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GLOBAL HEALTH:

RIGHTS AND RESPONSIBILITIES IN THE TWENTY-FIRST CENTURY

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Introduction

Since 1977, the annual UNIS-UN conference has given hundreds of students the opportunity to assemble every year in the General Assembly Hall of the United Nations Headquarters in New York City to discuss issues of contemporary global significance. This year's conference topic, *Global Health: Rights and Responsibilities in the 21st Century*, is a subject of paramount importance, especially for the youth of today's world.

This year's theme seeks to address the ways in which health is affected by current trends, taking into consideration most notably the impact of the environment, education, globalization, and healthcare on the condition of the world's population. From the availability of vaccines to the contamination of drinking water, global health promises to shape the 21st century.

The articles compiled in this working paper, written entirely by members of the UNIS-UN Committee, examine health issues and their varying causes and consequences in an attempt to provide participants with a clear idea of the extent to which health-related matters directly and indirectly influence their lives.

Regrettably, due to the broad scope of the topic, not all areas of the matter can be fully addressed or developed. It is our hope that by bringing to light many of the critical issues through a close examination of the current state of modern world health and the factors shown to influence it, the conference's participants will gain a better understanding of their personal responsibility towards promoting global well-being, as well as an awareness of the effects today's actions will have on future generations.

Fifty Health Facts

1. It is estimated that 1 billion people in the world suffer from chronic hunger and malnutrition, about 100 times as many as those who actually die from it each year.
2. Every 7 heartbeats someone is infected with HIV.
3. About 24,000 people die every day from hunger or hunger-related illness. Three-fourths of these deaths are of children under the age of 5.
4. 900 million people worldwide are affected by Hookworms (intestinal parasites which grow up to 1 cm long and 4 mm wide and typically enter the skin through the soles of feet).
5. 90% of human cancers are caused by chemical carcinogens in the environment.
6. Over 300 million women in the developing world currently suffer from short or long term illness because of pregnancy or childbirth.
7. An estimated 17 million people die of cardiovascular diseases, particularly heart attacks and strokes, every year. A substantial number of these deaths can be attributed to tobacco smoking, which increases the risk of dying from coronary heart disease and cerebro-vascular disease nearly threefold.
8. Some 16 million people worldwide are currently blind as a result of cataracts; of these, WHO estimates that as many as 20% may be due to UV radiation exposure.
9. An estimated 30 million people world-wide had diabetes in 1985. By 1995, this number had shot up to 135 million. The latest estimate (year 2000) was 177 million. This will increase to at least 300 million by 2025. Diabetes is expected to become one of the world's main disablers and killers within the next twenty-five years.
10. Studies in India estimate that for a low-income Indian family supporting an adult with diabetes, as much as 25% of family income may be devoted to caring for the person. For families in the USA with a child who has diabetes, the corresponding figure is 10%.
11. 2.2 million people in developing countries, most of them children, die every year from diseases associated with lack of access to safe drinking water, inadequate sanitation, and poor hygiene.
12. Diarrhea alone kills 1.8 million children under 5 every year.
13. A child dies every 15 seconds from water-related diseases. This amounts to nearly 6000 deaths, or the equivalent of 20 jumbo jets crashing, every day.
14. 2.6 billion people in the world do not have access to adequate sanitation, this is roughly two-fifths of the world's population.
15. There will be 40 million AIDS orphans in Africa by 2010.

16. It would cost an estimated additional 16 billion US dollars each year to reach the United Nations' Millennium Development Goal of halving the current number of people without access to safe water and sanitation. This is less than what North Americans and Europeans spend on pet food in a single year.
17. The number of people living in water-stressed countries is projected to climb from 470 million to 3 billion by 2025.
18. Every year, some 12 million children in developing countries die before they reach their fifth birthday, many during the first year of life. Seven out of ten of these deaths are due to acute respiratory disease infections, diarrhea, measles, malaria, malnutrition, or some combination of these conditions.
19. 50 million people of all ages around the world suffer from epilepsy.
20. It is estimated that the overall prevalence of mental retardation is between 1% and 3%. It is more common in developing countries because of higher incidence of injuries and deprivation of oxygen at birth and early childhood brain infections, all of which may cause retardation.
21. An estimated 5 million people worldwide inject illicit drugs.
22. Over the past decade, 76.2% of the cases of plague (bubonic, septicaemic and pneumonic) and 81.8% of the deaths caused by plague were reported from Africa.
23. In developing countries, the most counterfeited medicines are those used to treat life-threatening conditions such as malaria, tuberculosis, and HIV/AIDS.
24. It is estimated that up to 25% of the medicines consumed in poor countries are counterfeit or substandard.
25. As many as nine out of ten patients reporting illness to their primary healthcare provider receive an injection, of which over 70% are unnecessary or could be given orally.
26. Of the 2 billion people who have been infected with the hepatitis B virus (HBV), more than 350 million have chronic (lifelong) infections.
27. Every second someone in the world is newly infected with tuberculosis bacilli.
28. Globally, an estimated 170 million persons are chronically infected with Hepatitis C, and 3 to 4 million persons are newly infected each year.
29. The average person in the developing world uses 10 litres of water every day for their drinking, washing and cooking.
30. There are 5,500 funerals per day in sub-Saharan Africa because of AIDS.
31. Malaria causes more than 300 million acute illnesses and over one million deaths annually.
32. Trachoma, a common and easily-spread eye infection, has caused blindness in over 6 million people in the developing world.
33. Typhoid fever affects 17 million people worldwide every year, with approximately 600,000 deaths.

