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2
3 **The Surgeon General's**

4 **Call to Action**

5 **on**

6 **Global Health**

7 **2006**

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9 **U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**

10 **Office of the Surgeon General**

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“We have an obligation to assure something more like fairness and equity in human health. We do not have a choice, unless we plan to give up being human. The idea that all men and women are brothers and sisters is not a transient cultural notion...

It is a biological imperative”

-- Lewis Thomas, The Fragile Species

“You’ve got to be healthy and stay healthy. Without your health, you don’t have anything. You can’t provide for your family, you lose your job, you lose your house. You ain’t got nothing without your health.”

– Joe H., American from Wyandotte, Michigan.

27 **Part I: Introduction**

28 **Purpose**

29
30 In 2006, the health of the world’s citizens is remarkably uneven. A child born today in Japan,
31 for example, can expect to live to 82 years of age on average, whereas a it is unlikely that a
32 newborn infant born in Zimbabwe will reach his or her 34th birthday. These disparities exist in a
33 world that is become more closely drawn together in all domains, including health. The United
34 States has a direct and growing stake in mitigating the global risks caused by such differences in
35 health. We have a long and enduring tradition of compassion that compels us to help those
36 around us in need. More than a humanitarian exercise, however, improving the health of people
37 around the world directly serves our self-interest and our national security.

38
39 The health of all peoples has been interdependent since time began. In this current age of rapid
40 travel, international commerce, and global communication, it is clear that artificial borders and
41 geographic distances cannot isolate the health and safety problems and concerns of people in one
42 community from those in another. Thus, health of an individual, community, or nation is
43 GLOBAL by nature.

44
45 This Call to Action on Global Health by the U.S. Surgeon General is directed toward all
46 Americans. It is an invitation to enhance the national and international action on global health
47 with the purpose of improving the world’s health.

50 The purpose of this Call To Action is:

- 51 1) to inform Americans on the importance of global health and the urgency of addressing
- 52 the critical global health challenges of the 21st Century
- 53 2) to advocate for action to reduce the deepening disparities in global health
- 54 3) to protect the health of the American people, and
- 55 4) to elicit global cooperation and collaborative support from national and international
- 56 organizations, as well as the American public, in health research and action.

57

58

59 **What exactly is Global Health? Why is it important?**

60

61 Simply put: Global health is the health of populations -- of humanity at large. It is ensuring
62 health and safety millions of people at a time, just as family doctors care for one patient at a
63 time. The Institute of Medicine (IOM), part of the U.S. National Academy of Science, has
64 defined global health as referring to “health problems, issues, and concerns that transcend
65 national boundaries, may be influenced by circumstances or experiences in other countries, and
66 are best addressed by cooperative actions and solutions.”

67

68 Global health is about recognizing that the health problems seen around the globe are also
69 seen in our own backyards. Global health problems need to be directly faced, not only for purely
70 selfish reasons, but because humanity will be better-off because of it. We cannot overstate the
71 reality that problems in remote parts of the globe can no longer be ignored. Diseases that
72 Americans once read about as affecting people in regions of the world that most of us would

73 never visit are now capable of reaching us directly. The hunger, disease, and death resulting
74 from poor food and nutrition create social and political instability in many nations, and that
75 instability may spread to other nations as people migrate to survive. The environmental
76 conditions that poison our water and contaminate our air are not contained within national
77 boundaries, but float on winds and waves to not-so-distant places. Failing to address global
78 health issues outside our national border will only make the problems that much more
79 challenging when they enter our country.

80

81 Global health is of fundamental moral, practical, and strategic importance to the United States
82 for peace, prosperity, and well-being.

83

84 *Caring about the health of others is a moral value shared by people of all cultures and religions.*

85 All societies, cultures, and religions value human life. All people harbor a compassion that
86 drives us to help those who are suffering or in need. If we see an accident victim, a
87 malnourished child, or a sick or vulnerable adult, we are compelled to help. We believe that to
88 allow suffering to continue is inhumane. Implicit in this is a shared moral perception that taking
89 care of the basic health and well-being of our fellow men and women is the “right thing to do.”

90 This is substantiated time and time again, particularly during times of crisis, such as the 2005
91 hurricanes that ravaged the southern gulf and east coasts of the United States, the 2004 Tsunami

92 that devastated Southeast Asia, or the flooding that destroyed lives and land in Haiti in 2004.

93 People everywhere continue to reach out to help in whatever way possible to alleviate human
94 suffering.

95

96 *Caring about the health of others is also of practical significance because of the*
97 *interconnectedness of the world and the ability of disease to spread rapidly across borders.*
98 Global health is the awareness that SARS can emerge in Hong Kong and almost immediately
99 strike Toronto; it is the understanding that the Hantavirus, first seen in Korea, can turn up years
100 later in New Mexico; it is the recognition that the hemorrhagic fever of the African interior may
101 take root in a Western metropolis or that an influenza pandemic could emerge in humans almost
102 anywhere in the world and spread globally within days. Global health grasps that viruses,
103 bacteria, and parasites can cross all borders -- so the fight against them must do the same.

104

105 *Caring about the health of others is of strategic significance since health diplomacy, or working*
106 *with other nations on shared health goals, promotes international cooperation, is critical to the*
107 *long-term health and security of the American people. It is the way to protect, promote, and*
108 *advance the health and safety of the nation.* A global health perspective also recognizes that
109 health cooperation is a critical aspect of international cooperation and diplomacy. Health
110 diplomacy also acknowledges that poor health contributes to political and economic instability,
111 two factors that threaten world peace. In countries with an adult HIV-prevalence rate of more
112 than 20 percent, gross domestic product (GDP) can shrink by as much as 1 to 2 percent annually.
113 Similarly, malaria in Africa reduces annual GDP growth by one percent. This decrease
114 exacerbates poverty and economic stagnation, and seriously undermines the viability of affected
115 states. Health is the common currency that can be used to help countries achieve their fullest
116 potential and improve international relations.

117

118 In sum, increased action to improve global health improves lives, reduces the spread of disease,
119 and contributes to global political stability and economic growth.

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121

122 **Why now?**

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124 In 1997, the seminal U.S. Institute of Medicine report *America's Vital Interest in Global Health*,
125 concluded, "...the direct interests of the American people are best served when the United States
126 acts decisively to promote health around the world." Since 1997, the need for greater U.S.
127 investment in global health has only deepened. The challenges we face are extraordinary, but we
128 are not starting from ground zero: The United States is a leader, a catalyst, and a partner in
129 global health.

130 The new century has brought a myriad of new challenges and opportunities in global
131 health. Vaccines, antibiotics, clean and available water, proper environmental sanitation, and
132 other breakthroughs in scientific and health research and technology are among the many
133 contributions to improved health. Improved health literacy is also critical to helping people
134 improve their own health and the health of those around them. Health literacy is the ability of an
135 individual to access, understand, and use health-related information and services to make
136 appropriate health decisions. Yet new emerging diseases like the Human Immunodeficiency
137 Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS), Severe Acute Respiratory Syndrome
138 (SARS), and Avian Influenza provide new challenges to a nation's public health capacity.
139 Chronic diseases such as diabetes, heart disease, and asthma have reached epidemic levels.
140 Unprecedented flows of people and goods across borders strain existing early warning disease

141 surveillance systems. Poverty and health disparities are major contributors to the numerous
142 challenges to global public health. The time to react and respond is now.

143 The multiple connections and interactions which are integrating countries, economies,
144 and populations are usually today described as “globalization.” We live in an age of
145 globalization, in which there is no longer a distinction between domestic and international health
146 problems. Pathogens know no boundaries, and infectious diseases are carried, sometimes within
147 hours, to our shores via travel and trade. The movement of two million people each day across
148 national borders and the growth of international commerce contribute to health risks ranging
149 from infectious disease spread by travelers to contaminated foodstuffs. Our response to these
150 threats must match or surpass their speed of transmission. Failure to do so will have devastating
151 consequences on more than just the physical health of our citizens; it will also have serious
152 repercussions on the health of the U.S. economy and on our national security.

153 Globalization is also a positive force that has lead to improvements in social, economic,
154 and political conditions worldwide. It also allows for increased information sharing for disease
155 control and prevention. However, because of social and economic inequalities, not everyone
156 reaps the benefits of globalization at the same time, and such disparity contributes to instability.
157 Globalization means that countries are more interdependent than ever. No country can truly “go
158 it alone” or try to shut out the rest of the world with respect to public health matters. To be
159 successful in efforts to improve health status and prevent the occurrence of new disease
160 outbreaks, Americans must adopt a global view of health. We must think beyond our borders:
161 therefore, health is a legitimate driver of our national foreign and economic policy, and a benefit
162 of globalization.

163 The new challenges and opportunities in global health increase the urgency to develop a
164 proactive global health strategy. The United States has been a leader in addressing global health
165 problems and continues to renew its commitment to improving global health. Through private
166 contributions, government assistance, and other forms of technical cooperation, Americans have
167 made significant improvements in health and development across the globe. These
168 improvements have included developing systems for clean water and community environmental
169 sanitation, providing basic immunizations and basic medications, and developing educational
170 and related activities which support health systems. Together with its international partners, the
171 United States has the demonstrated capacity to improve health and quality of life for millions.

172

173 *Key messages*

- 174 • Global health is important because it has a direct impact on our lives as Americans
- 175 • There are things everyone can do to improve global public health
- 176 • Partnerships, formed within the United States and globally, have the capacity to improve
177 health and quality of life for millions

178

179 The next section will examine a few of the global health issues that must be addressed by
180 Americans and the global community. These examples do not cover the vast spectrum of
181 pressing global health issues. Rather, they are intended to be illustrative of some of the most
182 critical and complex issues at hand.

183

184

185 DID YOU KNOW? As stated in Article 25 of the Universal Declaration of Human Rights,
186 adopted by the General Assembly of the United Nations on December 10, 1948:
187 “Everyone has the right to a standard of living adequate for the health and well-being of himself
188 and of his family, including food, clothing, housing and medical care and necessary social
189 services, and the right to security in the event of unemployment, sickness, disability, widowhood,
190 old age or other lack of livelihood in circumstances beyond his control.”

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Part II: Global Health Issues

194

195 The following sections will address just a few areas of global health that directly affect us
196 all and are emblematic of the threats we are likely to face in the future. The people in the stories
197 are fictional, but they represent real world experiences. As you read this section, keep in mind
198 that each area raises the moral, practical, or strategic concerns we described in Section I.
199 Perhaps more importantly, this Section considers human tragedies that are often preventable or at
200 least can be managed to reduce the threat to global health. Using health diplomacy to alleviate
201 these tragedies is both a moral imperative and in our vital long-term national interests.

