

Draft Outline for the Surgeon General's Call to Action on Global Health

1. What is Global Health? Why is it important today?

1.1 Definition

Global Health encompasses the goal of improved health for all the people of the world. This has a direct relationship to the health of all Americans. It requires international cooperation and shared values as a means of addressing illness, public health, as well as emergencies of all sorts. It acknowledges the possibility of swift transmission of illnesses through global travel and trade.

1.2 Why Now?

In 2005 the health of the world's citizens is remarkably uneven. A child born today in Japan, for example, can expect to live to age 82 years on average, whereas it is unlikely that a newborn infant in Zimbabwe will reach his or her 34th birthday. Over several decades, scientific progress has expanded our ability to improve human health, and many regions of the world have achieved significant health gains. Yet extreme deprivation in health is still widespread. Resolving this predicament of major health improvement in the midst of deprivation is one of the greatest global challenges we face. These health disparities exist in a world that is becoming more closely linked in all domains, including health. The rapid spread and quick containment of severe acute respiratory syndrome (SARS) demonstrates the interconnectedness of our world as well as any recent health phenomenon. The same trend can be seen with HIV/AIDS and the potential to link solutions and best practices studied in one part of the globe with persistent health problems in another.

To protect an individual against old, new or reemerging illnesses requires global cooperation. As the ability to develop vaccines and protective strategies improves, treatment can be refined and broad approaches can be strengthened. Biomedical research that advances our global work is critically important. There have been stunning global health successes. The challenges are large and complex but can be met through concerted effort.

1.3 Scope of Action

This Call to Action will focus attention on and urge support for those efforts that have the potential to stop the major disease challenges of our time. Infectious diseases and health crises needing immediate attention such as starvation and malnutrition as well as those caused by natural disasters, armed conflict or bioterrorism are included. It is accepted that each individual should have the opportunity to reach his or her full potential. The complex socioeconomic issues that form the substrate of health including poverty, the need for economic development, the overall level of medical care, and cultural issues are acknowledged, but not addressed in this Call to Action.

2. Priority Areas of Concern and Action in Global Health

2.1 HIV/AIDS

HIV/AIDS is the defining medical and public health issue of our time. It can be counted among the great medical scourges in history. By 2003, HIV had affected a cumulative total of more than 60 million people, a third of which have died. Nor is it under control. HIV/AIDS remains a constant crisis. Today it is estimated that 40 million people are infected with HIV/AIDS with a death occurring every 11 seconds. It has reached devastating numbers in sub-Saharan Africa and is increasing in other countries and regions, including China, India, the Caribbean and parts of Eastern Europe and central Asia. The U.S. Government has made the fight against HIV/AIDS a top priority, not only

for humanitarian reasons, but because the HIV/AIDS crisis threatens the prosperity, stability, and development of nations around the world.

By the time HIV/AIDS was first diagnosed, it was already distributed across the world. Although given a high research priority almost immediately, progress has been hard won. This retrovirus was discovered to cause deterioration of the immune system, and to mutate quickly. When work started to diagnose and treat HIV/AIDS patients, antiviral treatments were in their infancy. Blood tests were developed, the means of infection and transmission were identified and public health alerts were issued. The lethality of HIV/AIDS and its contagious nature were quickly identified. Antiretroviral drugs were developed slowly and none have been perfect answers. Each stage of understanding created new targets for research. Progress has been made toward reduction of maternal transmission of HIV/AIDS, although infants across the world are still born already infected with HIV/AIDS. This world epidemic continues to threaten the entire populations of some countries.

New treatments including antiretrovirals, new cellular targets, and vaccines are urgently sought. The quest for affordable drugs continues, as does the effort to distribute them. Until HIV/AIDS can be prevented each person treated needs sustained treatment throughout their life. The development of a safe and effective vaccine for HIV is a top biomedical research goal. Ultimately, the ending of the pandemic must be a goal of the highest global health priority.

The United States and various multilateral organizations have worked together to combat this disease. President Bush's Emergency Plan for AIDS Relief (see below) combined with the work of the Global Fund to fight HIV/AIDS, Tuberculosis and Malaria (see below), the World Bank, and the WHO/UNAIDS programs provided antiretroviral treatment to approximately 700,000 people by the end of 2004.

2.1a The President's Emergency Plan for AIDS Relief

The commitment of the United States to fighting global AIDS was clear when the President's Emergency Plan for AIDS Relief was announced in 2003. The Plan has a budget of \$15 billion. This initiative focuses on achieving the goals of treating at least two million HIV-infected persons with antiretroviral treatment, preventing seven million new infections, and providing care and support for 10 million persons infected with or affected by HIV, including orphans and vulnerable children in 15 focus countries. These countries, which are home to nearly 50 percent of HIV infections worldwide, are: Botswana, Cote d'Ivoire, Ethiopia, Guyana, Haiti, Kenya, Mozambique, Namibia, Nigeria, South Africa, Tanzania, Uganda, Vietnam, and Zambia.

The U.S. Government has just received the first data from the field on the numbers of people treated under this program, and it is in the process of verifying those numbers. But the reported numbers are very encouraging. They indicate we should be on track to meet the President's expectations to treat over 200,000 people in the 15 focus nations by June 2005—the end of first year of full implementation of the Plan's treatment programs.

The increasing success of these programs, although far from reaching all who need it, is based upon the use of highly active antiretroviral treatments or HAART. Simplified combination doses of medications have helped to treat and achieve the continued adherence that is necessary to control HIV/AIDS.

Million of affected people still need to be reached. Overall 72% of the unmet need for HAART is in sub-Saharan Africa; 22% is in Asia.

2.1b The Global Fund to Fight AIDS, Tuberculosis and Malaria

The Global Fund was created to finance a dramatic turn-around in the fight against AIDS, tuberculosis and malaria. The United States is the largest contributor to the Fund. AIDS, Tuberculosis and Malaria kill over 6 million people each year, and the numbers are growing. To date, the Global Fund has committed U.S.\$ 3 billion in 128 countries to support aggressive interventions against all three. By funding the work of new and existing programs, it can save millions of lives, stop the spread of disease and halt the devastation to families, communities and economies around the world. As a partnership between governments, civil society, the private sector and affected communities, the Global Fund represents an innovative approach to international health financing. The Global Fund is a results-based grant making body to which stakeholders from developing countries submit program proposals in a competitive, peer-reviewed process. The submission process was designed from the start to be inclusive of community and faith-based organizations, as well as representatives from governments.

2.1c Reducing HIV/AIDS Among Women and Girls

Protecting women and girls from HIV/AIDS is a U.S. Government priority. By using a variety of strategies in over 100 countries, the United States is helping women and girls build lives free from the shadow of HIV/AIDS.

Women and girls disproportionately bear the burden of HIV/AIDS, especially in the hardest-hit countries. In sub-Saharan Africa, they account for about 57 percent of infections, and in some of the worst affected countries in Southern Africa as many as 20 percent of girls between the ages of 15 and 19 are infected, compared with 5 percent of boys the same age. In addition, in most developing nations the infection rate of women is growing at a faster pace than that of men.

Women and girls also bear the brunt of the impact of the epidemic. Women are primary caretakers in families and communities, charged with caring for the sick and for children orphaned by the disease. They are especially likely to lose jobs, income, and schooling in order to fulfill family and community obligations.