34. More than a billion people still live on less than 1 US dollar a day.
35. More than 300,000 youths under the age of 18 are currently participating in armed conflicts around the world.
36. 250 million children between the ages of 5 and 14 work in developing countries. Of these, 50-60 million children work in hazardous circumstances
37. An estimated one million children enter prostitution every year.
38. About 1 of every 3 women has been abused in her lifetime. Usually, the abuser is a member of her own family or someone known to her. Domestic violence is the major cause of death and disability for women aged 16 to 44 and accounts for more death and ill-health than cancer or traffic accidents.
39. Half of all teenagers who are currently smoking will die from diseases caused by tobacco if they continue to smoke. One quarter will die after 70 years of age and one quarter before, with those dying before 70 losing on average 21 years of life.
40. The richest 20% of the world's population consume 86% of the world's resources while the poorest 80% consume just 14%.
41. While a baby girl born in Japan today can expect to live for about 85 years, a girl born at the same moment in Sierra Leone has a life expectancy of 36 years.
42. Areas hit by the Asian tsunami disaster could take up to 10 years to recover. The final death toll is expected to surpass 280,000 deaths.
43. When the epidemic first emerged in the West more than 20 years ago, AIDS was circulating primarily among young gay men. Today, a record 39.4 million people, nearly half of them women, are infected with HIV.
44. Breast feeding accounts for as much as half of new infections among children in Africa.
45. Although anti-depressants help thousands of juveniles, late studies show that they actually increase suicidal thoughts and behavior in 4% of cases.
46. More and more studies are proving that the best way to prevent allergies is to expose children to the allergens that cause them.
47. 44% of patients who take over-the-counter medicine for pain take more than the recommended dose.
48. Between 100 and 150 million people around the globe—roughly the equivalent of the population of the Russian Federation—suffer from asthma, and this number is rising.
49. Some 2500 million people—two-fifths of the world's population—are now at risk from Dengue, a mosquito-borne infection.
50. Globally, some 120 million people are estimated to have disabling hearing difficulties. More than 161 million people were visually impaired, of whom 124 million people had low vision and 37 million were blind.

Diabetes

Diabetes is a growing health threat in the world today. It is a disease characterized by limited or nonexistent production of insulin, a hormone that allows the body to use glucose as a source of energy and thus regulates the body's blood sugar levels. The disease can also be a result of insulin resistance, in which case the body's cells do not respond to insulin as they should. Since a body with low insulin or insulin resistance cannot absorb glucose from the bloodstream, glucose levels in the body rise and eventually, glucose ends up in the urine. This causes diabetics to urinate frequently and also to be very thirsty. Other symptoms of the disease are increased irritability, fatigue, nausea, weight loss, blurred vision, repeated infections, and numbness in hands and feet.

There are two types of diabetes, appropriately called Type 1 and Type 2. Type 1 is also known as juvenile-onset diabetes or insulin-dependent diabetes mellitus (IDDM) and typically occurs in those under twenty. Type 1 diabetics' bodies produce very little, if any, insulin, because their immune systems destroy insulin-producing beta cells. When Type 1 diabetes goes untreated, the body breaks down stores of fat to compensate for the lack of fuel, normally derived from glucose. The result is the release of ketone bodies which affect cellular respiration, the energy-making process which takes place in cells.