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208 **Disease**

209

210 *Miriam was worried. She suspected that her husband, David, was unfaithful to her when he was*
211 *away from home on his job as a long-distance truck driver. One of her neighbors in their small*
212 *village in Africa had contracted HIV from her husband, who worked for the same trucking*
213 *company as Miriam's husband. Miriam tried to talk to David about his sexual behavior, but he*
214 *told her that it was none of her business. "How could it not be my business?" she asked herself,*
215 *"Don't I have a right to protect myself and my unborn baby from the deadly disease AIDS?"*
216 *She tried to get David to use a condom when they had sex, but he refused, and she had no way to*
217 *force him to do so or to deny him sex. To make it worse, her husband refused to let her go to the*
218 *doctor by herself, and if she did, he would be furious and might hurt her. If it turned out she was*
219 *HIV positive, she and her husband would be shamed. She felt trapped, alone, scared,*
220 *depressed, and angry, but she had nobody she felt she could talk to about this, even though she*
221 *knew of a nearby clinic that provided people with medication. So Miriam just hoped and prayed*
222 *that she and her baby would be lucky and spared the devastation of AIDS.*

223

224 *If Miriam and her baby developed AIDS, it would have been a preventable tragedy. Miriam and*
225 *her unborn child would face intolerable and unnecessary suffering and injustice. She is not*
226 *empowered to take control over her health and the health of her family. Furthermore, if David*
227 *was being unfaithful and he was HIV positive his indiscretions would spread the disease rapidly*
228 *across large distances. The spread of the HIV/AIDS has already proven to have dramatic effects*
229 *on entire populations in Africa, where thousands of adults and children are suffering and dying*
230 *prematurely from a preventable disease. The disease has already spread rapidly to people on*

231 *other continents, including the thousands in the United States who are infected as well. There*
232 *still is no cure, and treatment for the disease remains extremely expensive, in economic and*
233 *human terms. As a result, HIV/AIDS and other diseases contribute to political and economic*
234 *instability in many countries. By their nature, they can spread rapidly across national borders,*
235 *and hence require international cooperation to be controlled, particularly in the area of*
236 *prevention. Disease must thus be viewed as a global problem.*

237
238 Disease has been a part of life since early times. Paintings and drawings from ancient
239 civilizations such as that of Egypt depict humans exhibiting the symptoms or consequences of
240 diseases such as polio. The human race learned long ago that infectious diseases do not respect
241 national borders. The Black Death (bubonic plague) of the Middle Ages, for example, swept
242 across Europe and killed an estimated one-quarter of the population. The worldwide influenza
243 pandemic of 1918 resulted in some twenty to fifty million deaths. Health authorities predict that
244 a future flu pandemic could infect anywhere from 20 to 50 percent of the world population,
245 resulting in huge social and economic disruption, as well as extensive loss of life.

246 Many factors contribute to one's vulnerability to disease. Being poor, of a disadvantaged
247 minority group, a migrant or refugee, a child, a prisoner, or having a weak immune system due to
248 HIV or substance abuse or malnutrition are all factors that may lead someone to become ill.
249 Physical and social environments also exert a profound effect on health. A wide range of
250 conditions, such as poor sanitation, chemical toxins, inadequate access to health care, political
251 instability, risky behavior, violence, etc., can all influence health and cause disease.

252 Infectious Disease

253 Despite the development of vaccinations, antibiotics, and other medical technologies,
254 one-third of all deaths worldwide in 2003 were caused by infectious diseases according to the
255 World Health Organization (WHO). Six global diseases (acute respiratory infections,
256 HIV/AIDS, diarrhea, tuberculosis, malaria, and measles) accounted for roughly 90 percent of
257 worldwide deaths from infectious diseases. It is especially distressing that many deaths due to
258 infectious diseases could be prevented by existing public health strategies and the use of
259 vaccines. Making vaccines and treatment more widely available, as well as developing vaccines
260 and treatments against diseases for which none currently exist, would save millions of lives a
261 year.

262 HIV/AIDS may be the defining medical and public health issue of our time. By 2005,
263 HIV, the virus that causes AIDS, had infected a cumulative total of more than 60 million people,
264 a third of who have died. More than one million Americans are living with HIV, and HIV/AIDS
265 is an urgent and cascading problem in developing countries. According to the most recent global
266 estimates by UNAIDS and the WHO, about 40 million people are infected with HIV globally,
267 and 3.1 million adults and children died of AIDS in 2005. HIV/AIDS remains a constant crisis.
268 Over the next twenty years, HIV/AIDS is expected to cause a decline in life expectancy in 51
269 countries. The disease, which is the fourth largest killer globally, is not spread evenly
270 throughout Earth's population; about 95 percent of those infected are in the developing world
271 and most of those are in Sub-Saharan Africa. HIV is causing enormous social disruption in
272 many countries: millions of children have become orphans, and health care workers and facilities
273 in many areas have been overwhelmed by the number of HIV/AIDS patients requiring medical
274 care.

275 Women are more vulnerable to HIV than men because of biological and cultural factors.
276 For example, because of the anatomy of their reproductive tract women are subject to more
277 frequent infections of the reproductive tract than men which render them more vulnerable to
278 infection with HIV. But cultural factors are even more important than biological ones with
279 respect to the danger of women acquiring and spreading HIV/AIDS. In many populations
280 women lack the power and economic independence to negotiate safe sex with their partners, for
281 example, under many circumstances they cannot insist on the use of a condom and women who
282 exchange sex for income are in even a weaker position to insist upon safe sex. (Germain, 2002)

283

284 **Early Warning Systems: The importance of surveillance**

285 One of the most valuable elements in global health is the ability to detect the first signs of
286 an outbreak of infectious disease anywhere in the world. As a result of the AIDS pandemic and
287 the concern about a pandemic influenza, particularly the current H5N1 strain of avian influenza,
288 or “bird flu,” an effective global surveillance network is a high priority. Stimulated in part by
289 the AIDS pandemic, national and international groups, including the National Science and
290 Technology Council in 1995 and the G-8 in 1997, called for the establishment of a global early-
291 warning system for infectious diseases. Countries have been working together to help develop a
292 global early-warning system that includes surveillance and outbreak response. Important
293 progress has been made at the regional level, with the establishment of such international
294 programs as the Caribbean Epidemiology Center's disease surveillance network; the Amazon and
295 Southern Cone networks in South America; the Integrated Disease Surveillance and Epidemic
296 Preparedness and Response Project in Africa; the Mekong Basin Disease Surveillance system in

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

299 An immediate priority for the United States lies in disease surveillance along our borders
300 with Mexico and Canada. Under the Security and Prosperity Partnerships of North America,
301 HHS works to enhance infectious-disease surveillance capabilities within North America by
302 creating public-health emergency preparedness systems along and across the U.S.-Mexico and
303 the U.S.-Canada borders. Information about disease occurrence in the areas across and along the
304 Southern and Northern borders is both a public health and national security imperative. The
305 programs in development focus on early detection, accurate identification, and prompt reporting
306 of infectious-disease outbreaks associated with potential bio-terrorism agents or other major
307 threats to public health. The areas of primary emphasis include the training of epidemiologists,
308 laboratory and clinical personnel, and information-technology specialists.

309

310 While HIV/AIDS attracts a great deal of international attention, other infectious diseases
311 also have a significant impact on global health. Malaria, caused by several species of parasites in
312 the genus *Plasmodium* and transmitted to humans by the bite of an infected mosquito, is another
313 deadly infectious disease that continues to plague our world.

314 In spite of an overall decline in cases world wide since 1930, malaria cases in Africa has
315 actually increased during the past few decades, and the disease remains endemic in Southeast
316 Asia and the Americas. An estimated 500 million cases of malaria occur each year, which
317 results in one to two million deaths, mostly children less than 5 years of age. In areas of Africa
318 with high malaria transmission, an estimated one million people die of malaria each year, over
319 2,700 deaths per day, or two deaths per minute. The associated morbidity of this disease is

320 incalculable because many of the children who survive are repeatedly infected, with resultant
321 poor nutrition, impaired development, and, perhaps, increased susceptibility to comorbid
322 infections and associated disease. In Latin America, approximately forty percent of the region's
323 818 million people are at risk for malaria. Malaria morbidity and mortality numbers for the
324 Americas region are 909,788 (based on number of positive blood slides), and 99 deaths,
325 respectively for 2003. Latin America has made improvements in combating morbidity and
326 mortality from malaria, but neglect will prejudice those improvements. Further, with evolving
327 technology, we can reach the hard-to-serve in ways not previously possible.

328 Controlling malaria will contribute significantly to the internationally agreed upon
329 development goals contained in the United Nations (UN) Millennium Declaration, which all 193
330 UN Member States have pledged to achieve by 2015. Beyond reducing the disease burden, a
331 successful fight against malaria will have far-reaching impact on child morbidity and mortality,
332 maternal health, and poverty, which in turn could increase global stability.

333 Malaria treatment, control and prevention should be an integral function of an effective
334 health system, supported by strong community involvement. Sustained success in malaria
335 reduction calls for development of the health sector; improved case management, the use of
336 intermittent presumptive treatment programs for pregnant women, insecticide-treated bed nets,
337 and spraying of households with insecticide.

338 In the past, chloroquine and sulfadoxine-pyrimethamine were highly effective standard
339 treatments for preventing and treating malaria, but now some of the parasites have developed
340 drug-resistance. In May 2005, the World Health Assembly (WHA), the supreme governing body
341 of the WHO, passed by consensus Resolution WHA 58.2 for malaria control. This resolution
342 calls for increased allocation of domestic resources; rapid scale-up of prevention, including free

343 or highly subsidized distribution of insecticide-treated nets to vulnerable groups; support for
344 expanded household insecticide spraying; access to artemisinin-based combination therapy
345 (ACT); and the development of new medicines to treat malaria, especially for children and
346 pregnant women.

347

348 **Roll Back Malaria**

349 The WHO, the United Nations Children’s Fund, the United Nations Development
350 Programme and the World Bank launched Roll Back Malaria in 1998. The goal is to
351 halve the burden of malaria by 2010. Reducing malaria requires commitment,
352 coordination and financial support. The core technical strategies of RBM for the
353 sustainable control of malaria are the following:

354 Improved and prompt access to treatment; increased use of insecticide-treated bed
355 nets and control of mosquitoes; early detection of and response to malaria epidemics; and
356 improved prevention and treatment of malaria in pregnant women in highly endemic
357 areas. Stated simply, the RBM strategy is to combine both prevention and cure. To be
358 successful, malaria control must be incorporated into all health and development policies,
359 strategies and programs.