Furthermore, women are major contributors to the agricultural workforce and other forms of household income generation, feeding their families and earning a meager family income. When women's health deteriorates, or when they must provide care to other family and community members, basic community needs such as food security come under threat.

2.2 Early Warning Systems: the Importance of Surveillance

2.2a Infectious Disease

Stimulated in part by the AIDS pandemic, national and international groups, including the National Science and Technology Council in 1995 and the Group of Eight in 1997, have called for the establishment of a global early warning system for infectious diseases. There are two components to such a system: surveillance and outbreak response. U.S. agencies are working with international partners to help develop a global early warning system. Despite advances in public health telecommunications, however, the implementation of this goal has not been straightforward. Notable progress has been made at the regional level, with the establishment of such international programs as the Caribbean Epidemiology Center's disease surveillance network, the Amazon and Southern Cone networks in South America, the Integrated Disease Surveillance and Epidemic Preparedness and Response Project in Africa, the Mekong Basin Disease Surveillance system in

Southeast Asia, and the International Circumpolar Surveillance system in Alaska, Canada, Greenland, and the circumpolar regions of Europe.

These and other fledgling networks represent pioneering attempts to work across borders to enhance detection and control of outbreaks of known diseases while maintaining the flexibility to recognize new disease problems. The networks are testing many different approaches (e.g., symptom reports surveillance, laboratory-confirmed disease-specific surveillance, hospital-based surveillance, and district-level surveillance), depending on local needs, cultural preferences, and human and technological resources.

In the years ahead, regional disease surveillance networks will grow in number and geographical scope. In the long run, regional and disease-specific networks should expand, interact, and evolve into a global “network of networks” that helps ensure early warning of new and reemerging threats and increased capacity to monitor the effectiveness of public health control measures. Some of the networks actively developed by the Department of Health and Human Services include:

The North American Surveillance Initiative

Under the North American Surveillance Initiative, The Department of Health and Human Services (HHS) has proposed to enhance infectious disease surveillance capabilities within North America by creating public health emergency preparedness systems that are interoperable along and across the U.S.-Mexico and the U.S.-Canada borders, respectively. Because pathogens know no boundaries and international travelers can spread a contagious disease quickly to other nations, early warning surveillance and prompt sharing of findings of concern among the U.S. States, Mexican States, and Canadian Provinces along the border and beyond is a public health and national security imperative. The program focuses on early detection, accurate identification, and prompt reporting of infectious disease outbreaks associated with potential bio-terrorism agents or other major threats to public health. The areas of primary emphasis include training epidemiologists, skilled laboratory staff and clinicians, and information technology specialists and upgrading laboratories and associated information systems.

The Office of Public Health Emergency Preparedness (OPHEP) within HHS has awarded \$5.4 million to the U.S.-Mexico Border Health Commission to enhance early warning capabilities to identify both naturally occurring infectious diseases and potential bio-terrorism. The money was used for programs in six Mexican Border States and by the Ministry of Health of Mexico to aid existing efforts by the Mexican government and help create early warning infectious disease surveillance systems compatible among the four U.S. States and six Mexican States that share the border. The program, implemented over a three-year period, is intended to focus on early detection, identification and reporting of infectious diseases associated with both potential bio-terrorism agents and other major threats to public health. The Commission distributes the funds as determined jointly with HHS and the Ministry of Health of Mexico. The funds go toward disease detection and reporting, epidemiological investigations and information technology, as well as education and training activities needed to develop an early warning infectious disease surveillance system. HHS previously provided supplemental funds to enhance bi-national early warning infectious disease surveillance programs to the U.S. States bordering Mexico.

In addition to our new initiative working through the U.S.-Mexico Border Health Commission to strengthen collaborations between the U.S. and Mexico, senior officials of HHS and Health Canada have initiated discussions about expanding

current bi-lateral activities to include a focus on developing across inter-operable border crossing public health emergency preparedness systems.

Central Asia Program

The Defense Threat Reduction Agency's (DTRA) Threat Agent Detection and Response (TADR) program has requested HHS assistance to create better integrated, secure, and sustainable disease surveillance systems in Central Asia that will lead to:

- 1) Early detection of infectious diseases and reporting of intentional or naturally occurring threats.
- 2) Robust, standardized information technology and data analysis tools that allow seamless information management and exchange.
- 3) Modern, standardized, validated and reliable laboratory diagnostics methods et cetera.

HHS has identified priority activities that could demonstrate significant incremental contributions public health experts could make to achieve the overall program goals and objectives. Two workshops including HHS experts have been held in Central Asia, and plans are being made for HHS employees to be based on site to provide guidance and oversight to programs that will strengthen early detection, reporting and response capabilities. In the future HHS plans to expand the initiative to the Middle East, South Asia and Latin America to expand existing activities.

Regional Emerging Diseases Intervention (REDI) Center

The recognition that what affects the public health of one-country effects the health of the entire world has driven the HHS efforts to develop new systems to monitor and respond to emerging infectious diseases. One of the most important of these new systems is the joint United States-Singapore Regional Emerging Diseases Intervention (REDI) Center. On October 17, 2003 a Memorandum of Understanding (MOU) to establish a joint facility in Singapore known as the REDI Center was signed. The REDI Center opened on May 24, 2004.

New or re-emerging diseases are becoming an annual occurrence in Asia, and require a coordinated regional response to control and prevent them. The REDI Center allows the U.S. and Singapore to assist Asian countries in tracking, controlling, and researching emerging infections to minimize the effects of disease. The REDI Center focuses on naturally occurring emerging diseases, such as Severe Acute Respiratory Syndrome (SARS) and Highly Pathogenic Avian Influenza (HPAI), as well as health security threats, including bio-terrorism concerns. Thus the REDI center widens the international network for research on emerging infectious diseases, and translates the findings of research into improved public health.

The REDI Center's efforts feed into the existing surveillance efforts coordinated by the WHO and build upon the Initiative on Strengthening Health Security announced at APEC in 2003. The Center also provides a base for training of public health officials, researchers, clinicians, and others health professionals whose emphasis will be on surveillance and rapid response to emerging infectious diseases and health security threats, as well as clinical research, laboratory techniques and safety, and regulatory practices, and who will act as a catalyst for regional collaboration on research related to infectious diseases of particular relevance to the Asia-Pacific region like SARS, influenza, dengue, West Nile Virus, et cetera.

The Center serves as a place to develop new vaccines, drugs, and diagnostic tests that will allow governments to detect, treat, and prevent these new threats. Singapore will be a resource for economies in the Asia-Pacific region as new

health threats occur. This includes health threats that could be used by bioterrorists. The first research will include work on SARS-specific vaccines and collaboration on pandemic influenza surveillance in anticipation of future outbreaks. Rather than allow these diseases to further disrupt any of the economies in the Asia-Pacific region, the center will provide a means to fight them before they become an issue. In addition to the United States and Singapore, the REDI Center will be open to participation by other Asia-Pacific economies

2.2a1 Influenza

Many experts regard pandemic influenza as the most significant global public health emergency caused by a naturally occurring pathogen. The recent medical literature includes some speculation that the present situation could resemble that before the 1918 pandemic. Similarities between the H5N1 strain of highly pathogenic avian influenza A (hereafter referred to simply as H5N1) and the 1918 virus include the gradual adaptation of an avian to a human-like virus, the severity of disease, its concentration in the young and healthy, and the occurrence of primary viral pneumonia (which cannot be treated) in addition to secondary bacterial pneumonia (which responds to antibiotics). Influenza viruses might lose pathogenicity when they acquire the improved transmissibility needed to ignite a pandemic; comparisons with the 1918 pandemic should be made with caution. More relevant to preparedness planning is that no virus of the H5 subtype has probably ever circulated among humans, and certainly not within the lifetime of today's world population; population vulnerability to an H5N1-like pandemic virus could well be universal.