Type 2 diabetes, also known as non-insulin-dependent diabetes mellitus (NIDDM) and adult-onset diabetes, occurs mainly in people over the age of forty-five and is much more common than Type 1. Type 2 diabetics' cells can no longer use insulin.

Diabetes can be detected through tests which indicate an individual's blood sugar levels. New diagnostic procedures are being developed which may aid in the early detection of diabetes, hence reducing the risk of this disease. Treatment for the disease consists largely of controlling glucose intake, accomplished through a well-monitored diet coupled with medication and physical activity. Type 1 diabetes also requires regular injections of insulin, often many times a day, to provide the body with adequate amounts of the



chemical. Glucose levels are often measured in a drop of blood obtained through the pricking of a fingertip. If too much insulin is injected, hypoglycemia occurs. Meaning that blood sugar levels are too low. This can be offset by consuming glucose.

Adults over forty-five are most likely to have diabetes. Other people at high risk for diabetes are those who are overweight, those who are not physically active, those who have high blood pressure or cholesterol, those who have a history of diabetes in their families, and those who are of African, Native American, or Hispanic descent. The disease is also more common in women than in men.

Currently, there is no cure for diabetes and the exact cause of the disease is being investigated. Twenty genes which play a role in Type 1 diabetes have been identified and are being studied.

In the United States, nearly 200,000 people die annually from diabetes, and three-quarters of a million are diagnosed. The breadth of the disorder is even more striking, as the condition is expected to affect nearly thirty million people in the United States by 2030. Although the number of new diagnoses in Egypt and the Philippines will increase, India, China, and the US will continue to possess the largest number of sufferers.

Globalization will cause fast food and other unhealthy habits to become more pervasive in societies in both the developed and developing world. The resulting increase in the prevalence of Type 2 diabetes will undoubtedly have a negative effect on the populations of these developing countries. With global programs for education, the promotion of healthy lifestyles, and treatment, the incidence of Types 1 and 2 diabetes in the world can be greatly reduced.

Cancer

Cancer is one of the leading causes of death in today's world, accountable for six million deaths each year. In the United States, cancer is the second most-prevalent cause of death, and an estimated fifty percent of all men and a third of all women will have cancer at some point in their lives.

Normal cells follow a regular life cycle, growing, dividing, and finally dying. Cancerous cells, however, grow and divide continuously, outliving healthy cells, generating more cancerous cells and replacing normal tissue. The solid mass of abnormal cells formed by most cancers is known as a tumor. An example of this type of cancer is leukemia. The cancers that do not form tumors circulate through the blood stream, growing in the body's tissues. A tumor can be either benign (non-cancerous) or malignant (cancerous)—this is determined through a biopsy, during which a tissue sample is removed and analyzed under a microscope. Cancerous growth is classified into four stages: Stage I cancers are those that have not spread (metastasized) at all and are thus most curable. Stages II and III are generally confined to one area but have developed more than Stage I cancers. Stage IV cancers have already metastasized and are more difficult to cure because they involve tissues in different regions of the body.

Over one hundred cancers can develop in different organs in the human body. Cancers are named after the part of the body, type of tissue, and cell-variety in which they originate. When a cancer from one part of the body spreads to another area, it is called a "metastatic" cancer, but keeps the name of its original organ (for instance, lung cancer that spreads to the breast is

called metastatic lung cancer, not breast cancer).

While genetically-inherited cancer cannot be avoided, the causes of cancer are well enough known to prevent roughly one-third of all cancers. Cancer is caused by the inheritance of damaged DNA or the damage of DNA through exposure to harmful substances. It is commonly known that by avoiding exposure to carcinogens, by eating healthy foods and quitting smoking, people can avoid developing cancer.

There are a variety of treatments for cancer; the sooner the cancer is discovered and treatment begins, the more likely it is that the patient will recover completely. Treatments include surgery, radiation therapy, chemotherapy, hormone therapy and immunotherapy.



Surgery is used on less-advanced tumors; in this process the tumor and some of the healthy tissue surrounding it are removed. Radiation therapy involves the use of radiation to kill cancerous cells by damaging their DNA. This treatment has many side effects, as the rays also damage healthy cells. In chemotherapy, numerous cancer-killing drugs (often in combination) are introduced into the bloodstream and in this way are transported to the organs to which the cancer has spread. The patient often experiences severe side effects from chemotherapy.

Hormone therapy is used to combat tumors relying on hormones to grow by blocking these hormones through various means. The final treatment method, immunotherapy, makes use of the immune system and naturally occurring antibodies to combat cancer and reduce or eliminate side effects.