360

361 Tuberculosis (TB) also continues to be a major killer. Tuberculosis is a contagious
362 disease, caused by the bacteria *Mycobacterium tuberculosis* (Mtb), and is spread, much like the
363 common cold, by coughs, sneezes, talk or spit. A person can become infected when even a few
364 infected droplets are inhaled. One third of the world’s population (approximately two billion
365 people), is infected with Mtb. Most people who are infected are able to fight off active infection,

366 but may retain a latent TB (a time of infection with no signs or symptoms of active disease),
367 while others appear to clear the organism completely. However, the WHO estimates that nearly
368 eight million people develop active TB every year, almost 98 percent of whom live in the
369 developing world. Although a cure was discovered over fifty years ago, TB kills between two
370 and three million people every year, and not just in the developing world. In 2003 the 50 states
371 and the District of Columbia reported 14,517 cases of tuberculosis. Tuberculosis has re-emerged
372 along the U.S.–Mexico border. Mexicans and immigrants from other countries who move
373 through Mexico cross this border to migrate to the United States. A quarter of all foreign-born
374 tuberculosis patients in the United States are Mexican, and the United States and Mexico have a
375 bilateral program to issue TB bi-national cards so treatment for tuberculosis can continue in both
376 countries.

377 Of the approximate two million people who become sick with infectious tuberculosis
378 each year, 300,000 have infections that are resistant to the first-line drugs used to treat TB.
379 Tuberculosis is most often is found in the homeless and in those with HIV/AIDS. One third of
380 the estimated 40 million people living with HIV/AIDS are also infected with tuberculosis. Each
381 disease makes the other worse, accelerating the pathology caused by each infectious agent and
382 hastening the death of the individual. Both diseases should be treated when they are present but
383 there are times when an immune reconstitution syndrome develops with treatment of the HIV
384 infection and fatal complications, such as TB meningitis, occur. There are many clinical trials,
385 supported by the US National Institute of Allergy and Infectious Diseases, underway which are
386 investigating the best timing of treatment for people infected with both pathogens. Another
387 complication of co-infection is that TB is harder to diagnose in HIV-positive patients; therefore,
388 treatment for tuberculosis often has been absent, inconsistent or inadequate, which may

389 contribute to the development of drug-resistant tuberculosis. Even where effective drugs are
390 available, curing TB demands a long continuous pattern of treatment, six to nine months or
391 perhaps even life, until a cure is achieved in an HIV infected person.

392

393 **The Global Fund to Fight AIDS, Tuberculosis and Malaria**

394

395 The Global Fund is a public-private foundation created to finance a dramatic turn-
396 around in the fight against AIDS, tuberculosis, and malaria. The Global Fund
397 receives most of its funding from national Governments; the United States is the
398 largest contributor to the Fund, and has provided almost one-third of the \$3.7
399 billion that it has received. The President's 2006 budget requested an additional
400 \$300 million. AIDS, tuberculosis and malaria kill over six million people each
401 year, and the numbers are growing. To date, the Global Fund has committed
402 U.S.\$ 3 billion in 128 countries to support aggressive interventions against all
403 three diseases. By funding the work of new and existing programs, it can save
404 millions of lives, stop the spread of disease and halt the devastation to families,
405 communities and economies around the world. As a partnership between
406 Governments, civil society, the private sector and affected communities, the
407 Global Fund represents an innovative approach to international health financing.
408 The Global Fund is a results-based, grant-making body to which stakeholders
409 from developing countries submit program proposals in a competitive, peer-
410 reviewed process. HHS is a leader in facilitating these reviews. The submission

411 process was designed from the start to be inclusive of community and faith-based
412 organizations, as well as representatives from Governments.

413
414 Global spread of infectious diseases is not restricted to human-to-human transmission.
415 Diseases found in animals that can infect humans are known as “epizootic” diseases. These
416 diseases become particularly dangerous when they mutate to allow for human-to-human
417 transmission. The spread of West-Nile Virus and strains of influenza, including Avian Influenza
418 A H5N1, is initially caused by animal-to-animal transmission.

419 Avian Influenza H5N1 has gained significant international attention. Most experts today
420 view the increasing possibility of a pandemic influenza as the most significant global health
421 emergency on the immediate horizon. A pandemic is a global disease outbreak, and an influenza
422 pandemic occurs when a new influenza A virus emerges for which there is little or no immunity
423 in the human population, begins to cause serious illness and then spreads easily from person to
424 person worldwide. Historically, pandemics have traveled along sea-lanes, with global spread
425 completed within six to eight months. Air travel has shortened this timeline considerably.

426 The 20th Century saw three influenza pandemics. 500,000 Americans died during the
427 “Spanish flu” of 1918, and across the world approximately 20 million to 50 million people died.
428 In 1957-58, the “Asian flu” caused 70,000 deaths in the United States. Then in 1968-69, the
429 “Hong Kong flu” caused about 34,000 deaths in this country. Viruses containing a combination
430 of genes from a human influenza virus and an avian influenza virus caused both the 1957-58 and
431 the 1968-69 pandemics. Many scientists believe the cause of the 1918 pandemic was an avian,
432 or bird, influenza virus, like the H5N1 influenza virus that is currently circulating in many parts
433 of the world. Scientists think the present situation might resemble that before the 1918

434 pandemic. Similarities between the H5N1 strain of highly pathogenic avian influenza A and the
435 1918 virus include the gradual adaptation of an avian virus to a human-like virus, the severity of
436 disease, its concentration in young and healthy people, and the occurrence of primary viral
437 pneumonia (which cannot be treated) in addition to secondary bacterial pneumonia (which
438 responds to antibiotics).

439 While no one can predict the timing of influenza pandemics, rapid international spread is
440 certain once a virus with the appropriate characteristics appears. The speed of the spread of a
441 disease does not predict how deadly it will be, but it raises questions about the surge capacity of
442 health systems in our country as well as across the world if almost simultaneous outbreaks occur.
443 Countries, including the United States, are already working together to take preventive measures
444 to prepare for a possible global outbreak of pandemic influenza.

445

446 **Children and Immunizations**

447 Children are especially vulnerable to disease and injury, but the information and
448 technologies exist to save the lives of millions of these children each year. Yet coverage
449 of many basic interventions has either slipped or stagnated. In the 1990s, levels of
450 immunization coverage stagnated or dropped in many countries. The WHO estimates
451 that 2.5 million children died in 2002 from diseases preventable by vaccines currently
452 recommended by WHO, plus vaccines that are soon expected. These vaccines include
453 measles (540,000 deaths), Haemophilus influenza type B (Hib) (386,000 deaths),
454 pertussis (294,000 deaths), neonatal tetanus (180,000 deaths), and tetanus (non-neonatal;
455 18,000 deaths). Additional deaths among children due to rotavirus, meningococcus, and
456 pneumococcus approximate 1.1 million. A recent assessment by the Bellagio Study

457 Group on Child Survival indicates a stark and representative contrast between evidence
458 and application in resource-poor settings. The deaths of an estimated two-thirds of
459 children less than five years old could be averted with proven interventions that can be
460 deployed in low-income countries. (Bellagio Study Group, 2003)

461

462

463 While the aforementioned diseases capture significant attention in the media and
464 elsewhere, many other infectious diseases, continue to kill huge numbers of people worldwide.
465 Childhood diarrhea is one such deadly condition, sometimes caused by rotavirus (other causes
466 will be discussed in other sections), a highly contagious infection that affects 130 million infants
467 and children worldwide by age two. The virus causes diarrhea and vomiting which results in
468 dehydration and the most serious cases require hospitalization for intravenous fluids.
469 Worldwide, rotavirus diarrhea results in hundreds of thousands of child deaths a year. In the
470 United States rotavirus causes more than three million cases of childhood diarrhea each year, and
471 leads to 55,000 to 100,000 hospitalizations and 20-100 deaths. Clinical trials for rotavirus
472 vaccines are underway and when they are available widespread vaccination could save \$500
473 million in health-care costs in the United States and worldwide could reduce deaths by 30
474 percent, and saving as many as one million children each year.

475

476 **DID YOU KNOW?** Just one vaccine-preventable disease, measles, was responsible for
477 about 745,000 deaths in 2001. The measles vaccine is safe, effective and cheap, costing
478 approximately U.S. \$0.30 a dose, including needle, syringe, and disposal, and results in near-zero
479 death rates. Some countries include measles mortality reduction strategies into their health care

480 programming, which may include vitamin supplementation, insecticide treated bed-netting, and
481 other vaccinations. With intensified efforts to improve measles vaccine coverage in Africa,
482 measles deaths fell to 454,000 in 2004, according to WHO and UNICEF.

483

484

485 Chronic Disease

486 Infectious diseases, however, are by no means the only cause of illness, disability and
487 death in the world. The WHO estimated that in 2004, for example, non-communicable diseases
488 accounted for about 60 percent of global deaths and almost half (47 percent) of the global burden
489 of disease. The leading non-communicable diseases are cardiovascular diseases, cancers,
490 respiratory disorders, digestive disorders, and neuropsychiatric disorders. Chronic diseases are
491 not exclusive to the developed world. Rather, the developing world is becoming increasingly
492 burdened with both chronic and infectious disease, partly due to the rapid adaptation of
493 behaviors and lifestyles that adversely affect health.

494 The World Health Organization (WHO) reports that in 2002, approximately 16.7 million
495 people died from cardiovascular disease (CVD). Cardiovascular disease includes coronary heart
496 disease, stroke, hypertensive heart disease, inflammatory heart disease, rheumatic heart disease,
497 and other heart diseases. Risk factors for CVD vary between developed and developing
498 countries. However, among both developed and developing countries, most CVD is attributable
499 to tobacco use, high blood pressure, high cholesterol and obesity. Coronary heart disease is
500 decreasing in many developed countries, but it is on the rise in many developing and middle-
501 income countries. Experts at the WHO and elsewhere attribute this change to increased
502 longevity, urbanization, and lifestyle changes. In fact, the WHO reported in “*The Atlas of Heart*

503 *Disease and Stroke*” in 2004 that more than 60 percent of the global burden of coronary heart
504 disease occurs in developing countries.

505 Moreover, approximately 15 million people worldwide suffer a stroke every year.
506 Approximately 5 million of these people will die, while another 5 million are left permanently
507 disabled, leaving a burden on their families and communities. The WHO reports that while the
508 incidence of stroke may be decreasing in many developed countries, largely as a result of better
509 control of high blood pressure and reduced smoking, it continues to increase world wide. This is
510 likely attributable to the aging population, as well as uncontrolled increased blood pressure. The
511 risk factors for cardiovascular disease and hypertension can be greatly reduced through proper
512 diet, exercise, and medication. In fact, treating hypertension can reduce the risk of stroke by up
513 to 40 percent. Key to achieving this reduction in risk, however, is improved health literacy.

514

515 **DID YOU KNOW?** Heart disease and stroke together constitute the leading cause of
516 death worldwide, resulting in about 17 million (about one-third of) all deaths per year.