While no one can predict the timing of influenza pandemics, rapid international spread is certain once a virus with the appropriate characteristics appears. Historically, pandemics have traveled along sea-lanes, with global spread completed within six to eight months. As demonstrated by SARS, spread along the routes of international air travel could shorten this time considerably. The speed of international spread has no direct effect on mortality, but could compromise response capacity should large parts of the world experience almost simultaneous outbreaks. Many of the public health interventions that successfully contained SARS will not be effective against a disease that is far more contagious, has a very short incubation period, and which a symptomatic carriers can transmit.

Currently, H5N1 has caused 69 human cases, 46 fatal. Viewed together, these cases have two striking features: the overwhelming concentration of cases in previously healthy children and young adults, and the very high mortality. No explanation for this unusual disease pattern is presently available, nor is it possible to calculate a reliable case fatality rate, as mildly symptomatic disease could be occurring in the community, yet escaping detection.

Evidence indicates that H5N1 is now endemic in parts of Asia, having established a permanent ecological niche in poultry. The risk of further human cases will continue for some time, as will opportunities for a pandemic virus to emerge. Studies comparing virus samples over time show that H5N1 has become progressively more pathogenic for mammals, and is now hardier than in the past, as it survives several days longer in the environment. Evidence further suggests that H5N1 is expanding its mammalian host range.

Changes in the ecology of the disease and behavior of the virus have created multiple opportunities for a virus with pandemic potential to emerge. Such a virus can emerge following a reassortment event, when genetic material is exchanged between human and avian viruses during co-infection of a human or pig, or through a more gradual process of adaptive mutation. No one knows whether the present window of opportunity to intensify preparedness will remain open, possibly for several years, or close abruptly. Experts readily agree, however, that H5N1 has demonstrated considerable pandemic potential. With the virus now endemic, the probability of a pandemic has increased.

Because the ongoing poultry and human outbreaks in Asia caused by highly pathogenic avian influenza A (H5N1) virus pose a significant and on-going threat for the foreseeable future, the United States, working with affected countries, has developed systems for surveillance of and response to this disease. In doing so it was discovered that the ability to rapidly identify avian and swine influenza viruses with pandemic potential must be improved. There are currently conspicuous geographic gaps in human and animal influenza surveillance; these include:

- 1) Critical gaps in information, laboratory and epidemiological training and technology transfer for rapid identification and analysis of avian and swine influenza viruses in many affected countries; and
- 2) Longstanding obstacles and gaps in the sharing of information, resources and specimens between agriculture and human health authorities.

HHS has developed an Asian surveillance initiative that forms an integrated part of a global early-warning surveillance network that will be expanded to other regions in future years if additional funding is available.

The approach to building capacity in Asia is multi-faceted and enhances the existing World Health Organization (WHO) Global Influenza Programs as well as establishing influenza surveillance in areas that currently lack such programs through providing training, direct assistance, supplies, reagents and technical assistance to Ministries of Health and non-governmental organizations (NGOs).

In September 2004, CDC provided bilateral support for the development of in-country respiratory disease surveillance networks by awarding cooperative agreements to Ministries of Health of nine countries in Asia (China, India, Indonesia, Malaysia, Mongolia, Pakistan, Philippines, South Korea and Thailand). These cooperative agreements fill critical gaps in the WHO Global Influenza Network and build on the system now in place for monitoring vaccine strains and detecting novel viruses with pandemic potential.

The U.S. has also provided two cooperative agreements to reach countries not currently participating in influenza surveillance through two cooperative agreements. One agreement is with WHO Headquarters (HQ) in Geneva and the other with the WHO Western Pacific Regional Office (WPRO) in Manila.

The two WHO Cooperative Agreements concentrate on (1) strengthening international influenza surveillance; (2) strengthening national and global pandemic preparedness; and (3) strengthening animal influenza surveillance and development of the global animal influenza surveillance network. In addition, the CDC is providing funding for a meeting to review and revise the Global Influenza Action Plan. Through these cooperative agreements the

U.S. works closely with WHO and its Regional and Country Offices to provide technical assistance and conduct country assessments in Asia, to develop guidelines for pandemic preparedness and laboratory diagnosis of influenza, to conduct epidemiological training, to develop the global agenda for influenza to guide national priorities and research, to assist with outbreak investigations and to promote collaboration between the agriculture and human health authorities.

In addition, an enhancement of the HHS International Emerging Infections Programs in Thailand is underway to develop ready access to populations to conduct antibody status surveillance for avian influenza viruses, case-control studies to determine risk factors for infection and other studies to better understand the burden of disease and avian influenza viruses. (\$400,000)

2.2a2 Emerging and Reemerging Infectious Diseases and Antimicrobial Resistance

Epidemics are by definition erratic, unpredictable and contagious. WHO and the U.S. Centers for Disease Control and Prevention, along with many research institutions and health departments, cooperate to report and verify outbreaks of disease, issue warnings and give prevention and treatment recommendations. Surveillance systems that have a developed and agreed upon approach to reporting disease patterns and outbreaks of disease are essential. Health care workers especially benefit from disease warnings as they are always at great risk.

Experience with severe respiratory syndrome (SARS) has demonstrated that illness and deaths across the world can hit home in a matter of days or even hours. SARS started in Southern China in November 2002 and by July 2003, worldwide a total of 8,098 people had SARS and 774 died. In the United States eight people fell ill with SARS and traveled from places where SARS was present. The spread was contained and world wide, information was shared about effective treatments. With the identification of SARS as caused by a corona virus, work began to create an effective vaccine.

Since 2002, illness and deaths from a number of hemorrhagic fevers, including the Marburg virus, Ebola Hemorrhagic Fever and Rift Valley Fever have been reported and followed. In 1999, West Nile virus appeared in the United States and in 2004, the United States was hit by more than 860 cases and 20 deaths in Arizona and California alone.

Unlike previous decades, clinicians today have more ways to diagnose and treat new and old infectious agents as they emerge. New technologies are being developed, including new tools to detect and identify known and novel pathogens and to develop new drugs and vaccines. Scores of vaccines are now in development for HIV, Ebola, West Nile virus and the corona virus that causes SARS. The first new tuberculosis vaccines in 60 years are now in clinical studies and vaccines against the pathogens most likely to be used by terrorists are in development. Environmental factors that lead to disease outbreaks, including water and changes in climate are being monitored. In fighting infectious diseases, public health measures must be coordinated with biomedical research to keep pace with the changes that occur in pathogens.

Tuberculosis

Tuberculosis is increasing in some parts of the world, particularly in Africa. Tuberculosis has reemerged along the U.S. –Mexico border. Furthermore, not only Mexicans cross that border, but also Central and South Americans

and others who are migrating to the United States through Mexico. One third of the estimated 40 million people living with HIV/AIDS are also infected with tuberculosis. Consequently there has been an upsurge in cases of tuberculosis with an estimated two million people infected each year.