The number of people expected to have cancer in their lifetimes is on the rise. It is only with the removal of carcinogens from our environment, the advancement of available treatments, and research to develop a better understanding of the disease that these figures can be decreased.

Stem-Cell Research

One of the most controversial issues facing researchers in the scientific community today is that of the ethics of stem cell research. This article examines the various sides of the issue as they exist in the United States today.

Stem cells are immature, unspecialized cells that differentiate and generate into multiple cell types to renew and replace worn-out cells or, in a female, to create new life. What distinguishes stem cells so completely from regular cells is that they remain inactive until they receive signals which direct them to develop and proliferate into one of over 220 possible cell types (Goldstein). Scientists contend that with a better understanding of stem cells and how they develop, some of the most devastating and harmful health conditions could possibly be cured.

Scientists working with stem cells are currently using different chemical and culture mediums to grow different stem cells that will create muscle, nerve, and pancreatic cells, possibly leading to cures for diseases such as Alzheimer's, Parkinson's, and diabetes, and could also be used to test the effects of new drugs, thus avoiding the use of animals or humans.

Despite debate on the subject, there have been many instances in which the use of stem cells within the human body cured or improved cases of cancer, damage from strokes, heart damage, and anemia.

However, regardless the potential benefits of stem cell research, there are many moral

issues yet to be resolved. The process of obtaining human embryonic stem cells has stimulated extensive debate among politicians, scientists, religious leaders, and the general public. The question of whether it is moral to use embryonic stem cells for medical research in the future has led to the establishment of two parties—those in favor and those against. Pro-life advocates believe that the use of embryos is depriving organisms of “an opportunity to be born,” as the Family Research Council holds. Scientists such as Dr. Wise Young, who is responsible for organizing the New Jersey Stem Cell Research Institute, believe that research institutes should “study stem cells from all sources, embryonic, fetal, neonatal and adult, in order to learn how to make stem cells from any cell.” (Verbatim 1: Goldstein, Verbatim 2: Hedges) The primary question being addressed is: do the benefits of scientific research and discovery outweigh the importance of religious values?



Typically, once stem cells are obtained from a developing embryo, the embryo must be discarded. This concept brings us back to the battle of abortion. Anti-abortionists believe that if abortion were prohibited, the third option of giving up embryos for medical research (in addition to keeping the child or destroying the embryo) would

Counterfeit Drugs

not be accepted. Those who oppose the use of embryonic stem cells from aborted fetuses believe that this procedure is the equivalent of taking a human life. Often the idea of only using existing embryonic and adult stem cell lines for research (as opposed to using those from an aborted fetus) is more accepted. While some pro-life advocates say that the use of existing embryonic stem lines is acceptable for research because the embryos have already been discarded, religious activists state that it is still a matter of profiting from the destruction of a possible human life. Republican Jim Ramstad supports stem cell research: "With my mother totally debilitated by Alzheimer's disease, a first cousin who died from diabetes and several close friends suffering from Parkinson's disease and spinal cord injuries, I plead with you to give hope to my loved ones and one hundred million other Americans suffering from cruel, deadly diseases." (CBS News) Contrastingly, Pope John Paul II voices the thoughts of the religious activists: "A free and virtuous society, which America aspires to be, must reject practices that devalue and violate human life at any stage from conception to natural death." (CBS News)

An alternate solution more likely to appease the pro-life supporters is the use of only adult stem cell lines; were this undertaken, stem cell research in the United States would receive an increase in federal funding by the Bush Administration. These adult cells are taken from bone marrow and brain tissue, and some experiments have proven that they have almost as much potential as embryonic stem cells.

Stem cells hold great promise in the scientific progress of our world. Although their potential use has led to political upheaval, scientists continue to experiment with stem cells in an effort to reduce the debilitating effects of disease and tissue damage. Research concerning stem cells has brought both hope and rejection, dividing us into two groups—those who consider obtaining and experimenting with stem cells intolerable, and those who see the possibility of a world in which complex medical problems will vanish. The source of this turmoil lies in the tiny cells growing in petri dishes in laboratories worldwide.