517

518 Diabetes has become one of the major causes of premature illness and death in most
519 countries, especially because it increases the risk of CVD. An estimated six deaths per minute,
520 or 3.2 million deaths per year, are attributed to diabetes or related conditions. In addition to the
521 deaths resulting from the disease, diabetes leads to various disabilities, including loss of limbs
522 and or vision, which frequently carry economic and social consequences. In 2003, the Pan
523 American Health Organization (PAHO) reported that expenditures associated with permanent
524 and temporary disabilities from diabetes were over 50 billion dollars in Latin America and the

525 Caribbean alone. These costs are in addition to those for insulin and other drugs, hospitalization,
526 and other medical care for persons with the disease.

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

534 Tobacco is the second major cause of death and the fourth most common risk factor for
535 disease worldwide. It is responsible for approximately five million deaths each year. The
536 economic costs of tobacco are also high, estimated to be \$200 billion a year globally, with a third
537 of this loss occurring in developing countries. The WHO reports that if current smoking patterns
538 continue, it will cause some 10 million deaths each year by 2020. Half the people that smoke
539 today -approximately 650 million people- will eventually be killed by tobacco. Tobacco control
540 measures can have a significant impact on reducing tobacco consumption, hence decreasing the
541 burden of disease and death due to tobacco use.

542

543 **The Framework Convention on Tobacco Control**

544 The World Health Organization (WHO) Framework Convention on Tobacco Control
545 (FCTC) is the first global health treaty negotiated under the auspices of the WHO. This
546 convention is an evidence-based treaty that reaffirms the right of all people to the highest
547 standard of health. It represents a paradigm shift in developing a regulatory strategy to address

548 addictive substances; in contrast to previous drug control treaties, the WHO FCTC asserts the
549 importance of demand reduction strategies as well as supply reduction issues. The WHO FCTC
550 was developed in response to the globalization of the tobacco epidemic. The spread of the
551 tobacco epidemic is exacerbated by a variety of complex factors with cross-border effects,
552 including trade liberalization, direct foreign investment, global marketing, transnational tobacco
553 advertising, promotion and sponsorship, and the international movement of contraband and
554 counterfeit cigarettes.

555 There are currently 168 countries who are signatories to the FCTC, and 128 who are
556 parties to it (i.e., their national legislative bodies have approved the country's participation).
557 While the United States signed the FCTC treaty in May 2004, Congress has yet to ratify the it,
558 therefore the United States has not yet become a formal party to this agreement.

559
560 Mental illness also takes a heavy toll in human misery and death. It is estimated that
561 nearly 450 million people are afflicted with mental, neurological or behavioral problems
562 worldwide at any given time. Moreover, the WHO estimates that depression was found to be the
563 second leading cause of disability worldwide. Even though mental illness has high economic
564 and social costs, stigmatization of mental health continues to have a tremendous effect on
565 individuals who are in need of care. It causes enormous suffering and should be considered life-
566 threatening, with approximately 873,000 people who commit suicide annually.

567 Nonetheless, the world has been slow to recognize and respond to mental illness. Mental
568 health problems are frequently not considered as high a priority in health care systems as
569 physical problems, because people often do not recognize the seriousness of mental illness and
570 frequently lack understanding about the benefits of care and treatment. As the WHO points out,

571 policy makers, insurance companies, health and labor policies, and the public at large – all
572 discriminate between physical and mental problems. Furthermore, the WHO reports that most
573 middle and low-income countries devote less than 1% of their health expenditure to mental
574 health. Consequently mental health policies, legislation, community care facilities, and
575 treatments for people with mental illness are not given the priority they deserve. The *2005*
576 *Mental Health Atlas*, published by WHO shows no substantial change in global mental health
577 resources since 2001, while there continue to be marked and growing differences in availability
578 between high- and low-income countries. For example, the WHO survey of 192 countries does
579 show a slight increase in the total number of psychiatrists from 3.96 to 4.15 per 100,000 people
580 worldwide, distribution across regions ranges from 9.8 in Europe to just 0.04 in Africa.

581 There are numerous other important diseases (e.g., arthritis, asthma, and pneumonia),
582 both infectious and non-communicable, that contribute to global health care problems, but will
583 not be discussed here due to space constraints. While not exhaustive, this section was intended
584 to highlight some of the diseases that are facing the global population.

585

586

587 **Women's Health**

588 Numerous studies have demonstrated that women's health is directly linked to
589 women's education and empowerment. As primary caretakers in many societies, women
590 play a critical role in curbing the spread of disease. Educated women are also in a better
591 position to care for themselves and their children. Despite improvement in the status of
592 the world's women, they still face substantial discrimination in many ways. Large gaps
593 exist between women and men in access to education, health, nutrition, and political

594 power. These inequalities directly and indirectly lead to significant health problems for
595 women that also have an impact on their families and communities.

596 Today many of the health challenges facing women worldwide (such as high rates
597 of maternal mortality, HIV infection, and sexual violence against women and girls) stem
598 from a basic denial of women's rights as human beings. Inequality between men and
599 women is a major threat to women's health. In some societies where it is unacceptable
600 for women to leave the house without their husbands' permission, pregnant women who
601 need medical assistance face a risk of serious complications and death if their husbands
602 are not home to grant them permission to seek medical care. Pregnant and childbearing
603 women die because their basic nutrition is compromised, their reproductive rights are
604 violated, and their access to medical care is denied as a result of gender inequality
605 (Germain, 2002). As long as these inequalities persist, health outcomes will remain far
606 from optimal; not only for women, but for the vulnerable populations they traditionally
607 care for, including children and the elderly. Allowing such disparity to persist presents a
608 significant moral challenge to all populations.

609

610

611

612

613 **Food and Nutrition**

614

615 *Diane was a self-proclaimed couch-potato, with a love for all things chocolate.*

616 *Unfortunately, her 13 year old daughter, Sarah, had followed her example from an early*

617 *age and was already nearing 165 pounds on her 5'1" frame. Lately Sarah had been*
618 *complaining of being more tired than usual, would sometimes get light headed, and she*
619 *was constantly drinking any beverage she could get her hands on. Diane was starting to*
620 *become concerned, so she took her daughter to the pediatrician. The doctor took some*
621 *blood samples and called them back to let them know that Sarah had developed Type II*
622 *diabetes. She would need to go on a strict diet and exercise regimen or face insulin*
623 *shots. Moreover, she needed to start monitoring her glucose level several times a day.*
624 *They left the office stunned. Diane always believed that Type II was an adult disease, but*
625 *yet her adolescent daughter was diagnosed. The doctor said the girl's obesity, triggered*
626 *by too many sweets and junk food, and sedentary lifestyle were to blame. Diane realized*
627 *that the time had come for a change in both their lives.*

628
629 *Food is the sustenance of life. Yet, every year millions of people across the globe develop*
630 *some form of disease related to their diet, just like Sarah. Too much of the wrong kinds*
631 *of food, just as well as too little of nutritious foods contribute to disease and premature*
632 *death. With all the knowledge, wealth, technology and transportation mechanisms the*
633 *world has developed, there is little reason why any child or adult should suffer from poor*
634 *nutrition resulting in malnourishment or obesity today. The solutions to both problems*
635 *are well known. Yet, every nation faces issues related to food supply, food safety, and*
636 *proper nutrition.*

637
638 *Food and health are intimately related. Not getting enough to eat can lead to reduced*
639 *physical capacity, higher rates of illness, and premature death. Diets that are deficient in certain*

640 vitamins or minerals can result in disease and disability. UNICEF reports that deficiencies of
641 micronutrients such as iron, iodine, vitamin A, and folate affect nearly one-third of the world's
642 population, and result in reduced mental and physical development of children, poor pregnancy
643 outcomes, diminished work capacity of adults, and increased morbidity and premature mortality
644 among populations.

645 The 2006 UNICEF report "Progress for Children: A Report Card on Nutrition" cites that
646 more than one quarter of all children under the age of five in developing countries are
647 underweight, many to a life-threatening degree. Poor nutrition remains a global epidemic
648 contributing to more than half of all child deaths, about 5.6 million per year. Malnourished
649 children in South Asia, Bangladesh, India and Pakistan account for half of all the world's
650 underweight children: approximately 47 percent of India's under-five population is underweight,
651 dragging down the regional average. In the famine-prone Eastern and Southern Africa region 29
652 percent of children under-five years of age are underweight. Despite some improvements several
653 countries are falling behind again, with drought-related food crises and the rise of HIV/AIDS
654 impacting the populations dramatically. Some reports indicate that the Western and Central
655 African regions have done better, partly due to strides made by some countries to support
656 exclusive breastfeeding for infants and community-based health care.

657 Females are much more likely to suffer from malnutrition and associated health problems
658 than males. Girls and women receive less food than men and boys when food is scarce. Women
659 also generally receive less protein-rich food than men even when they are pregnant or nursing.
660 This is true even though women are responsible for most of the world's food production,
661 processing and preparation.

662

663 **Bilateral cooperation to prevent birth defects**

664 Nearly a decade of activity between HHS/CDC and the Chinese Ministry of Health (MOH) on
665 the control of spina bifida offers a model for collaboration. The community intervention
666 program conducted by the Chinese MOH in collaboration with HHS/CDC demonstrated that an
667 inexpensive nutritional supplement of folic acid (to prevent folate deficiency) taken before and
668 during early pregnancy could reduce the occurrence of spina bifida (and anencephaly, a more
669 severe form of the defect) by 85 percent in the northern part of China (around Beijing), where the
670 defect is approximately 10 times more common than it is in the south around Shanghai. This
671 definitive study has led to the implementation of folic acid supplementation around the globe.

672

673 Maternal malnutrition is a serious problem that affects both children and their mothers.
674 Folate deficiency results in approximately 200,000 babies born yearly with severe and crippling
675 neural tube defects every year. Each year millions of children in the developing world suffer
676 from growth retardation directly related to their intra-uterine conditions. Furthermore, iodine
677 deficiency, the leading cause of preventable mental retardation, results in as many as 37 million
678 babies a year born with learning disabilities. According to UNICEF and the Micronutrient
679 Initiative (2004), iodine deficiency is estimated to have lowered the intellectual capacity of
680 almost all of the 80 nations reviewed by as much as 10 to 15 percent. Decreased intellectual
681 capacity reduces Gross Domestic Products (GDP), diminishes productivity, and impairs
682 development of populations. Iron deficiency is a major cause of maternal deaths, and in the 6 to
683 24 month age group impairs the mental development of 40 percent to 60 percent of the
684 developing world's children. Iron deficiency in adults is so widespread that it is lowering the

685 energies of nations and the productivities of workforces—with estimated losses of up to 2
686 percent of the GDP in the worst affected countries.