Each disease makes the other worse and it is essential that they both be addressed in an individual. Care has to be taken that the funds for treatment of one disease does not compete with money for the other. The situation is made more complex by the development of drug-resistant tuberculosis. The development of directly observed tuberculosis strategy, known as DOTS, has made effective treatment possible. The DOTS program includes case finding, diagnosis and administration of short-course chemotherapy under direct observation, that is, not self administered, but usually at a treatment center, assuring a reliable supply of drugs. Despite the fact that effective drugs are available, treating TB demands a continuous pattern of treatment.

It is often difficult to find cases as many people know they are having respiratory illness, but do not understand they have tuberculosis. At U.S. border and entry points, significant multi-national efforts are needed for control of tuberculosis.

Malaria

Malaria has reached epidemic proportions in some parts of the world. It is estimated that malaria kills more than one million people each year making it the world's third most deadly infectious disease after AIDS and tuberculosis. The number of malaria cases in Africa has increased and the disease remains endemic in Southeast Asia and the Americas. Increasingly people are being accurately diagnosed and treatments are available, but recently there has been an emergence of malaria that is multi-drug resistant (MDR). Chloroquine, a drug long used to treat malaria is now often ineffective. An artemisinin-based treatment is being used to treat drug-resistant malaria in Southeast Asia. Artemisinin is a compound derived from wormwood.

International organizations are working with agricultural programs to encourage farmers to cultivate more artemisinin-based drugs with the hopes of tripling the drug availability by 2005.

At the same time, new drugs and several malaria vaccines are in development and are being evaluated in studies by U.S. scientists and long-term research collaborators in Africa, Asia, and South America.

2.2b Bioterrorism and Global Security

Since September 11, 2001, a major priority of the governments around the world has been to protect their people from deliberate attack on their health and safety. In October 2001, the U.S. and its partners developed the Global Health Security Initiative (GHSI). The purpose of this initiative is to improve health security worldwide by increasing preparation for biological, chemical or radiological terrorism and other public health crises, such as pandemic influenza. At its first meeting in Ottawa GHSI was codified through a formal agreement among eight countries (Canada, France, Germany, Italy, Japan, Mexico, the United Kingdom and the United States) and the European Commission. The WHO acts as an external resource. GHSI is an action-oriented group that develops programs urgently needed to improve our preparedness for biological, chemical or nuclear attacks, and public health emergencies.

Realizing that economies can be disrupted by terrorist events, in November 2001, Ministers of Health from the Organization for Economic Cooperation and Development and other countries met to discuss collaborations to protect populations from the impact of bio-terrorism.

For nearly 30 years, HHS scientists have been involved in cooperative biomedical research with the former Soviet Union (and now Russia and Northern Eurasia) on polio, influenza, diphtheria, radiation health effects, and more recently, tuberculosis, and other dangerous pathogens such as West Nile encephalitis. At the request of U.S. Departments of State and the Department of Defense (DOD), HHS has developed a State Department funded Biotechnology Engagement Program (BTEP) to "engage" Russian and Northern Eurasian former biologic weapons scientists in collaborative research on high-priority public health problems. Biologic agents, in the hands of terrorists are a mounting concern for public health agencies at federal, state and local level. HHS views this as a public health problem (not only military) and provides leadership for this program.

For this multi-year program initiative, HHS has expanded on existing cooperation and developed targeted new collaborative research projects with Russian and other Northern Eurasian scientific institutes. The Assistant Secretary for Health has established a Biotechnology Engagement Program (BTEP) Advisory Group (USG interagency experts). The HHS BTEP supports broad U.S. policy goals of integrating Northern Eurasian scientists into the international community; reducing the risk of proliferation of weapons of mass destruction expertise; increasing transparency at former Soviet biological weapons (BW) research sites; and redirecting bio-technology expertise to peaceful research in areas of urgent public health needs in Russia and Northern Eurasia.

2.3 Global Vaccine Initiatives

2.3a The Eradication of Smallpox

One of the twentieth century's greatest victories in medicine began in 1796. That year Edward Jenner discovered vaccination. It was known that if a person had smallpox and survived, he or she would not get the disease again. Sometimes people tried to inoculate themselves against smallpox by purposefully contracting a mild case. But Jenner found that if he gave a person serum from a cow (vacca in Latin) that had cowpox, a virus similar to smallpox, then that person was protected from smallpox without having to be exposed to the disease itself. Jenner immediately envisioned the vaccine erasing smallpox from the earth. But it would take another 184 years.

On 8 May 1980, the Thirty-third World Health Assembly declared that smallpox had been eradicated globally. For the first time in history, mankind had vanquished a disease. This declaration reawakened interest in disease eradication as a public health strategy. Within a month, the Fogarty International Center convened a two-day meeting, the first of many, to explore the question of what diseases should be eradicated next. This was the first of a series of conferences of which the present one is the latest. At that first meeting, the list of diseases and conditions nominated ranged from urban rabies to periodontal disease to leprosy.

With expansion of the immunization program in mind, WHO organized, in 1970, an international meeting to review the status of vaccination internationally and to recommend model programmes. Recommended for general use in the developing countries were smallpox, BCG, DPT, measles and typhoid vaccines. Yellow fever and poliovirus vaccines were recommended for use but only under special circumstances. At that time, poliovirus vaccine was not generally recommended

because of uncertainty as to how serious a problem poliomyelitis really was for most developing countries and because of doubts as to how efficacious poliovirus vaccine would prove to be in tropical areas. In 1974, the World Health Assembly approved this expanded program of immunization; in 1977, programme leadership was strengthened and the programme began to grow. By then, typhoid vaccine had been dropped from the recommended list and poliovirus vaccine was added.

From the eradication of smallpox from 31 endemic countries to the implementation of effective immunization programmes for six diseases in more than 100 countries represents an enormous increase in programme complexity. Nevertheless, remarkable progress has been made in expanding and intensifying immunization activities throughout the world. In 1990 the World Summit for Children stressed the goal of vaccinating 80% of the world's children against six major diseases. This goal was again noted in the 2002 U.N. Special Session on Children "A World Fit for Children."

2.3b Polio

In 1988, the World Health Assembly (WHA) the annual meeting of the ministers of health of all Member States of the World Health Organization, voted to launch a global goal to eradicate polio. As a result of the Global Polio Eradication Initiative - the largest public health effort to date – much progress has been made against this disease. From 1988 to 2003, the number of countries in which polio is endemic declined from 125 to six. However, in 2004, polio cases caused by wild poliovirus (WPV) originating from northern Nigeria were reported in 11 countries--Benin, Botswana, Cameroon, Guinea, Mali, Saudi Arabia, Burkina Faso, Central African Republic, Chad, Cote d'Ivoire, and Sudan--reestablishing transmission in the latter five countries.

The Global Polio Eradication Initiative (GPEI), spearheaded by national governments, the World Health Organization (WHO), Rotary International, the US Centers for Disease Control and Prevention (CDC) and UNICEF, is the largest public health initiative the world has ever known. Since 1988, some two billion children around the world have been immunized against polio thanks to the unprecedented cooperation of more than 200 countries and 20 million volunteers, backed by an international investment of US\$ 3 billion.

The eradication of Polio is of particular importance to the United States, which has played a key role through the G-8 leadership process to garner global support for polio eradication, and has provided significant and long-term financial support and technical expert assistance of the Department of Health and Human Services (HHS) and the U.S. Agency for International Development (USAID). The U.S. has provided over 30% of the initiative's \$3 billion in external financing since 1988.