A shortage of prescription drugs has posed a major problem in the United States in past years. Though this problem still exists today, a new complication has arisen: the importation of counterfeit prescription drugs. To counteract this problem, the United States government established the Prescription Drug Marketing Act (PDMA) in 1988, with the intent of preventing poor quality, ineffective, or counterfeit drugs from reaching consumers. This law states that it is "illegal for anyone other than the drug's original manufacturer to re-import a prescription drug into the U.S. that was manufactured in the U.S." The PDMA was originally created after two serious incidents occurred in the United States. The first incident was when two million ineffective *Ovulen 21* birth control pills—which had been manufactured in Panama—were distributed. The second incident occurred when a counterfeit version of the antibiotic *Celor* was sold throughout the nation. However, recognizing counterfeit drug manufacturers is becoming an increasing problem, as those who produce them utilize more and more sophisticated techniques.

The U.S. Food and Drug administration recently shut down several Internet sites that were claiming they were selling drugs that had been approved by the FDA; this claim was not valid. The Internet is now a tool which drug counterfeiters exploit in order to further their illegal and often dangerous endeavors. And they are successful; new statistics show that the importation of these foreign counterfeit drugs is gradually increasing, posing a potentially serious threat to the unknowing purchasers. To combat this problem the FDA created a force, known as the Counterfeit Drug Tasking Force. Based on observations received by security experts, Federal and state law officials, technology developers, manufacturers, retailers and consumers, a report was issued outlining the steps needed to be taken to prevent the purchase of unsafe, ineffective, and fake drugs. This report came out very recently (on February 18, 2004) and provides strategies that suggest improvements for strengthening the nation's drug safety regulations.

New technologies are being developed to combat the growing counterfeiting problems. One of the many innovations is “track and trace” technology, which makes the verification of drugs by officials easier and which also prevents the drugs’ packaging from being tampered with. The FDA commented on this technology: “the adoption and common use of reliable track and trace technology is feasible in 2007, and would help secure the integrity of the drug supply chain by providing an accurate drug “pedigree,” which is a secure record documenting the drug was manufactured and distributed under safe and secure conditions.” At the moment, another technology known as Radio Frequency Identity Tagging is being developed. This advancement would be perhaps the most viable and practical way for tracing prescription drug packages and would allow manufacturers, wholesalers and retailers to follow a package from the moment it is packed to the moment it is distributed. The Radio Frequency Identity would also make the counterfeiting of drugs extremely complicated, expensive, and theoretically unprofitable, and would possibly one day end the counterfeit drug black-market.

Already in place are several different strategies used to identify different counterfeit

drugs, or verify whether or not the drugs are authentic. These include color shifting inks, holograms, fingerprints, and taggants, or chemical markers embedded into a drug or the container label. The FDA intends to create a manual of instructions outlining the procedure for identifying specific drugs.

However, there is often little the FDA can do when Americans purchase these unapproved drugs directly from the nations. A prime example is Canada, which shares borders to the north of the United States; it is easy for Americans to buy their drugs at much more favorable prices. However, most of these drugs are not approved by the FDA and are illegal to import into the United States.

The problem of drug counterfeiting is not limited to the U.S. In fact, the situation in the US is one of the best in the world due to very explicit and stringently enforced laws. Unfortunately, in other less-developed nations with no regulations in place or no way to enforce these regulations, counterfeit drugs often outnumber actual prescription drugs.

The Organ Black Market

Since the early 1990’s, organ transplants have become more and more frequent. However, each year many of those waiting for an organ die because one is not found. This is the case especially in the industrialized nations where technology is at a level to allow such transplants to occur with relatively little risk.

There are laws in place around the world for the regulation of organ donations and transplants. The current system is one which deems that those in most need of an organ are the ones who get them first; wealth and social class are excluded from the decision.

Because the number of organ donors is far less than the number of people needing the organs, and because the receipt of an organ can mean the difference between life and death for patients suffering from kidney failure or another disease, there is a black market for organ donation. Contrary to popular myths, this black market does not thrive by kidnapping children and adults



and then returning them minus a kidney, liver, or another organ. The organ black market consists of middle men who set up matches between willing sellers and willing buyers. Typically the sellers are those who are poor or in debt. The price of an organ for the buyer can surpass \$100,000, though the seller typically gets only \$3,000 to \$10,000.



The organ black market has been denounced by the World Health Organization (WHO) and many governments that say it gives unfair advantages to the rich and well-connected. However, not all governments concur.

According to Amnesty International and various news articles, China has had more executions than the rest of the world combined. At first look this may simply reflect a harsh criminal system, however it is more than that. Chinese prisoners are often given a single shot to the head for execution to allow for the preservation of their organs. Often, a team of doctors will remove the organs from the corpse right after execution. They are then delivered to waiting patients. China denies any wrongdoing, citing a 1984 law which states that “corpses or organs of executed prisoners could be harvested if no one claimed the body, if the executed prisoner volunteered to have his corpse so used, or if the family consent-

ed.” Amnesty International continues to accuse China that its harsh death penalties are not to crack down on crime but to expand a lucrative organ donation business.