687 Vitamin A deficiency compromises the immune systems of approximately 40 percent of
688 the developing world’s pre-school children, leading to mortality of an estimated one million
689 children each year. In addition, nearly three million preschool children are rendered blind as a
690 result of vitamin A deficiency. Yet, solutions can be as simple as a capsule of vitamin A costing
691 just a few cents delivered during immunization – a program currently saving around 350,000
692 lives per year by boosting immune systems. Furthermore, fortifying staple foods with key
693 nutrients like iron and iodine is a proven way to protect millions of children against damaging
694 deficiencies and developmental delays.

695 Clearly, thousands in the developing world still suffer from hunger and malnutrition, and
696 so those who can look elsewhere for sustenance do. This contributes to waves of migration, both
697 legal and illegal, to countries with more resources. These countries, including the United States,
698 while better off, are not always prepared for the burden of caring for the incoming population.
699 Working with the countries of origin, to prevent hunger and resulting migration, benefit both
700 sides.

701

702 **DID YOU KNOW?** Malnutrition is the most common risk factor causing disease and injury.

703 Not all nutrition-related health problems are due to lack of food or of particular nutrients,
704 however. Too much food can make an individual overweight, even obese, increasing the risk of
705 diabetes, heart disease, and other health problems. Foods high in saturated fats can increase the
706 body’s cholesterol level, a risk factor in heart disease and stroke. Nonetheless, even healthy
707 foods, if consumed in excessive amounts, can result in obesity and related risks.

708 The links between diet, physical activity and diseases such as diabetes, hypertension and
709 heart disease are well established. Research has demonstrated that obesity increases the risk of
710 developing diabetes, hypertension, heart disease, stroke, colon cancer, post-menopausal breast
711 cancer, osteoarthritis and a variety of other health problems.

712 In the United States, obesity has become an epidemic. Changes in lifestyles over the past
713 few decades, such as reduced demands for physical work and an increase in dining out and
714 consuming fast foods, have led to an increase in the weight of the average American. The U.S.
715 Department of Health and Human Services' Centers for Disease Control and Prevention (CDC)
716 reported that the proportion of overweight adults increased 50 percent in ten years, and the
717 proportion of overweight children more than doubled between 1976 and 2000. The CDC
718 estimates 3,000 Americans a year die from complications related to obesity, and the country
719 spends 117 billion dollars a year on disease related to overweight and obesity.

720 This epidemic of obesity is not unique to the United States. The WHO estimates that one
721 billion adults worldwide are overweight, and at least 300 million are clinically obese. It is a
722 serious threat to health in other countries as well, both developed and developing countries. As
723 people in developing countries adopt Western lifestyles of unhealthy high fat, high sugar, low
724 fiber, high calories diets, along with lower levels of exercise, obesity increasingly becomes a
725 problem. Due to these lifestyle changes, diseases traditionally associated with developed
726 countries, such as hypertension and heart disease, are increasing significantly in developing
727 countries as well.

728 Food can also be a source of disease in another way. Food that has been contaminated by
729 microorganisms, pesticide spray residues, or other agents can make people sick. In 2004, for
730 example, 317 people became ill in Kenya and 125 died as a result of consuming maize affected

731 by a toxic mold (Aflatoxin) that can grow on certain crops. Many food products are imported
732 daily to the United States from other countries, and the U.S. Food and Drug Administration of
733 the Department of Health and Human Services works closely with foreign growers to ensure that
734 those food products are safe. In addition to accidental poisoning, health officials must also be
735 alert these days to the possibility of individuals such as terrorists intentionally introducing
736 poisonous agents into the food supply. Emergency preparedness can play a critical role in
737 preventing such an incident from occurring. Food production systems and corresponding food
738 safety and security vulnerabilities vary widely with agricultural systems, production methods,
739 and amount of government regulatory oversight. Only by working with the countries from
740 which the food originates can a safe and sufficient food supply be ensured.

741

742 **Water and Air**

743

744 *Raul's rural village in South America never had the luxury of being connected to city*
745 *water pipes, with clean, chlorinated water. Instead, he and his neighbors had to collect*
746 *water from rain-water collection buckets they placed outside their homes. Sometimes,*
747 *though, when the rains did not come, they had to collect water from the nearby river.*
748 *The rains had not come in a while, and Raul was forced to collect drinking water from*
749 *the river. While there, he also collected some vegetables to eat that had been watered*
750 *with water from the river. Over the next few days, he and his wife suffered terrible bouts*
751 *of diarrhea and fever. They grew increasingly weak and had no energy to go look for*
752 *food or help. There was no doctor for miles around to treat them, and even if there was,*
753 *she doubted they would be able to pay for any medicines the doctor might recommend.*

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Raul had no way of knowing for sure that the river was polluted by human excrement due to rains and heavy flooding upstream. However, even basic public health precautionary methods like handwashing and boiling of water or charcoal filtering can be difficult to undertake in the poorest and most remote areas. Lack of infrastructure, coupled with lack of access to health care, can create hazardous living conditions.

The physical environment exerts an enormous influence on global health. In particular, the air we breathe and the water we drink plays a major role in the state of our health. Water and air are essential to life, but can become sources of disease or factors exacerbating disease if contaminated.

Globally 2.3 billion people suffer from diseases associated with contaminated water – mostly the poor from virtually all developing countries. Water-related diseases cause an estimated 12 million deaths a year, nearly half of them due to diarrheal diseases, with children being the most likely victims. Some of the most prevalent water-borne diseases include: cholera, enterotoxigenic *Escherichia coli*, and typhoid fever. These types of diseases are prevalent where there is a lack of clean water and basic public health practices such as handwashing, proper washing of foodstuffs, and sewage removal.

DID YOU KNOW? Nearly 80 percent of childhood diseases that result in death are caused by contaminated water. (WHO and UNICEF, 2000)

776 Water shortages usually lead to problems of water quality since sewage, industrial waste
777 and agricultural and urban run-off overload the capacity of bodies of water to break down or
778 dilute these wastes. Other causes of water crises may arise from natural disasters, such as
779 hurricanes and earthquakes, often leave many thousands of residents of the affected areas
780 without access to safe drinking water for days and weeks after these incidents. The earthquake
781 and tsunami of December 2004 is an example of such a disaster that left thousands temporarily
782 without access to safe drinking water. Yet, simple preventive public health measures were
783 rapidly implemented, and massive outbreak of disease was averted.

784

785 Rivers, oceans and the atmosphere cross national and international borders. Pollution of
786 air and water is thus not confined to the countries in which it occurs. For example, high levels of
787 toxic chemicals known as polychlorinated biphenyls (PCBs) have been found in Inuit people
788 living in some of the most remote areas of the Arctic Circle. Ingested PCBs can be stored in the
789 fatty tissue of animals, and in this case elevated concentrations of PCBs were found in the
790 blubber of whales and seals, one of the major food sources for the Inuits. (Population, 2000)
791 Protecting the Earth's air and water to ensure the health of humans is therefore a global task.

792 Fresh water is considered a renewable resource, but there are limits on the supplies
793 available. In many countries or regions, shortages of fresh water are the main obstacles to
794 agricultural and industrial production. The U.S. Agency for International Development (USAID)
795 reports that nearly half a billion people in 31 countries face serious water shortages today.

796 In addition to being contaminated by disease-causing microorganisms, water can be
797 polluted by chemicals that are injurious to health. The contamination of water by heavy metals
798 such as lead and mercury is a problem for developing and industrialized countries alike. Birth

799 defects, bone malformations, and brain damage are but a few of the many health problems
800 attributed to heavy metal pollution. Uncontrolled emissions from industrial plants and the
801 contamination of water sources from mining operations threaten drinking water quality globally.
802 (Chanlett, 1979)

803 The use of pesticides is also of concern to health officials, scientists, and government
804 leaders around the world. These chemicals can persist in the environment for long periods of
805 time, and are often found in the fatty tissues of animals and humans exposed to them. Release of
806 these chemicals into the air or water can negatively affect the health of biological organisms
807 many miles from the point of discharge. Runoff from pesticides used on food crops, for
808 example, can enter and contaminate lakes, rivers and other bodies of water. Chlorinated
809 hydrocarbon pesticides are much more closely regulated than they once were, but they can still
810 pose a threat to health, especially since they decompose slowly and can remain in the water or
811 soil for long periods of time. Even the less dangerous and less persistent pesticides introduced in
812 recent times can have negative effects on health. When such chemicals are found in water
813 supplies, they usually occur in small amounts. Nonetheless, if consumed they may potentially
814 cause chronic health problems such as organ failure, cancer, or birth defects. (*Population*, 2000)

815 Air pollution is a major environment-related health threat to children and a risk factor for
816 both acute and chronic respiratory disease. While second-hand tobacco smoke and certain
817 outdoor pollutants are known risk factors for acute respiratory infections, indoor air pollution
818 from biomass fuel is one of the major contributors to the global burden of disease. Indoor air
819 pollution from the combustion of coal or unprocessed biomass fuels such as wood or waste
820 represents perhaps the largest energy-related source of ill health. In fact, biomass fuels are used
821 to meet the energy needs of half of the world's population. They are often burnt in open fires or

822 inefficient stoves in poorly ventilated houses and give off smoke and chemicals that contribute to
823 diseases of the lungs and heart. Because of the presence of known cancer-causing chemicals in
824 the indoor air, there is also an increased risk of lung cancer. Women are generally responsible
825 for cooking and looking after children in these homes, and they and their children are at the
826 greatest risk.

827 In addition, outdoor air pollution is a serious problem in cities throughout the world,
828 particularly in the megacities of developing countries. WHO estimates that a quarter of the
829 world population is exposed to unhealthy concentrations of air pollutants. Of those exposed,
830 children are particularly at risk due to the immaturity of their respiratory organ systems.
831 Outdoor air pollution is largely and increasingly a consequence of the combustion of fossil fuels
832 for transport, power generation and other human activities. Combustion processes produce a
833 complex mixture of pollutants that comprises both primary emissions, such as diesel soot
834 particles and lead, and the products of atmospheric transformation, such as ozone and sulfate
835 particles formed from the burning of sulfur-containing fuel. The removal of lead from gasoline
836 has been a major improvement to the overall health of millions of people especially children
837 whose developing brains were most affected, as well as to the environment. This was achievable
838 through massive international cooperation and understanding of this issue.