2.3c Measles

Measles causes approximately 800,000 deaths each year and is the largest single cause of child vaccine-preventable deaths. It is the fifth leading cause of death worldwide among children aged <5 years and causes more deaths in this age group than either HIV/AIDS or TB.

Since 1997, all confirmed measles cases in the United States (totaling 540 cases) have been the result of documented or presumed importations from measles-endemic countries. Improved global measles control is necessary to protect the U.S. against importations.

Experience in the Americas, southern Africa, and selected countries around the world shows that full implementation of current measles control strategies results in near-zero measles deaths. Measles vaccine is safe, effective, and cheap (\$0.30 per dose including needle, syringe, and disposal).

The remaining global measles disease burden is largely due to lack of political will and financial support for childhood immunizations. Measles is the most visible vaccine-preventable disease among children worldwide and renewed global efforts to control measles provide the opportunity to strengthen national immunization programs and disease surveillance systems in general.

A World Health Assembly Resolution (WHA56.20) supporting measles mortality reduction and regional elimination including the goal of reducing measles deaths by 50% by 2005 (compared with 1999 levels) increased country-level political and financial support in the fight against measles. The United Nations General Assembly on Children in 2002 endorsed this goal.

Global measles mortality reduction activities are focused in 45 priority countries, mostly the African, Southeast Asian and Western Pacific regions where 95 percent of global measles deaths occur.

Some indicators of progress include:

- 1) In the Americas, no case of indigenous measles has been reported since November 2002.
- 2) Between 1999 and 2003, nearly 144 million children were vaccinated against measles in the African region, averting nearly 267,000 deaths. The Africa region should meet its 50 percent mortality reduction goal by the end of 2004, a full year ahead of schedule.
- 3) The Western Pacific Region recently adopted a goal of measles elimination, with a target date to be determined through discussion and through the assessments of progress annually.

The reporting and investigation of measles outbreaks has increased. International and inter-regional importations of measles virus have been detected and interventions undertaken in places such as Burkina Faso, Niger, Mexico and the Marshall Islands. Efforts are being made to strengthen measles surveillance to improve and strengthen routine immunization systems and to promote the integration of measles mortality reduction into other health activities. For example, some countries included Vitamin A supplementation, anti-helminthics (*mebendazole*) and insecticide-treated bed net distribution, and yellow fever vaccinations as part of nation-wide measles campaigns. Preliminary results from these efforts in Ghana and Zambia are encouraging.

In 2003, the Centers for Disease Control and Prevention within the U.S. Department of Health and Human Services (CDC/HHS) provided US\$42 million for vaccine for outbreak control and other supplementary immunization activities, surveillance (including laboratory and data management), and short- and long-term assignments of CDC/HHS staff to priority countries. CDC/HHS works in partnership with the WHO, the United Nations (UN) Children's Fund, the UN Foundation, the American Red Cross, individual Ministries of Health and others, especially in Africa through the Measles Initiative. In 2003 alone, CDC/HHS supported the immunization of nearly 80 million children in Africa through the Measles Initiative, which averted over 167,000 deaths.

CDC/HHS also provides technical assistance and financial support in areas of special need where measles mortality reduction is the primary goal. In campaigns conducted in Afghanistan, and Sudan, 7.2 million children missed in earlier campaigns were vaccinated. In Ethiopia and Niger, CDC/HHS helped study the best methods of estimating deaths from measles infection within affected populations. Preliminary results from the Niger study indicate that nearly 10 percent of children with measles die from the disease - a figure higher than previously estimated.

The U.S. Agency for International Development (USAID) has also been a major supporter of the global effort to reduce measles mortality. In 2002, USAID immunized 4.26 million children in Afghanistan for measles preventing an estimated 20,000 deaths. USAID is also a major measles partner of PAHO in the Americas, supporting supplemental measles activities throughout the region in order to ensure a long term reduction in measles deaths. USAID supports the Cape Town Measles Declaration of 17 October 2003 and in conjunction with that declaration has provided long term support to ensure the first opportunity for measles immunization through the routine immunization services in approximately 40 countries worldwide. USAID also worked closely with WHO and UNICEF to formulate the Global Strategic Plan for Measles Mortality Reduction and Regional Elimination, 2001-2005. USAID has provided technical and financial support to all elements of this plan. USAID maintains close technical involvement with the Partners of the Measles Initiative and has been actively involved in strategic and operational planning for achieving the measles mortality reduction goals at country, regional and global levels.

2.3d Rotavirus

[BILL – NOT CLEAR ON THE EXAMPLE YOU WANTED INCLUDED. PLEASE REVIEW AND LET US KNOW. THANKS.]Rotavirus is a highly contagious disease that affects 130 million infants and children worldwide by age 2. It occurs in both developed and developing countries. The virus causes diarrhea and vomiting resulting dehydration and frequently, death. In the United States alone, rotavirus causes more than 3 million cases of childhood diarrhea each year, leading to 55,000 to 100,000 hospitalizations and 20-100 deaths. Widespread rotavirus vaccination could save \$500 million in health care costs in the United States and worldwide could reduce deaths by 30 percent saving as many as 1 million children each year.

Studies have shown that the first infection with rotavirus in a child confers some immunity leading to the promise of effective vaccines. Vaccine development for rotavirus has been largely international. Vaccine development has focused on the four most prevalent strains of rotavirus. The U.S. Food and Drug Administration approved an oral vaccine in August 1998 and withdrew approval in 1999 due to unintended effects. In January 2005 a British pharmaceutical company introduced a rotavirus vaccine in Mexico. Another vaccine had been developed and licensed in China, but needs more testing. Other vaccines using different strategies are in development across the world.

2.4 International Family Issues

The welfare and stability of a nation is directly related to the state of its families and the health of women is tightly connected to the health of children. Not only is the status of a family or of its individual members shaped by cultures and religions within their countries, but also increasingly the definition of a family is moving to definitions that extend beyond legal bonds and new definitions that acknowledge emotional bonds. The strength of an extended family can often help a family under stress, but the relatives may be under stresses themselves. Shared and unique problems face the men, women and children

who comprise family groups. The family today is subject to many destructive forces including lack of education, lack of employment and poverty. The prerequisites of the health of a family including housing, sanitation, clean water, and enough healthy food are too often missing. In many regions of the world men have to leave their families to seek work causing severe strain. This is seen in the United States as well, as many people migrate here to be able to send money back to their homes. International crises of many sorts often separate family members and this is especially true when they become refugees.

2.4a Maternal and Child Health

The WHO theme for 2005 is "Make Every Mother and Child Count." Experts have recognized that the welfare of women is central to a strong family unit. Comprehensive care that is dedicated to keep family units intact is difficult to find in some parts of the world. Disparities in the status of women can limit their educational and occupational opportunities.

Complications during pregnancy and birth claim the lives of more than half a million women each year. Ninety-eight percent of these deaths occur in developing countries. Maternal morbidity and mortality affect not only women. They severely impact families, the lives of young children, and society in general, contributing significantly to chronic underdevelopment in such regions as sub-Saharan Africa and South Asia.

Approximately 15 percent of pregnancies involve potentially life-threatening complications such as postpartum hemorrhage, infection, obstructed labor, and complications of unsafe abortions. Serious long-term effects and death can be averted if women have access to skilled birth attendants, and timely and appropriate obstetric care.

