need and desire for family planning. Family planning can prevent a significant proportion of all maternal deaths by preventing unintended pregnancies and unsafe abortions, delaying first birth, spacing births at the healthiest intervals for mothers and infants, and ending childbearing when women have reached their reproductive goals.

USAID supports the key components of effective family planning programs -- service delivery, training, performance improvement, contraceptive availability and logistics, health communication, biomedical and social science research, policy analysis and planning, and monitoring and evaluation. A reliable and sustainable supply of contraceptives is the lynchpin of a successful family planning program—“no product, no program.” Recognizing this, USAID helped found the Reproductive Health Supplies Coalition (RHSC), a global partnership of public, private, and non-governmental organizations dedicated to ensuring that all people in low- and middle-income countries can access and use affordable, high-quality supplies to ensure their better reproductive health. For example, in both the Dominican Republic and El Salvador, countries that will soon graduate from USAID family planning assistance, USAID technical assistance contributed to national contraceptive security committees being given legal authorization, funding for contraceptive security, stronger prioritization for family planning programs, and the development of new contraceptive procurement arrangements by Ministries of Health and Social Security Institutes.
Unsafe abortions
The primary reason for abortion is unintended pregnancy. Nearly 20 million unsafe abortions and an estimated 66.5 million resulting maternal deaths annually and worldwide represent a large global problem. USAID addresses this through family planning to avert abortions and post abortion care (PAC) for life-threatening complications, as well as to avert repeat abortions.

USAID’s family planning assistance in Eastern Europe and the former Soviet Union is intended to directly impact the abortion rate by increasing the availability, social acceptance, and use of modern contraception. The USAID-supported Maternal and Child Health Initiative in Russia is designed to improve maternal and newborn healthcare and prevent mother-to-child transmission of HIV/AIDS by promoting client-centered family-planning services, essential care of newborns, and healthy lifestyles. In target regions in Russia, abortion rates fell from 49.1 to 43.2 abortions per 1,000 women of reproductive age as modern contraceptive use increased from 40.9 percent to 57.7 percent. Additionally, unplanned pregnancies decreased from 34 percent to 20 percent.

In order to address the need for need for PAC, USAID has supported the decentralization of PAC services from tertiary facilities to primary health centers. This strategy, along with continuous attention to quality improvement, has proven to be important in expanding access to life-saving care and increasing the uptake of family planning. In Senegal, more than 500 health personnel were trained in PAC from 323 facilities (23 health centers and 300 health posts) in four regions resulting in a 47 percent increase in the number of women treated with PAC services and 56 percent of PAC patients received a contraceptive method prior to discharge from the facility. In Tanzania’s Geita District, the number of facilities providing PAC services increased, with the number of women obtaining PAC services increasing by nearly two-thirds. In health centers where family planning counseling and methods were provided in the PAC unit or in the same place as emergency treatment, 89 percent to 97 percent of clients accepted a family planning method prior to discharge.

Prolonged/obstructed labors and fistula
Obstructed labor accounts for 4 percent to 13 percent of maternal deaths in Latin America and the Caribbean, Asia and Africa. USAID tackles this problem with several strategies. One is informing pregnant women, their families and their communities about the problem of prolonged/obstructed labor, how to recognize it, and the importance of accessing hospital services promptly. USAID has promoted birth preparedness tools to help women save money; plan for childcare, transport and, in some cases, blood donors; and recognize prolonged labor. USAID has also invested in community mobilization models, relying on communities to institute emergency funds, identify transport, and communicate with health officials. Models of success in community mobilization have been identified in Nepal, India and Peru, although improved outcomes were documented primarily for the newborn and typically these strategies are linked with improved service delivery.

USAID has also invested in service delivery improvement strategies. These include behavior change of providers to become more welcoming and respectful of women, their families and traditional birth attendants (TBAs) who may accompany them. Qualitative research in Bolivia and Guatemala demonstrate that approaches to change attitudes and behaviors of providers can be successful and, along with other strategies, increase utilization of services, which is crucial to resolving cases of prolonged/obstructed labor before death or disability occurs.
Recognition of prolonged labor and prompt action in institutional settings needs increased attention. While the partogram is a well established tool for use by skilled birth attendants, it is often infrequently or inadequately used. A simplified tool, if found to be effective, would be extremely effective as would consistent application of quality improvement approaches for prompt action in the event of prolonged labor.

Cesarean section is the life-saving intervention for obstructed labor. Inappropriate use, however, can result in neonatal and maternal mortality and morbidity.\(^1\) This may be a growing problem as incentives for institutional care bring an increasing number of women into hospitals, especially if health personnel are inadequately trained, equipped, and supervised.