839 Another effect of air pollution is that the ozone layer in the stratosphere above Earth's
840 atmosphere is being damaged by the release of various chemicals used in refrigerants, aerosols,
841 and other equipment, as well as organic solvents. Depletion of the ozone layer is likely to lead to
842 higher levels of ultraviolet radiation reaching the Earth's surface. Certain wavelengths of this
843 radiation increase the incidence of skin cancer and cataracts in humans. (WHO, 1992; WHO,
844 1993)

845 A related issue concerns the build-up of greenhouse gases in the atmosphere, which is
846 believed likely to lead to global warming and a rise in the sea level. The climate changes that
847 would result from global warming could have various direct and indirect effects on the health of
848 humans. For example, heat stress and heat stroke, which can be fatal, may become more
849 common, especially among susceptible groups such as older adults, children, and those with
850 heart problems. The distribution of insects and other organisms that serve as hosts to the
851 microorganisms that cause infectious diseases is likely to be affected. This could lead to changes
852 in disease patterns. For example, malaria might appear in areas where it is currently unknown
853 because of the spread of the mosquito that carries the disease. Global warming could also
854 adversely affect health if changes in rainfall diminished the variety or quantity of crops available,
855 which could lead to or aggravate food shortages. (WHO, 1992; WHO,1993)

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857

858 **Injuries and Violence**

859

860 *Joe Williams was enjoying his vacation abroad with his wife, 10-year old daughter, and*
861 *8-year old son. They were in the second week of their trip, and the large city they were*
862 *visiting was crowded but exciting. Joe was a little nervous about driving in a foreign*
863 *country where he was unsure of local driving customs and regulations, especially in this*
864 *city, where the traffic was so heavy. But he gamely drove out of the hotel parking area*
865 *that evening to search for a restaurant across town that was recommended by his guide*
866 *book. Rush hour traffic was particularly bad that day, and suddenly a car cut in front of*
867 *Joe. He hit the brakes but could not stop in time. The next thing Joe remembered was*

868 *waking up in the hospital with a broken leg. He was relieved to learn from a nurse that*
869 *his wife and the children were not seriously injured. Joe reflected that they had been*
870 *lucky, although the accident sure put a damper on their vacation plans.*

871
872 *Joe was one of millions of people injured in traffic crashes every year. In this age of*
873 *global travel, it is becoming more common for persons to become involved in traffic*
874 *crashes in countries other than their own. Being involved in a crash is traumatic enough*
875 *in itself. Having to deal with police, insurance and the health care system in a foreign*
876 *country makes the situation that more stressful.*

877
878 Injuries are one of the great unrecognized problems for global health. Injuries continue to rank
879 among one of the leading causes of death and disability, regardless of age, sex, or income. The
880 WHO reports that almost 50 percent of the world’s injury mortality occurs in young people aged
881 15-44 years, the most economically productive members of the global population. They write:

882 “Injuries have traditionally been regarded as random, unavoidable “accidents”. Within
883 the last few decades, however, a better understanding of the nature of injuries has
884 changed these old attitudes, and today both unintentional and intentional injuries are
885 viewed as largely preventable events. As a result of this shift in perception, injuries and
886 their health implications have demanded the attention of decision-makers worldwide and
887 injury policy has been firmly placed in the public health arena. Furthermore, the growing
888 acceptance of injuries as a preventable public health problem over the past decade or so
889 has lead to the development of preventative strategies and, consequently, a decrease in
890 the human death toll due to injuries in some countries.”

891

892 World wide, an estimated 1.2 million people are killed in road crashes every year, and as
893 many as 50 million are injured. The WHO estimates that roughly 70 percent of the deaths occur
894 in developing countries. Sixty-five percent of deaths involve pedestrians, and 35 percent of
895 pedestrian deaths involve children. Five issues are directly involved in creating safer roads and
896 better drivers: speed, alcohol, helmets, seat belts, and visibility. In the United States, a person
897 dies in an alcohol-related traffic crash every three minutes. Thousands are injured every year, as
898 well, and all are preventable through responsible behavior. Abroad, Americans and travelers
899 visiting foreign countries are often unaware of the hazards of international road travel and may
900 not understand road regulations, cultures, and conditions.

901 As countries grapple with how to reduce and eliminate such injuries, meaningful
902 dialogues about strategies and models to prevent injury can benefit the global community. In
903 fact, the theme for World Health Day in 2004 was “Road safety is no accident.” The idea behind
904 the slogan is to change the perception that injuries and deaths resulting from crashes are
905 accidental. Indeed, such harm is completely preventable through proper interventions and
906 behavior change.

907 Violence and injuries significantly affect the lives and health of people in all countries.
908 The 2002 WHO *World Report on Violence and Health* noted that each year more than 1.6
909 million people lose their lives to violence. It is the leading cause of death for people aged 15-44
910 years worldwide, accounting for about 14 percent of deaths among males and 7 percent among
911 females. Yet with prevention, the disability and deaths they cause on a daily basis can be greatly
912 reduced. Weapons, terrorists, and other contributors to violence daily cross national borders.
913 Refugees fleeing areas of violence also move across borders, which can sometimes create

914 stresses on the host country if it is not prepared. Inappropriate housing settlements can become
915 epicenters for disease outbreaks and environmental health problems, resulting in further
916 suffering, disease spread, and potential clashes with local populations. Violence contributes to
917 instability of governments and institutions, making the world less safe. People often enter into
918 conflict – nationally or internationally - because they lack resources, including good health.
919 However, health can serve as a common currency among opposing groups and can, in fact,
920 potentially reduce further violent outbreaks. Health diplomacy can help reduce violence and
921 improve health.

922 It is only in recent decades, however, that violence has been treated as public health
923 issues. The CDC, for example, began studying injuries in the 1970s and violence prevention in
924 the 1980s. In fact, Surgeon General Julius Richmond in the 1979 Surgeon General’s Report
925 “Healthy People, stated that the consequence of violent behavior could not be ignored in the
926 effort to improve the nation’s health. This issue was later echoed in 1991, when former Surgeon
927 General C. Everett Koop wrote:

928 “Identifying violence as a public health issue is a relatively new idea....Over the years we
929 have tacitly and, I believe, mistakenly agreed that violence was the exclusive province of
930 the police, the courts, and the penal system....But when we ask them to concentrate more
931 on the prevention of violence and to provide additional services for victims, we may
932 begin to burden the criminal justice system beyond reason. At that point, the professions
933 of medicine, nursing and the health-related social services must come forward and
934 recognize violence as their issue and one that profoundly affects the public health.”

935

936 The 2002 *World Report on Violence and Health* divided the subject into seven topics:
937 child abuse and neglect by caregivers, youth violence, violence by intimate partners, sexual
938 violence, elder abuse, suicide, and collective violence. The report emphasized that in addition to
939 death and disability, violence contributes to a variety of other health consequences, including
940 depression, alcohol and substance abuse, smoking, eating and sleeping disorders, and HIV and
941 other sexually transmitted diseases. It also stressed, however, that violence is preventable.

942 **DID YOU KNOW?** Data from the WHO indicates that more than five million people die each
943 year as a result of violence or injuries.

944 The cost of violence is not only lives lost. In fact, a substantial portion of the cost of
945 violence comes from the impact on victims' health and the related burden on health institutions.
946 Injuries can often result in disability, chronic pain, and drastic changes in lifestyle. Whether or
947 not someone survives a serious injury, and the chances that he or she will suffer a long-term
948 impairment, depends on such factors as prompt and appropriate medical attention, timely
949 transportation to a medical facility, and an adequate health care infrastructure. Furthermore
950 millions are disabled and/or suffer psychological trauma due to violence or injuries. The mental
951 health consequences of violence are just as serious as physical injuries and are often long lasting.

952 Collective violence can result from conflicts between nations and groups, state and group
953 terrorism, gang warfare and other causes. It is estimated that 191 million people, a staggering
954 number, died as a direct or indirect result of conflict in the twentieth century, well over half of
955 them civilians. Death rates due to collective violence are disproportionately high in low and
956 middle-income countries, about six times the rates seen in high-income countries. In addition to
957 the loss of life, large numbers of people suffer physical, often disabling, injuries in violent
958 conflicts each year. Numerous others suffer from various psychological and behavioral

959 problems, and conflicts can also interfere with food production and distribution, resulting in
960 famine.

961 Women are the overwhelming majority of victims of sexual and intimate partner
962 violence. In various surveys, anywhere between 10 percent and 69 percent of women responding
963 have reported that they were physically assaulted at some point by an intimate partner. Physical
964 violence in these relationships is also often accompanied by psychological abuse. Sexual
965 violence is also often linked to intimate partner violence, with the evidence suggesting that
966 almost one in four women experience sexual violence by an intimate partner. Sexual violence
967 affects both the physical health and psychological well-being of its victims, resulting in such
968 problems as unwanted pregnancies, HIV/AIDS, depression, post-traumatic stress disorder, and
969 suicide.

970 Suicide is one of the leading causes of death globally, and was responsible for
971 approximately one death every forty seconds in 2000. Although many more women report
972 attempting suicide than men, men successfully commit suicide about three to four times as often
973 as women. Psychiatric and social problems, as well as substance abuse, are significant risk
974 factors in suicide.

975 The public health community has embraced the concept that violence and injuries are
976 predictable and preventable. They are global in that they can happen to anyone, anywhere, at
977 any time. They are human-made problems amenable to rational analysis and countermeasures.
978 While they involve multiple segments of society, such as the criminal justice system and civil
979 engineering, public health has a major role to play in attacking these problems by developing
980 appropriate surveillance systems and science-based prevention strategies.

981

982 **Health Systems**

983 Central to achieving good health is the presence of a functioning health system. The
984 ideal health system would empower people to obtain convenient, good quality, and affordable
985 health information and services. What are the elements that would make this dream a reality?
986 What exactly is a health system? The *World Health Report 2000* defines health systems as “all
987 the organizations, institutions and resources that are devoted to producing health actions.” The
988 four vital functions of the health system include *service provision, resource generation,*
989 *financing and stewardship.* Different kinds of systems develop or evolve for various political,
990 sociological, or historical reasons. A system can be mixed private and public, like in the United
991 States, where care is provided by private physicians or practitioners and paid for with private
992 health insurance, as well as public financing (Medicare and Medicaid). Or the system could be
993 largely public, as in many other countries, where a Ministry or Department of Health employs
994 physicians, owns hospitals, and assumes a larger burden of the cost of health care.

995 Health systems in all countries, developing and developed, are in need of reform.
996 According to the World Bank, public and private expenditures on health care worldwide were
997 \$1,700 billion, about 8 percent of world economic output. (IOM, 1997) In spite of the increasing
998 costs of health care, large portions of the world’s population have little or no access to affordable
999 health services. Even in wealthy countries such as the United States, the health system is not
1000 working efficiently and effectively in making decent health care available to every citizen.
1001 Many countries are working to reform their health systems in an attempt to reduce costs, improve
1002 the quality of care, and assure universal access to health services.