In India, poor people are being recruited to give their organs for cash or to settle debts. It has now reached the point at which people can even use organs as a dowry. A colony of people in Chennai (previously Madras) within southern India called Villivakkam became known as ‘Kidneyvakkam’ because almost every house had a resident who had sold one of his or her kidneys for money. Despite 1994 legislation aimed to stem the organ sales in India by limiting how organs may be taken and to whom they may be given, there are major loopholes. For instance, doctors may permit non-related donors to give organs for a transplant if they are emotionally close to a patient. This clause allows doctors and hospital administrators to authorize people who claim to be emotionally close to patients to get organ-donor approval, thus ensuring a continuing black market of organs in India.

The newest way of acquiring organs has been through websites and match-making services that, for a fee, allow a person to put out an ad looking for an organ. Most doctors are still against this unregulated practice as those with more wealth have a greater ability to put out advertisements, while those agreeing to give organs assert they are not being paid for their organs.

Alternative and Complementary Medicines

Alternative and complementary medicines encompass all non-conventional forms of medicine and are generally defined as therapeutic interventions which have not been integrated into conventional medical practices. The word “alternative” denotes that these practices are used instead of conventional treatments, as opposed to complementary medicine which is used in addition to accepted treatments.

Some treatments which began as alternative medicines have been embraced by the scientific community and are used as complementa-

ry medicines today. These include diet, acupuncture, chiropractic and physical therapy, among others. Other alternative medicines were not scientifically proven and have been abandoned (for example, radium therapy).



Alternative and complementary medicines are frequently used to prevent disease and illness, to aid healing and to relieve symptoms. The most common examples of alternative and complementary medicines include homeopathy, naturopathy, Chinese medicine and holistic medicine.

Homeopathy uses something called the “Law of Similars” to fight certain symptoms. Natural substances, the ingestion of which is known to induce similar symptoms as the ailment which is being cured, are diluted and consumed. The administration of this substance alleviates the “similar” symptoms.

Naturopathic medicine is a natural approach to health and healing and emphasizes the treatment of diseases through the support of the immune system. Naturopathy is based on six principles of healing.

Chinese medicine has been in use for over twenty-three centuries. It is based on the concept of yin and yang, two opposite substances. When the two are in balance, harmony is achieved; when they are not, the ensuing disharmony leads

to disease.

In holistic medicine, a balance among the physical, environmental, emotional, spiritual, social, and mental parts of human life is sought. With this balance comes a state of being “fully alive”, whether the person has a disease or not.

These are only a few alternative and complementary medicines, and each uses a multitude of specific procedures to treat or prevent various illnesses. An interesting trend has been taking shape: with the developed nations’ heightened interest in alternative and complementary medicines, treatment methods and philosophies which have been used for centuries are being proven highly effective, not to mention popular, in today’s modern world.

Specialty Diets

There are many different diets in today’s world. While new fad diets, diet products and diet books appear on the market every day, the patterns of eating to which the word diet refers have been around since the beginnings of human kind.

Vegetarian diets are defined as those which do not include meat, fish or fowl. About 2.5% of adults in the United States and 4% in Canada follow a vegetarian diet, and its popularity is on the increase. According to the American Dietetic Association and Dietitians of Canada, vegetarian diets are “healthful, nutritionally adequate, and provide health benefits in the prevention and treatment of certain diseases.” The current recommendations for protein, zinc, calcium, riboflavin, iron, vitamin D, vitamin B-12, n-3 fatty acids, iodine, and vitamin A are all met by vegetarian (and vegan) diets. Vegetarian (and vegan) diets have also been deemed appropriate for all ages, even during pregnancy and infancy. Vegetarians tend to have lower weight and lower rates of death from heart disease, diabetes, and various cancers. Their blood pressure, cholesterol levels and rates of hypertension are lower.

A vegan diet is one which consists wholly of plant foods—no animal products are consumed. Vegan diets are eco-friendly and very healthy., as vegans avoid consuming the growth hormones, chemicals, and antibiotics present in eggs, dairy products, and meat. They also help decrease the need for logging forests

to create pasturelands.