That is why USAID focuses its maternal mortality prevention strategies on strengthening the capacity of hospitals and health centers to provide basic, essential obstetric care. This approach has proven successful in reducing maternal mortality in a number of USAID-assisted countries. In Egypt, for example, maternal mortality has declined by 52 percent since the late 1980s. Maternal mortality rates have decreased by 41 percent in Honduras and by 30 percent in Guatemala.

Most countries in Sub-Saharan Africa, however, have had little or no reduction in the problem in the last decade, and recent demographic and health surveys indicate that maternal deaths have increased in Zimbabwe and Malawi. To help combat this problem, USAID is developing new programs targeted at positive birth outcomes and improving maternal health for the region.

2.4a1 Preventing Maternal to Child Transmission of HIV

Many women are isolated while pregnant and go without prenatal care. They may be ill with HIV/AIDS, tuberculosis or other serious illnesses. Malaria poses a special threat to pregnant women and children. Various international programs have sought to improve the health of men and women by educating them about the risks of sexually transmitted diseases and HIV/AIDS and by doing so, protect the family unit for its children. Two new antimicrobial salves that a woman can administer to herself to protect against HIV/AIDS are now near final development. Ideally, both mothers and fathers are treated for HIV/AIDS with a special emphasis on reducing maternal transmission of HIV/AIDS at the point of the delivery of a child. A total approach is needed; diagnosis and treatment for woman, supportive

treatment during pregnancy and treatment to reduce maternal transmission of HIV/AIDS to the child. Then both mother and child will continue to need care. The United States has made reduction of maternal transmission of AIDS a priority.

As President Bush said when he launched the U.S. International Mother to Child HIV Transmission Prevention Initiative in 2002, "One of our best opportunities for progress against AIDS lies in preventing mothers from passing on the HIV virus to their children. Worldwide, close to 2,000 babies are infected with HIV every day, during pregnancy, birth, or through breastfeeding. Most of those infected will die before their fifth birthday."

This initiative, now integrated within the President's Emergency Plan for AIDS Relief, seeks to increase the availability of HIV preventive care, including short-term anti-retroviral prophylaxis for pregnant women, and improve access to basic health counseling and services to as many pregnant women as possible. To date, the U.S. Government had appropriated over \$288 million to mother-to-child transmission programs.

By March 2004, 14,700 health workers had been trained to provide the program's services, and 900 facilities had received financial and technical support enhancing their provision of services to pregnant women. Such services include HIV counseling and testing, short course antiretroviral treatment during delivery and early infancy, and support for safe infant feeding practices, and family-planning counseling and referral.

In each of the host countries, a Ministry of Health or equivalent governmental structure, local non-governmental organizations (NGOs), including faith-based organizations, and international agencies partner with U.S. agencies such as the Office of the Global AIDS Coordinator in the State Department, USAID, and HHS to implement these services and ensure they adhere to a set of agreed-upon standards for implementation. Communities also play a vital role in the implementation of these preventative programs. For example, in Rwanda the U.S. provides funds to community organizations that reach out to pregnant women to increase awareness and acceptance of practices and programs to prevent transmission of HIV to newborns.

In some countries children are orphaned or abandoned where HIV/AIDS causes the deaths of their parents. Where these protective programs fail we see that children, who may or may not be ill with HIV/AIDS themselves, are often orphaned or abandoned. Children raising children is one of the saddest stories of our time. This will be a continuing tragedy in the future ruining lives and destabilizing nations.

Tuberculosis is a leading cause of death among women of reproductive age and is estimated to cause more deaths than all other causes of maternal mortality. Malaria is another very prevalent disease and malaria parasites can accumulate in the placenta and cause the death of mother and child.

2.4a2 Preventing Infant Mortality

Neonatal deaths account for 36% of deaths worldwide in children under age five. Of the 130 million infants born each year, four million die. Childhood is often precarious, but the first day of life is the most dangerous day of all. Many children die that day or in the first four weeks of life. Others die before being born or are still born. Furthermore, many children across the world die unacknowledged and uncounted. In some countries, babies are not named

until at least one to six weeks have passed, a practice that acknowledges the high mortality rate and a certain sense of fatalism. Experts say that as many as half could have been saved if their mothers had received low-cost care such as tetanus immunization during pregnancy, breastfeeding where possible, and antibiotics to treat illnesses such as pneumonia. Clean deliveries, skilled birth attendants and the use of a sterile knife to cut the umbilical cord could save countless lives.

2.4b Nutrition

Women's nutrition and survival often is a neglected focus of development programs. Improving women's nutrition is critical because in many countries, women are income earners, food producers and family caretakers. Therefore there are enormous social, economic, health and development benefits of good female nutrition. Furthermore, women's health and nutrition before, during and after pregnancy has an impact on child survival and development.

Nutrition is an important element in a family's health status. Clean water and nourishing food can never be taken for granted. Globally micronutrient deficiencies are common health risks. Vitamin A deficiency is a leading cause of preventable blindness in children and a source of increased risk of disease and death from severe infections. In pregnant women, particularly in the third trimester, vitamin A deficiency can cause night blindness and may increase the risk of maternal mortality. Vitamin A deficiency is also associated with elevated mother-to-child HIV transmission. In children, a lack of vitamin A causes severe visual impairment and blindness, and significantly increases the risk of illness, and even death, from such common childhood infections such as measles. A few low cost pills a year can correct vitamin A deficiency. There are various efforts around the world to examine ways to fortify foods with vitamins. Guatemala is fortifying its sugar with vitamin A.

Optimally, folic acid, the synthetic form of folate, should be taken by women ages 15 to 45 well before they are pregnant. Folate deficiency can result babies born with severe birth defects every year. The US FDA requires that folic acid be added to specific flour, breads and gains. Iodine deficiency results in 20 million babies a year born mentally impaired.

Nearly a decade of collaboration between the U.S. Centers for Disease Control and Prevention (CDC) and the Chinese Ministry of Health (MOH) on the control of spina bifida offers a model for collaboration. Spina bifida is a devastating defect of the central nervous system. Folic acid deficiency during early pregnancy, when the nervous system is forming, is one of the identified causes of spina bifida, and the community intervention program conducted by the MOH in collaboration with CDC demonstrated that an inexpensive nutritional supplement taken before and during early pregnancy could reduce the occurrence of spina bifida (and anencephaly, a more severe form of the defect) by 85 percent in the northern part of China (around Beijing), where the defect is about 10 times more common than it is in the south around Shanghai.

The US added iodine to salt in 1924 with great beneficial effect. Iron deficiency in the 6 to 24 month age group impairs the mental development of 40% to 60% of the developing world's children, while iron deficiency in adults is so widespread that it is depleting energy and reducing productivity in many poorer countries.

USAID funds many projects that address nutritional needs in the developing world. In May 2004, USAID made a \$2.5 million contribution to the Global Alliance for Improved Nutrition (GAIN), a non-profit organization that targets nutritional needs in the developing world. The USAID contribution funds the addition of vitamins and

minerals to common staples such as wheat flour, sugar and cooking oil. The process, known as food fortification, has been used in industrialized nations for more than 80 years. Increased intake of vitamins and minerals can reduce the severity of infectious diseases, such as malaria, measles and diarrhea. It also reduces illnesses and complications during pregnancy and fosters positive birth outcomes.