1003 The Institute of Medicine reports, however, there has been unfortunately relatively little
1004 exchange of information and experience among these countries. In addition, there is little

1005 support for health systems research. A recent review (Travis, et al, 2004) points the scarcity of
1006 health systems research globally, compared to drug development or intervention effectiveness
1007 research. Without the opportunity to learn from others' experiences, policy makers are left with
1008 a great deal of uncertainty regarding the best approaches for strengthening their health systems.
1009 Researchers and policy makers are also confounded about what works in health systems because
1010 of the absence of agreement on how to measure health systems outcomes. There is a general
1011 consensus that a health system's performance should be judged on its ability to achieve improved
1012 access, equity, quality, efficiency and sustainability of the system, but these ideals are hard to
1013 measure. Because of the complexity of this subject, international collaboration in defining health
1014 systems and health system outcome measures, cooperation in health systems research, as well as
1015 exchange of information on what works are high priorities on the list of requirements to achieve
1016 improved global health.

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1020 **Conclusion -**

1021 Disease, food and nutrition, water and air, and injuries and violence have a direct impact
1022 on the health of all people around the globe. The problems are similar, and the solutions are
1023 similar, regardless of the country or population. The issues described in this section are more
1024 than a problem for underdeveloped countries that are far away from the United States. Even the
1025 most seemingly remote public health crisis can make its way to our shores, thanks to trade,
1026 travel, and nature, itself. The world is more interconnected now than it has ever been in history,
1027 and each person has a role to play in addressing global health concerns.

1028 By sharing knowledge and best public health practices broadly, and by working together
1029 across nations, nations are better suited to better address the public health threats that affect all
1030 humans. Working together in health will help break down international barriers that sometimes
1031 even contribute to health problems. In short, by recognizing shared problems, countries can take
1032 steps to address them collaboratively in a way that benefits all.

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1034

1035 **Health Disparities: Poverty and health**

1036 In spite of the remarkable advances in medicine and public health, disparities in global
1037 health status, as revealed by numerous measures, are striking. While one-fifth of the world's
1038 population enjoys an average life expectancy approaching eighty and a life comparatively free of
1039 disability, two-thirds of the world's population, living in the least well-off countries of Africa,
1040 Asia and Latin America, suffer overwhelmingly from the world's burden of illness and
1041 premature death. It has been estimated that the peoples of Sub-Saharan Africa and India together
1042 bore more than 40 percent of the total global burden of disease in 1990, although they make up
1043 only 26 percent of the world's population. (Murray and Lopez, 1996)

1044 Poverty and health are inextricably intertwined. The conditions typically associated with
1045 poverty, such as poor nutrition and lack of access to health care, lead to disease, disability and
1046 death, as well as social instability. On the other hand, disease and poor health is an impediment
1047 to economic progress through decreased labor productivity. It is estimated than more than one-
1048 fifth of the world's population lives in extreme poverty. And the gap between the income of the
1049 richest 20 percent and the poorest 20 percent of the world's population doubled between the
1050 1960s and the 1990. Nonetheless, according to former WHO Director-General Gro Harlem

1051 Brundtland, approximately 90 percent of global health resources are concentrated on 10 percent
1052 of the world's health problems. Those who cannot read, obtain clean water, or avoid
1053 environmentally induced disease, and who are permanently under the threat of physical violence
1054 and the effects of crime - are invariably poor - whatever their income. (IOM, 1997)

1055 Health disparities are by no means limited to developing countries. Great disparities
1056 exist within the populations of industrial nations as well, often based on race and class. In the
1057 United States, African Americans live, on average, five years less than the white population, and
1058 death rates for Hispanics in 2001 were significantly greater than those of the non-Hispanic white
1059 population for the four leading causes of death. Sudden infant death syndrome among American
1060 Indians and Native Alaskans occurs 2.3 times higher than among whites. Asian women have
1061 five times the rate of cervical cancer that white women do. Minorities and low-income
1062 populations have a disproportionate burden of death and disability from a variety of health
1063 conditions. These populations are less in general less likely to have health insurance and access
1064 to good medical care.

1065

1066 *International Health Regulations*

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1068 Another aspect of U.S. health diplomacy has been active participation in the shaping of new
1069 revisions of the International Health Regulations (IHRs). The IHRs provides tools governments
1070 and public health officials can use to control the spread of dangerous diseases. The IHRs,
1071 approved in 1969, were originally designed to help monitor three serious infectious diseases—
1072 cholera, plague, and yellow fever. By the Twenty-First Century, they sorely needed updating.
1073 This need was clear during the SARS outbreak of 2003, and then because of international

1074 concern about pandemic and avian influenza. In May 2005, the WHO approved a new set of
1075 health regulations to manage public health emergencies of international concern, to come into
1076 force by July 2007. The revisions to the IHRs took years of often-difficult negotiations. The
1077 2005 IHRs give expanded temporary authorities to the WHO during public-health emergencies
1078 of international concern. The regulations respect the rights of sovereign States, while setting
1079 forth clear guidelines for open and responsible disease reporting. They carry obligations for
1080 Member States to strengthen prevention activities, report suspect cases and share tissue samples,
1081 as well as to take appropriate safety measures at airports, ports and ground crossings to prevent
1082 and contain the spread of disease, thereby ensuring the maximum security against the
1083 international spread of diseases with minimum interference with world traffic. Global health
1084 would clearly be enhanced if all countries voluntarily adhered immediately to the IHRs.

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Part III: The Way Forward

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This *Surgeon General's Call to Action on Global Health* makes clear that health issues

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cannot be successfully dealt with solely within national boundaries. The agents that cause

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infectious diseases cross national boundaries with people, animals, and products. Water, air and

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other elements that make up our environment cannot be confined within the borders of individual

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nations and the quality of these environmental resources impact on our health in important ways.

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In today's world, the economies of nations are closely interconnected and are significantly

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affected by health conditions. Many health problems and factors that influence health are

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common to multiple, or in some cases all, nations. Knowledge gained in one country about a

1096 particular disease or risk factor is likely to be applicable in other countries as well. It is essential
1097 that nations share information and cooperate in actions related to health.

1098 Eliminating health disparities, both among and within countries, is predicated on
1099 increasing health literacy. Even the seemingly simple things that people can do to stay healthy
1100 and safe, such as getting regular medical check-ups and eating healthy foods, can be struggles for
1101 many families. Yet, people around the globe, including highly educated individuals, have
1102 trouble understanding basic health information. Health literacy is the ability of an individual to
1103 access, understand, and use health-related information and services to make appropriate health
1104 decisions. It is estimated that in the United States alone, low health literacy adds as much as \$58
1105 billion per year to health care costs. Low health literacy is a threat to the health and well-being
1106 of all people and to the health and well-being of health care systems. Basic health education can
1107 be communicated through schools, family members, health professionals, lay community health
1108 workers, public and private institutions, and the media. Everyone has a role to play.

1109 No one nation can independently improve health systems and health outcomes across the
1110 world. There is little question that the people of the United States will not only join with other
1111 nations help to shape the future of global health, but will offer American medical and technical
1112 expertise and economic support at the same time. A public that is literate and knowledgeable
1113 about health and works as private individuals to reduce its own risk factors and those of families
1114 is highly desirable. It is equally important that experts respectfully and effectively communicate
1115 concerning health as a regular matter, and redouble their efforts in times of crisis or impending
1116 crisis. Although great progress has been made on vaccines, drugs, improved sanitation, control
1117 of disease-transmitting insects, and effective prevention to reduce the threat of many once
1118 damaging or lethal diseases, such as HIV/AIDS, polio, malaria, smallpox, diphtheria, typhoid

1119 fever, rubella and measles in the United States, and in some cases, worldwide, the work that
1120 remains overshadows what has been achieved. Biomedical research and concepts of global
1121 medicine in medical education as well as scientific exchanges need continual support.

1122 Countries can learn from one another in their struggle to protect and improve their health
1123 of their populations. This exchange of information is a two-way street. Although it is true that
1124 developing countries can benefit from knowledge and use of the advanced health technologies
1125 available in industrialized nations, there is also much that the latter can learn from the former.
1126 For example, disadvantaged groups in the United States share similar health risks with resource
1127 poor nations, such as tuberculosis, micronutrient deficiencies and peri-natal infections. Thus,
1128 there are lessons to be learned domestically from research conducted in low- and middle-income
1129 nations. For example, landmark studies conducted in Tanzania demonstrate that unless drug
1130 treatment for tuberculosis is properly supervised tuberculosis rapidly becomes resistant to
1131 available drugs. This finding has been applied in community health programs in metropolitan
1132 New York and other cities where tuberculosis is a public health problem. Moreover, the most
1133 daunting problem facing national health care and national economies in the 21st century will be
1134 the increasing public share of today's health care bill, which in the United States is projected to
1135 grow to a 1.6 trillion to a 2.3 trillion in 2015. To guide health care reform, the United States and
1136 other nations can benefit from experiences of other countries which have achieved high health
1137 status and reduced health care costs in such fields as primary and ambulatory care, and other
1138 areas.

1139 Governments and non-governmental organizations around the world are already engaged
1140 in many programs that contribute to global health. In the United States, for example, President
1141 Bush in 2003 announced his Emergency Plan for AIDS Relief, committing \$15 billion over five

1142 years for the hardest hit countries, including continuing bilateral support for more than 120
1143 countries and enhanced focus in 15 countries in Africa, the Caribbean and Asia. The
1144 Department of Health and Human Services (HHS) draws upon the technical expertise found in
1145 its agencies, including the Centers for Disease Control and Prevention (CDC), the National
1146 Institutes of Health (NIH), and the FDA, to further global health goals in a number of ways.
1147 Through the Centers for Disease Control and Prevention, for example, the Department provides
1148 substantial funding and technical support to the WHO Global Polio Eradication Initiative. HHS
1149 is also actively supporting health reconstruction in war-torn countries, such as partnering in the
1150 establishment of women's teaching clinics in Afghanistan. Through the National Cancer
1151 Institute, HHS is partnering in the establishment of the King Hussein Cancer Center in Jordan as
1152 a regional cancer treatment facility. HHS works internationally across a broad range of health
1153 issues confronting our nation and the world.

1154 Non-governmental organizations (NGOs) are becoming increasingly important in
1155 implementing global health programs. (Gellert, 1996) It is estimated that NGOs, many of them
1156 quite small, provide approximately 20 percent of health aid to developing countries. (IMVA
1157 website) Various American NGOs are involved in global health activities. Global Links, for
1158 example, recovers unused medical supplies, equipment and furnishings from American hospitals
1159 and makes them available to hospitals and clinics serving the poor in developing countries.
1160 (Global Links website) Satellife develops solutions, through innovative applications of
1161 information and communications technology, to fulfill the information needs of health
1162 professionals working in communities around the world where medical journals and the internet
1163 are not readily available or affordable. The Global Health Council identifies important world
1164 health problems and reports on them to the American public, international and domestic

1165 government agencies, academia, and the global health community in an effort to make global
1166 health a priority for everyone.