While it seems as if eliminating these staples from one's diet would be a great disservice to one's health, studies have shown otherwise. On a regular diet it is easy to consume too much protein by eating eggs, dairy products and meats. Too much protein damages bones and internal organs. Adequate amounts of proteins can be obtained on a vegan diet by eating a variety of vegetables. Many conditions are also caused by cholesterol, which occurs naturally in meat, eggs, and dairy products. Thus the risk of developing heart disease, hypertension, cancer, and diabetes (among other things) is lowered on a vegan diet. Calcium occurs naturally in foods such as tofu and certain vegetables such as broccoli and nuts. Vitamin D is added to soy milk, just as it is added to regular milk. Iron is obtained through iron-rich vegetables.

In today's weight-obsessive world, weight-loss diets abound. Two main categories are the most visible: low carbohydrate and low fat. Following a low-carbohydrate diet means limiting carbohydrate intake to very low amounts, forcing the body to use stored fat for energy. The diet relies on high amounts of protein consumed to keep the dieter feeling full for longer periods of time. A low-fat diet restricts fat and calorie consumption in favor of grains and vegetables. While these two diets are nearly polar opposites, many studies indicate that the difference in weight loss is not dramatic. Both diets generally cause preliminary weight loss followed by weight gain as the dieter gets tired of the restrictiveness of the diet. Fad diets, while very popular, tend to promise an outcome without addressing the cause of what is frequently an obsession with food.

It is commonly said that we are what we eat, and in many ways this is true: our diets affect our health, our appearance, our happiness. Specialty diets, chosen for a variety of reasons, can not only change an individual's eating habits—they can alter a person's life.

The Global Burden of Disease

The advent of industrialization has led to improved sanitation, housing and nutrition, as well as to the development of disease-fighting drugs. An increase in immunization and the use of antimicrobial agents (antibiotics and related medicinal drugs) has occurred, substantially reducing the threat posed by infectious diseases. However, even with these advancements several problems remain, inhibiting our ability to overcome the global burden of disease, problems such as misdiagnosis, shortages of vaccines, counterfeit drugs, and antimicrobial resistance.

Misdiagnosis occurs when overworked and sometimes uninformed physicians and healthcare workers, often unprepared to treat a large number of patients, give unnecessary or inaccurate prescriptions in an effort to prevent possible complications. A lack of suitable facilities and laboratories in poorer nations means physicians and healthcare workers are forced to speculate and as a result, potentially misdiagnose patients and therefore prescribe the wrong medication. Over-immunization can also pose a problem because each vaccine has an optimal time and age for dosage, as well as a minimum lag time between doses which must be carefully adhered to. Counterfeit drugs cause many preventable deaths worldwide. (See "Counterfeit Drugs," page 8) With proper medication and the necessary government controls, people would not be in danger of unwittingly purchasing counterfeit drugs which may not contain the correct concentration of the necessary active ingredient. Additionally, some of these illicit drugs contain poisons capable of causing severe disability or death. Unfortunately, due to the speed of globalization and the prevalence of organized crime, the problem of counterfeit drugs is growing acute.

The shortage of vaccines is yet another pressing issue that contributes to the spread of diseases worldwide. CNN reported last December that a global influenza (flu) outbreak is predicted to occur at some point in the near future. CNN also reported that a World Health

Organization summit, with representatives of major flu vaccine manufacturers and international health officials, took place last November to warn of a global incapacity to successfully prevent or resolve such an epidemic.