Many women who have survived obstructed labors now experience obstetric fistula with urinary and/or fecal incontinence. USAID now supports 25 fistula centers in 11 countries that were able to triple repairs between 2006 and 2007 with a total of more than 7,000 lives transformed in fistula repair programs supported since 2005. Contrary to the general advocacy campaigns, the programs are intensive and expensive. Challenges include the severe shortages of surgeons and trainers; many of the fistulas are complicated rather than “simple,” which lowers the chance of success; and limited evidence exists for clinical standards for fistula repair to enhance safety and efficiency. Most importantly, there are numerous missed opportunities for prevention of fistula that would constitute a more effective public health approach to this problem.

**Eclampsia/pre-eclampsia**

Hypertensive disorders of pregnancy account for 9 percent of maternal deaths in Africa and Asia and have become the leading direct cause of maternal mortality in Latin America and the Caribbean at 26 percent.\(^8\) The evidence base for use of magnesium sulfate for pregnancy-induced hypertension (PIH) is well established. In Tver, Russia where PIH was the leading cause of maternal mortality, USAID assisted in the development and application of evidence-based guidelines promoting use of magnesium sulfate and early delivery for mothers with moderate or severe PIH leading to cessation of convulsions and death from eclampsia.\(^12\)

Preventive strategies such as anti-platelet agents and calcium supplementation, as well as other interventions such as anti-hypertensives and bed rest now need formal review of the evidence. USAID is supporting the WHO in this endeavor to conduct a systematic review of pre-eclampsia/eclampsia, grade the evidence, and prepare clinical practice guidelines.

**Hemorrhage**

Hemorrhage, primarily postpartum hemorrhage (PPH), accounts for 34 percent of maternal deaths in Africa and 31 percent in Asia.\(^8\) USAID has worked intensively with WHO and professional associations to promote high impact interventions to prevent this problem and supported WHO to review and grade the evidence and develop the guidelines for prevention of postpartum hemorrhage, which have been taken up around the world. This has included promotion of active management of the third stage of labor (AMTSL) that can prevent 60 percent of PPH. USAID has promoted AMTSL in over 25 countries. In 90 facilities in Ecuador, by employing modern quality improvement
approaches, over 90 percent of women having normal births receive AMTSL. A seven-country study supported by USAID, soon to be published, describes the actual application of AMTSL (forthcoming) and will provide much needed insight into the issues surrounding effective and full application of AMTSL. The WHO guidelines for Prevention of PPH have led the way for introduction of misoprostol, an uterotonic that can be given orally and does not require a cold chain, by providers trained in its use in community settings. USAID is supporting its introduction in a number of countries.

Since not all PPH can be prevented, USAID is supporting WHO to review the evidence and development guidelines to treat PPH and USAID expects to disseminate these guidelines, train personnel and develop quality improvement programs to promote widespread effective care.

USAID is also supporting the development and expansion of new technologies and approaches that may be especially helpful in the community setting. For example, USAID is supporting efforts to make oxytocin in Unject™ available through supporting stability studies, registration, and development of a time-temperature monitor to promote needed cool storage. In addition, USAID is funding a randomized controlled trial of a simplified method of active management of AMTSL that, if successful, will make provision of this intervention in the community far more accessible.

Anemia

Worldwide, 45 percent of pregnant women are anemic. Anemia causes 4 percent of maternal deaths in Africa and 13 percent in Asia. Globally iron deficiency anemia is associated with 22 percent of maternal deaths. Beyond the deaths, anemia is associated with reduced immunocompetence and decreased capacity for work and is, in general, widely underappreciated for its burden of disability. A recent meta-analysis shows that correcting anemia of any severity reduces the risk of death. USAID-supported research has shown that women’s noncompliance, a generally assumed barrier to consumption of iron supplements, can be overcome with behavior change communication. The major barrier to widespread consumption is the inadequate supply and distribution of the supplements. USAID supports a package of approaches that includes universal daily iron folate supplementation in pregnancy, fortification of commonly consumed foods with micronutrients, deworming, control of malaria, and optimal birth spacing. There are many examples of small scale successful programs. One innovative program in Gumla District of Jharkhand, India where more than 70 percent of frontline health workers were themselves anemic demonstrated that workers with normal hemoglobin levels increased from 23 percent to 50 percent in a few months. Once treated for anemia, they became a powerful force in their communities in advocating for iron consumption through foods and oral supplements, taking deworming medicine, and preventing malaria by sleeping under treated bednets.