An example of our effort to ensure children in impoverished nations are fed nutritious meals at school is the McGovern-Dole International Food for Education and Child Nutrition Program. Many of these children are girls who might not otherwise be in school. The Bush administration has requested \$75 million for the program in 2005, which helps nourish both the bodies and the minds of many of the poorest children.

2.4c Trafficking in Humans

The United States commitment to improving the status of women has been expressed in \$295 million being provided since 2002 to support anti-trafficking efforts in over 120 countries, that sum is in addition to \$50 million given for that purpose in 2003. Trafficking of women and girls is becoming a worldwide lucrative business. Girls and women from the poorest countries are most likely to be abused. Apart from psychological damage and humiliation most of the women are at high risk for sexually transmitted infections, HIV, and unwanted pregnancies. Rapes and beatings are common. They are usually virtually imprisoned with all rights removed. Trafficking has been identified as a contemporary form of slavery. With concern for children who have been forced into a sexual trade, Operation Predator has led to 4,300 arrests of Americans who travel abroad to engage in sex with a minor. The degrading and dangerous practice of human trafficking continues to enslave women around the world. The United States sponsored a resolution at the UN Commission on the Status of Women in March of 2005, to bring attention to this issue. The resolution passed. Sex trafficking is accompanied by a potentially lifelong and or life-threatening health consequences.

2.5 Health Diplomacy

Health is a diplomatic tool to promote good relations and improve ties between the United States and other countries. When you think about it, promoting health cooperation with other countries is always a win-win situation. Strengthening health globally will strengthen security, including our own health security. But it also improves health in our partner countries. There's no downside.

2.5a Trauma and Dislocation of Terrorist Attacks and Wars/ Refugee Health

Families are at risk in many ways. The chaos of many manmade and natural disasters results often in loss of contact between family members and often placement in different refugee settlements. The Office of the U.N. High Commissioner for Refugees has declared since 1983 that the "family is the natural and fundamental group unit of society and is entitled to protection by society and the State." Reunifications of family members who have become separated, particularly if they are unaccompanied minors, is deemed of great importance.

2.5a1 Iraq

The U.S. Government has been directly involved in the reconstruction of Iraq's health sector. President Bush, through the Secretary of Health and Human Services, directed the Office of Global Health Affairs to participate in the planning for reconstruction of the health sector in Iraq prior to the liberation of Iraq. During the liberation of Iraq, the United States readily committed HHS resources helping the Iraqis rebuilt their health care system. The Department of Health and Human Services sent some of its finest to join

the Coalition Provisional Authority's health team, which directly assisted the dedicated Iraqi doctors to reopen hospitals and clinics across the country and to plan for a future health care system to meet the needs of the Iraqi people. Five dedicated HHS health professionals served in Iraq under the CPA, including one who served as Chief Medical Officer. In February 2004, former Secretary Thompson visited Iraq, bringing with him the heads of the National Cancer Institute, the National Institute of Allergy and Infectious Diseases, and the Substance Abuse and Mental Health Administration, and the Deputy Assistant Secretary of Health. The first-hand assessment of Iraqi needs led to HHS efforts to assist in the training of pediatric cancer teams, the treatment of Iraqi child cancer patients at the King Hussein Cancer Hospital in Amman, Jordan, where the National Cancer Institute has been assisting the Jordanians; assistance in planning the Iraq Ministry of Health's program of integrating mental health in primary care settings. In addition, HHS is assisting the Ministry of Health to develop a computer-based disease surveillance system.

After sovereignty was returned to the Iraqis, HHS is providing the Health Attaché in the U.S. Embassy in Baghdad, as well as continuing the projects started during the occupation. The Health Attaché, in addition to being the principal health advisor to the U.S. Ambassador, convenes and coordinates all U.S. health interests in Iraq. To date, HHS has spent an estimated \$500,000 on developing health resources for Iraq.

2.5a2 Afghanistan

Since October 2002, HHS has been significantly involved in the reconstruction of the health sector of Afghanistan. HHS signed a Memorandum of Understanding with the Afghan Ministry of Health in October 2002, and soon afterwards, initiated at Rabia Balkhi Women's Hospital (RBH), a maternal and child health training program, in partnership with the U.S. Department of Defense (DoD). OGHA receives a \$6 million appropriation from Congress to support HHS activities in Afghanistan. With these funds, OGHA provides support to a non-governmental organization to provide training and continuing education to hospital staff, with the goal of updating the knowledge and skills of healthcare professionals and ancillary and support staff to enable the staff of this facility to eventually support a residency training program in obstetrics and gynecology. In partnership with DoD, USAID, the U.S. Embassy and other international partners, HHS also works to address a range of challenges in hospital management, which inhibit U.S. efforts to improve the quality of health care in Afghanistan. OGHA has assigned a Health Attaché to the U.S. Embassy in Kabul.

Rabia Balkhi

Maternal mortality rates in Afghanistan are among the highest in the world. According to recent statistics, 40 percent of fatalities among women occur because of preventable complications related to childbirth. Available interventions, adequate nutrition, and quality care during pregnancy, delivery and following childbirth could avert many of these deaths. In light of this dire situation, the U. S. Department of Health and Human Services (HHS), in collaboration with governmental and private partners, has developed programs to improve the health of women in Afghanistan.

HHS developed a maternal and child health training program currently aimed at physicians and other specialists working at Rabia Balkhi Women's Hospital in Kabul. Since 2003, successive teams of physicians, nurse-midwives, hospital administrators and other medical experts have rotated

through the hospital. These “faculty consultants” helped open a fully-functional pediatric nursery and an emergency room with 24-hour operational capacity, and conducted classes, lectures, workshops and teaching rounds to improve the clinical skills of the hospital staff. HHS also implemented initiatives to improve hospital management and administration, including the implementation of basic systems for infection control, inventory control, personnel, and pharmacy management. The result of these efforts has been an 80 to 90 percent decline in maternal deaths. In April 2004, that hospital celebrated a month with no maternal deaths—its first ever.

2.5a3 Tsunami

In February 2005 President Bush announced that he sought \$950 million as part of the supplemental request to support the rehabilitation and reconstruction of areas devastated by the Indian Ocean Tsunami and to cover the costs of the U.S. government's relief efforts to date. This amount is an expansion of his initial commitment of \$350 million and is based on the information available and the assessments to date.

The President expressed the United States' deep and ongoing commitment to the tsunami victims. The United States was working to help these nations before the tsunami struck, and we remain committed to helping those affected by this terrible disaster recover and rebuild.

The \$950 million tsunami supplemental will include estimated allocations for the following activities:

- 1) \$339 million for reconstruction of infrastructure, such as the construction of roads, schools, and water distribution systems;
- 2) \$168 million to help victims transition back to their communities, including food aid, shelter, housing reconstruction, education, and programs that help victims recover and get back to work;
- 3) A total of \$35 million for early warning and disaster mitigation efforts -- \$23 million to improve the international and U.S. tsunami early warning system, and \$12 million to enhance tsunami early warning and disaster mitigation in the affected countries;
- 4) \$62 million for good governance and technical assistance for planning reconstruction activities and the costs of U.S. government agency operations in the region; and
- 5) \$346 million to replenish costs incurred by the United States Agencies for International Development (USAID) and the Defense Department for provision of immediate relief.
- 6) The supplemental may fund debt deferment for tsunami-affected countries, if necessary.