1167 Governments and NGOs around the world are contributing to the advancement of global
1168 health. Two examples of international health activities of the French government, for example,
1169 are the provision of support for malaria research and training in Africa through its Institut de
1170 Recherché pour le Développement and a contribution of over 5 million dollars in 2003 to
1171 strengthen the battle against HIV/AIDS in Mozambique. (IRD website; Multilateral Initiative on
1172 Malaria website; Global Health Council website) The Japanese government has invested about
1173 118 million dollars to provide grants and technical cooperation to Vietnam's health sector since
1174 1991. These projects cover preventive medicine as well as treatment. With respect to NGOs,
1175 examples of their contributions include the efforts of United Kingdom-based Healthlink
1176 Worldwide to improve the health of disadvantaged and vulnerable communities in developing
1177 countries through the use of health communications and support for advocacy initiatives, and the
1178 program of the Africa Foundation (based in South Africa) to provide access to drinking water to
1179 rural communities in Africa. (Healthlink website; Africa Foundation website)

1180 In addition to governments and organizations of individual countries, various
1181 international bodies are also involved with global health. Most prominent among these is the
1182 World Health Organization (WHO) and its various regional offices, such as the Pan American
1183 Health Organization (PAHO), which is the specialized health agency of the United Nations
1184 (UN). WHO is a collaborative effort of the nations of the world, and is governed by 192 member
1185 states through the World Health Assembly. WHO is involved in more global health activities, on
1186 its own or in cooperation with governments, NGOs, and others, than can be enumerated here.
1187 Just to mention a few examples, it organizes vaccination campaigns and emergency relief health

1188 services, collects and publishes health statistics and reports, and develops international
1189 agreements on health issues such as tobacco control. Another international body involved with
1190 health is the United Nations Children’s Fund (UNICEF), which operates programs in areas such
1191 as vaccination, nutrition and HIV/AIDS.

1192 One of the global health efforts sponsored by United Nations was the development of the
1193 internationally agreed upon goals contained within the Millenium Declaration signed by 189
1194 countries (including the United States) in 2000 (commonly referred to as the Millenium
1195 Development Goals). These goals include targets for improving health in a number of areas,
1196 such as maternal health, child mortality, environmental sanitation and HIV/AIDS. The
1197 Declaration calls for the achievement of its goals by 2015.

1198 Academic institutions (especially schools of medicine, nursing and public health),
1199 corporations (especially in the health sector), and other institutions have also played, and must
1200 continue to play, a vital role in global health. The efforts on the part of all of these groups have
1201 led to significant improvements in health on a global basis in recent decades. Smallpox was
1202 eliminated in the 1970s, and polio is close to being eradicated worldwide.

1203 There are many other examples that could be cited, but a common element in all of these
1204 achievements has been a highly effective social mobilization. For example, the Bellagio Study
1205 Group on Child Survival Study noted that: “The child survival revolution of the 1980s was a
1206 worldwide movement that reached beyond the public health community to mobilize parents,
1207 teachers, village chiefs, rock stars, prominent sports people, and presidents. The actions needed
1208 were simple, clear and communicated consistently through all available channels.”

1209 The WHO has urged that all medical education include an international component. This
1210 would strengthen skills in treating patients in places with no hospitals and little health care, and

1211 include more knowledge of diseases endemic in other countries. A time spent in a health-care
1212 system in another country and other forms of exchange programs would broaden the skills of
1213 these new internationally skilled health-care workers. The professional visits of foreign
1214 scientists and engineers and the training of highly qualified foreign students are important for
1215 maintaining the vitality and quality of the U.S. research enterprise. This research, in turn,
1216 underlies national security and the health and welfare of both our economy and society. It is
1217 clearly in our national interest to help developing countries fight diseases such as AIDS, improve
1218 their agricultural production, establish new industries, and generally raise their standard of
1219 living. There is no better way to provide that help than to train young people from such countries
1220 to become broadly competent in relevant fields of science and technology.

1221 Thus there is room for optimism when it comes to improving global health. However, it
1222 will take the kind of social mobilization noted above, involving people from all walks of life, to
1223 achieve the desired outcomes. In addition, strong and unified leadership will be needed at the
1224 international, national and community level. The following factors are among those that will be
1225 needed for success in the endeavor to improve global health:

- 1226 • research and evidence-based decisions;
- 1227 • an educated and informed public;
- 1228 • broad partnerships between governments, NGOs and development agencies;
- 1229 • recognition of the role of women;
- 1230 • systems of public health that promote equity and efficiency;
- 1231 • complementary steps in strengthening education;
- 1232 • adequate and targeted human and financial capital; and
- 1233 • awareness and commitment to action by all sectors of society.

1234

1235 The understanding and support of the American people in improving global health and a
1236 sure knowledge of its relevance to their daily lives is of vital importance. An alert and informed
1237 public will help in safeguarding families and communities and in lending a hand elsewhere.
1238 Some concepts are familiar, such as the provision of aid during humanitarian disasters. Working
1239 with the great international health agencies will help us plan and work effectively with other
1240 nations and regions of the world. Health diplomacy, while not new, is increasingly important to
1241 improving global health, increasing the stability and security of our nation as well as benefiting
1242 others. Understanding the possibility of global disease spread helps each one of us to be alert to
1243 the health of the rest of the world. Health diplomacy extends the benefits of America's medical
1244 research, among the best gifts to the world, to improve health and increase world security.

1245 But beware the simple answer. The cure of one disease, no matter how deadly, is not the
1246 answer. Even a cure, an absolute eradication of HIV/AIDS, will not end the need for attention to
1247 better global health. Vigilance, collaboration and coordination are key. Preparing for an avian
1248 flu pandemic, whether it appears this year or the next, teaches many lessons and raises serious
1249 questions about planning. It will undoubtedly improve the ability to respond to other health
1250 emergencies, whether manmade or natural in origin. Improving the health of the peoples of the
1251 world demands a steady commitment of resources, minds and souls. To that end, the
1252 participation in and awareness of all Americans in a broad and purposeful global health endeavor
1253 will serve us and future generations.

1254 We share one earth, regardless of our place of birth. Public health, now more than ever, is
1255 global health. We must recognize that, as human beings, we are all connected.

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CALL TO ACTION:

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1260 There are steps that can be taken by individuals, institutions and governments to advance global
1261 health. The Surgeon General has identified as priorities the following activities for immediate
1262 action by the American public, health and related professionals, government, the private sector
1263 and the media to improve the situation regarding global health. With the cooperation of all of
1264 these segments of society, Americans can make a substantial contribution to the goal of
1265 improving global health.

1266

1267 **A. American Public**

1268 The American public must become better informed on issues of global health. We suggest that
1269 Americans as individuals and in groups:

- 1270 ○ Support increased U.S. investment in global health;
- 1271 ○ Encourage policy makers to make global health initiatives a higher priority;
- 1272 ○ Support non-governmental organizations involved in global health through donation of time
1273 or cash;
- 1274 ○ Promote public awareness of what global health is and why it is important for the country;
- 1275 ○ Improve their own health literacy as a means to improve their health and the health of the
1276 world around them;
- 1277 ○ Practice basic hygiene, such as hand washing to prevent illness and staying home when sick
1278 to prevent transmitting your illness to others;
- 1279 ○ Explore and promote the infusion of global health awareness in the education system; and

1280 ○ Work to decrease stigmatization of individuals and nations with respect to particular diseases
1281 or other health problems.

1282

1283 **B. Professionals**

1284 Health workers and other professionals involved with health must become more
1285 knowledgeable and proactive with respect to global health activities and education. We suggest
1286 that professionals:

1287 ○ Work to incorporate global health as an integral part of the curriculum of public health
1288 education;

1289 ○ Encourage their professional associations to become better informed about changing
1290 patterns of disease associated with globalization;

1291 ○ Support mid-level professionals and community health workers to become
1292 knowledgeable about global health and integrate a global approach in their work;

1293 ○ Develop and implement research and demonstration programs around specific global
1294 public health issues;

1295 ○ Encourage partnerships across disciplines and geographical borders;

1296 ○ Support time-limited projects through grant funding;

1297 ○ Promote and sustain projects that work, and share “best-practices” and evidence-based
1298 strategies that could be utilized globally;

1299 ○ Promote health literacy as means to improve health; and

1300 ○ Promote policies, activities, and partnerships that decrease “brain drain”

1301

1302

1303 **C. Government**

1304 Governments at all levels can have a major impact on global health through their policies and
1305 actions. Specifically we suggest the U.S. Federal Government:

- 1306 ○ Review current global health activities and develop a strategic approach for the U.S.
1307 Government in global health;
- 1308 ○ Consider expanding assistance to improve the health of people around the world as an
1309 element of U.S. foreign policy;
- 1310 ○ Consider the health of people around the world as an element of U.S. foreign policy;
- 1311 ○ Respect the value of multilateral partnerships for health, as well as enhance effective
1312 collaboration between governments to promote global health;
- 1313 ○ Promote cooperation and exchange in health of states and cities with global partners;
- 1314 ○ Adhere to the revised International Health Regulations (2005) as soon as possible; and
- 1315 ○ Ratify the Framework Convention on Tobacco Control.

1316

1317 **D. Private Sector**

1318 Commercial enterprises and non-profit institutions have an important role to play with respect to
1319 promoting global health. We suggest that the private sector undertake the following activities:

- 1320 ○ Prioritize the development of products which respond to major global health needs;
- 1321 ○ Promote corporate social responsibility and measures that improve public health;
- 1322 ○ Explore and develop ways to improve health in the settings/countries where they are active,
1323 not just for their own workers;
- 1324 ○ Increase the level of partnership designed to promote global health; and
- 1325 ○ Work together, particularly with non-governmental organizations, to mobilize public support

1326 for global health.

1327

1328 **E. Media**

1329 The media has a significant influence on the thinking of the public, government officials,
1330 industry executives, and all Americans. Therefore it can make a substantial contribution to the
1331 area of global health. We suggest the media:

1332 ○ Work to expand health literacy and recognize that it can be used as tool to extend health
1333 to the world;

1334 ○ Promote awareness of global health through media campaigns, programming and other
1335 outlets;

1336 ○ Provide professional education for media professionals on global health;

1337 ○ Foster international media collaboration to combat myths (such as the notion that polio
1338 vaccination causes sterilization);

1339 ○ Encourage development of educational materials for medical professional dialog with
1340 international clients;

1341 ○ Engage media personalities in promotion of global health;

1342 ○ Encourage global media to integrate global health into content and advertising; and

1343 ○ Encourage global media industries to partner/mentor/support developing country media

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