Infections

A continuing threat to the success of maternal health programs and the overall survival of pregnant women is the HIV/AIDS global pandemic. HIV/AIDS has been documented to contribute to 6 percent of maternal deaths in Africa. In some countries, AIDS may have reversed gains made in maternal mortality. Preventing and controlling HIV infection and illness is very important because HIV infection can increase the risk of obstetric complications, Over the last decade, the US has contributed resources and implemented programs targeting pregnant women to fight against
HIV/AIDS. Through the President’s Emergency Plan for AIDS Relief (PEPFAR), considerable efforts have been made to create and improve prevention of mother-to-child-transmission of HIV (PMTCT) in 15 targeted countries. More needs to be done to reach the ultimate goal of PMTCT programs of improving maternal and child health. Family planning and maternal health programs can be effective partners in HIV/AIDS prevention by supporting education, counseling and testing (including partners), promotion of condom use, and other HIV/AIDS prevention methods. Beyond preventing maternal infection and transmission, HIV and maternal health programs must work together to provide the antiretroviral drugs (ARVs) to women when needed and follow women into and beyond the postpartum period to promote their long term health and survival.

Malaria in pregnancy contributes to 400,000 cases of severe maternal anemia and 10,000 maternal deaths each year. Through the President’s Malaria Initiative (PMI), USAID and other US agencies have taken on the goal of reducing the number of all deaths caused by malaria by 50 percent in 15 high-burden African countries by 2010. Specific and ambitious targets have been set for use of insecticide treated nets, (ITNs), indoor residual spraying (IRS), and intermittent preventive treatment for pregnant women (IPTp). It is relatively easy to get widespread coverage for nets and spraying but intensive efforts in IPTp can sow good results. In Kasese District in Uganda, coverage of pregnant women with 2 doses of SP increased from 27 percent to 76 percent in less than a year. USAID expects that these programs will contribute substantially to the health of women and their ability to withstand postpartum hemorrhage.

Sepsis causes 10 percent of maternal deaths in Africa and 12 percent in Asia. While there is standard information about addressing this problem, there is little recent information on the effectiveness of approaches to prevention, identification, and treatment of this significant contributor to maternal mortality.

**Postnatal depression**

Insufficient data and understanding about the prevalence and impact of depression, particularly postpartum depression exists worldwide. USAID is supporting a major retrospective and prospective study of maternal ill health in Bangladesh that includes postpartum depression. USAID is collaborating with researchers in maternal morbidity and disability studies in other countries to improve understanding of this problem. Developing cost-effective interventions to identify and treat postpartum women with depression is a potentially important and highly neglected area.

**Health systems**

USAID recognizes that addressing the major causes of maternal mortality through specific clinical interventions is necessary but not sufficient to reduce maternal mortality effectively and rapidly. Health governance, management, financing, pharmaceutical and commodities, systematic approaches to quality improvement, training, supervision and retention of health workers, and health information systems are also essential to achieving and sustaining success. A substantial portion of USAID resources is being directed toward identification and promotion of effective practices in health system strengthening related to maternal and newborn care.

**Improving the evidence base**
Even though research on maternal health including epidemiology, new technologies, and effective interventions has increased dramatically, far more needs to be done to identify more effective and cost-effective interventions and approaches to reduce maternal mortality and improve maternal health. In addition to continuing to support the Demographic and Health Surveys (DHS) that provide information on mortality, coverage of services, and beliefs and practices, USAID sees the important potential of improving the evidence base on, among other areas: national and sub-national causes of maternal death, morbidity and long-term disability to better target program strategies; new technologies, such as a simplified approach to AMTSL and a simplified partogram; documentation of safer and more effective and efficient clinical approaches for Cesarean section and fistula repair; feasible approaches to effectively getting care to the poor, including transport; community-based financing; incentives for providers to work in distant settings and to consistently provide quality care; application of indicators for high-impact interventions (that are imbedded within antenatal, skilled birth attendant and postpartum care, but not routinely collected); audit approaches for efficient monitoring of the provision of high-impact interventions; and qualitative research that illuminates how to motivate birth attendants and better understand the needs of childbearing women and their families to foster expanded utilization of care.

We know enough to act now - to introduce and expand evidence-based interventions to reduce mortality. We also need to fine tune and identify innovations for our approaches to achieve better access, quality, and utilization of life-saving care.
USAID research and programs and the results mentioned in this submission are achieved in partnership with our partners including governments, UN agencies, universities, corporations, NGOs and others throughout the world.