To date, the United States has committed \$350 million in emergency relief assistance - which will be replenished in the supplemental to enable the United States to respond to future emergencies. This is in addition to operational costs incurred by the Department of Defense. Relief resources have been focused on emergency food assistance, provision of relief supplies, shelter, water and sanitation, health, education, cash for work, livelihoods recovery, psychological and social support, protecting women and children from human-trafficking, logistics and coordination, and debris clean-up.

When the earthquake hit, USAID immediately worked to mobilize staff to respond to the humanitarian needs in the affected countries. At the height of the relief effort, more than 150 USAID personnel, including Disaster Assistance experts, were on the ground in Indonesia, India, Sri Lanka, Thailand, the Maldives, and the Seychelles conducting assessments of affected areas, managing U.S. civilian response, participating in the overall coordination of relief and reconstruction activities, apprising funding requests, and recommending appropriate U.S. Government relief efforts.

The United States, through USAID, has funded debris clean up and other community rehabilitation projects in the relief phase benefiting more than 344,000 people through cash-for-work projects and temporary shelter for more than 165,000 people in Indonesia, Sri Lanka, and India. USAID has also funded water and sanitation activities in the emergency phase benefiting more than 885,000 people in Indonesia, Sri Lanka, India, and the Maldives. USAID provided 21,220 metric tons for the first four months of World Food Program (WFP) operations, contributing to WFP's beneficiary total of 1.4 million tsunami victims.

The Defense Department brought into action military assets to support relief operations in Thailand, Indonesia, Sri Lanka, and the Maldives. The Defense Department has been providing vital supplies and logistics to the humanitarian effort since December 30. At the height of the DOD humanitarian support activities, there were nearly 16,000 U.S. military personnel in the region focused on this effort. There were 26 ships, 58 helicopters, and 43 fixed wing aircraft. DOD delivered over 10 million pounds of food and supplies and provided well over 400,000 gallons of fresh water. To date, DOD has treated almost 2,500 patients.

Other agencies have also contributed to the effort including the State Department with diplomatic coordination, the Department of Health and Human Services by deploying technical health experts, the Department of Agriculture with food aid, and the Treasury Department through the efforts of the international financial institutions. Estimates place the generous private-sector donations towards the tsunami relief efforts at more than \$700 million.

The efforts of the United States Government and its people to help others in this horrible disaster manifested measurable diplomatic effect: The approval rating of the United States among Indonesians increased by over 25%.

2.5b Training of Medical Professional and Scientists

The professional visits of foreign scientists and engineers and the training of highly qualified foreign students are important for maintaining the vitality and quality of the U.S. research enterprise. This research, in turn, underlies national security and the health and welfare of both our economy and society. It is clearly in our national interest to help developing countries fight diseases such as AIDS, improve their agricultural production, establish new industries, and generally raise their standard of living. There is no better way to provide that help than to train young people from such countries to become broadly competent in relevant fields of science and technology.

Throughout our history, this nation has benefited enormously from an influx of foreign-born scientists and engineers whose talents and energy have driven many of our advances in scientific research and technological development. Over half a

century ago, Albert Einstein, Enrico Fermi, and many others from Western Europe laid the foundations for our global leadership in modern science. More recently, immigrants from other parts of the world -- most notably China, India, and Southeast Asia -- have joined our research institutions and are now the leaders of universities and technology-based industries. A third of U.S. winners of the Nobel Prize were born abroad. The 1999 Nobel Prizes are a case-in-point: All four of 1999's winners from the United States, in Physics, Chemistry, Physiology/Medicine, and Economics, were foreign-born scholars who came to the United States to further their research. Two have since become U.S. citizens. Many eminent scholars come to the United States and stay, others have returned to take leadership positions in their home countries, and now are among the best ambassadors that our country has abroad.

2.5c Treating the Sick

One of the great gifts we give to the people of the world is our medical expertise. The sick from all nations, walks of life, and religions can find treatment of their illnesses in the United States. What better way to develop bonds and promote understanding of American generosity than by treating the sick?

2.6 Chronic Disease

The Global Burden of Disease Study by the World Health Organization, the World Bank and Harvard School of Public Health estimated that by the year 2020, noncommunicable diseases are expected to account for seven out of every ten deaths in the developing regions as compared to less than half the deaths today. Further The WHO estimated that in 2004, non-communicable diseases accounted for about 60% of global deaths and almost half (47%) of the global burden of disease. The leading non-communicable diseases are cardiovascular diseases, cancers, respiratory disorders, digestive disorders, and neuropsychiatric disorders. Chronic diseases are not exclusive to the developed world. Rather, the developing world is increasingly burdened with both chronic and infectious disease, partly due to the rapid adaptation of behaviors and lifestyles that adversely affect health. This poses a major challenge to all nations to address these problems as well as the communicable diseases.

Cardiovascular diseases, cancers, respiratory disease, digestive disorders, and neuropsychiatric disorders and injuries have high morbidity rates and deaths across the world.

Many neuropsychiatric illnesses contribute to major disability. The World Health Organization and Harvard's study on the Global Burden of Disease found depression to be the second leading cause of disability worldwide. There is an increasing awareness that chaos in a country, rather from man made events such as wars and attacks by terrorism, or from natural disasters such as earthquakes or tsunamis, can deeply distress all involved and in significant numbers cause post traumatic stress syndrome.

Heart disease and stroke not only contribute high levels of disability, but also are the leading causes of deaths worldwide. Prevention and swift diagnosis and immediate treatment are the best methods of avoiding cardiac morbidity and mortality. Exercise, proper nutrition, and avoiding tobacco use are all effective in lower rates of cardiovascular disease.

Diabetes raises an individual's risk of many illnesses including cardiovascular diseases, vision problems, kidney disorders and poor circulation in limbs that necessitates amputation. An estimated six deaths per minute, or 3.2 million deaths per year, are attributed to diabetes or related conditions. In addition to the deaths resulting from the disease, diabetes leads to various disabilities, such as loss of limbs, which frequently carry economic consequences. (WHO, May, 2004) In 2003, the Pan American Health

Organization (PAHO) reported that expenditures associated with permanent and temporary disabilities from diabetes were over 50 billion dollars in Latin America and the Caribbean alone. These costs are in addition to those for insulin and other drugs, hospitalization, and other medical care for persons with the disease. (PAHO, 2003)

The *World Cancer Report* (Stewart and Kleihues, 2003) predicts that cancer rates are set to increase globally at an alarming rate, as much as 50% by 2020. Malignant tumors were already responsible for 6.2 million deaths internationally in 2000. Cancer has emerged as a major public health problem in developing countries, matching its effect in industrialized nations. The three leading cancer killers are lung, stomach and liver cancer. The *Cancer Report* indicated that one-third of cancer cases could be prevented through reduction of tobacco consumption, healthy lifestyle and diet, and early detection through screening.

2.7 Conclusion

Better global health demands commitment and complex strategies. All Americans need to see the benefit to be gained from improved health and stability across the globe. The results of medical research are perhaps America's best gifts to the world and this work needs to continue. But beware the simple answer. The cure of one disease, no matter how deadly, is not the answer. Vigilance, collaboration and coordination are key. Improving the health of the peoples of the world demands a steady commitment of resources, minds and souls. To that end, the participation and awareness of all Americans will help to make major advances in the health and well being of people around the globe.

3. Call to Action YET TO BE DEVELOPED