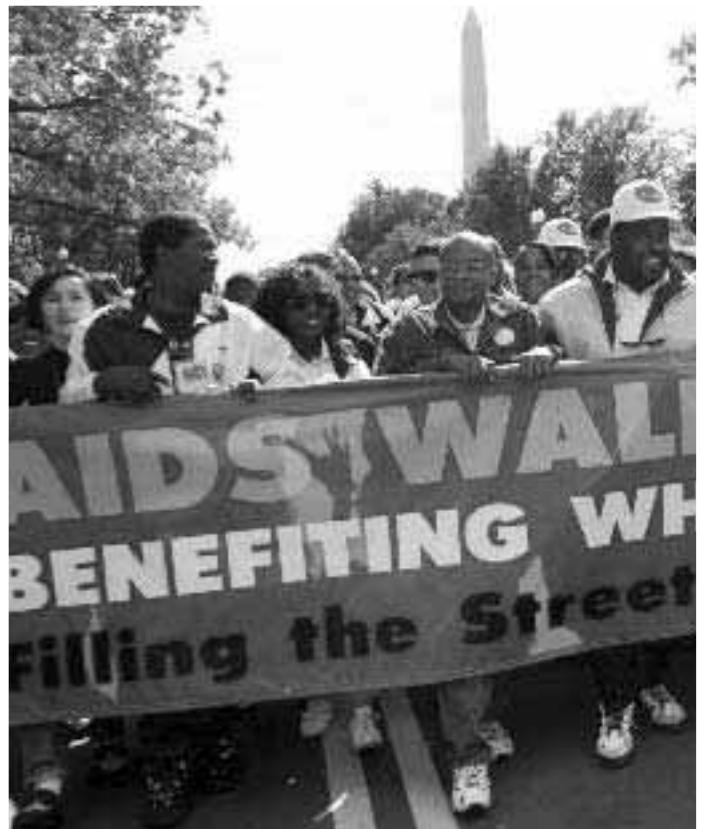
The flu, like many other diseases, mutates rapidly and contributes to a growing problem that has come to be known as anti-microbial resistance. Several anti-microbials, developed to combat some of the 150 infectious diseases that plague our planet, are now rendered useless due to the evolution of microbes (the collective term for bacteria, fungi, parasites, and viruses) and their ability to develop genes that resist the effects of anti-microbials. Anti-microbial resistance is being accelerated by a number of factors: incorrect use of anti-microbials, urbanization, pollution, sudden changes in weather patterns, global trade and travel, and the AIDS epidemic. Farmers, fish-farmers, and the meat and dairy industries (especially in developed nations) have also led to the development of anti-microbial resistance in or near livestock. This is because of the large amounts of antibiotics—used to promote growth and health—administered to animals and subsequently consumed by humans.

Anti-microbial resistance forces physicians to treat illnesses often using second- and third-rate drugs which are frequently more costly and may have undesirable side effects. For example, the drugs needed to treat strains of drug-resistant tuberculosis are, according to the WHO, one-hundred times more expensive than the first-line drugs used to treat non-resistant forms. Moreover, effective treatments against some resistant diseases are unlikely to be found within the next ten years.

HIV/AIDS

HIV/AIDS is now without doubt a global catastrophe. Although the disease has made its greatest impact in Africa, it has now become a major source of concern in many areas throughout the world, including Asia, Latin America and the Caribbean, and parts of Europe. According to UNAIDS, the number of people living with AIDS rose to its highest level ever in 2004. UNAIDS also observes that since 2002, the number of people living with HIV has risen in every region. In

2004 alone, there were about five million new cases of HIV/AIDS and more than three million deaths. The greatest increases in the number of people infected have been in East Asia, Eastern Europe, and Central Asia.



HIV/AIDS is not only a medical emergency; it has also resulted in the destruction of families and households and has lowered the life expectancy of many countries in Africa to levels that have not existed since the middle of the twentieth century. One of the many social issues caused by the pandemic is the number of orphans worldwide who live alone or with grandparents or other relatives after the deaths of their AIDS-infected parents. Living under extreme conditions of poverty, these children also are more likely to have their rights compromised. Furthermore, they may be unable to complete their education as limited family resources are spent on the sick and the dying. Women and young girls have been especially affected by the illness, particularly in Africa. Young girls have been abused, and women have often been declared outcasts because of their HIV-positive status. The plight of women and girls with HIV/AIDS is highlighted by UNAIDS, which notes that adult women in sub-Saharan Africa are up to

1.3 times more likely to be infected with HIV than their male counterparts. This unevenness is greatest among young women aged fifteen to twenty-four years, who are about three times more likely to be infected than young men of the same age.

One of the major consequences of the HIV/AIDS pandemic is the stigmatization of those infected or affected by the disease. In many countries, access to antiretroviral drugs (which reduce the impact of the disease and increase the life expectancy of AIDS patients) is limited. A major constraint is that these medicines are very expensive. There has been extensive debate about lifting patent protection on brand-name antiretroviral drugs so that they can be manufactured more cheaply and thus be more readily available throughout the world.

The United Nations Declaration of Commitment on HIV/AIDS, which was adopted by the United Nations Special Session on HIV/AIDS in 2002, indicated a global commitment by governments to address the pandemic with renewed vigor, establishing specific targets for achieving major policy changes. Many governments have since increased their efforts to prevent and treat HIV/AIDS in their respective countries. Beginning in 2002, governments such as those of Brazil and Uganda have made special efforts to make drugs available to all those infected. Many countries also now have laws in place to protect people against discrimination because of HIV/AIDS.

Although there has been a lot of progress in ensuring that HIV/AIDS infected people are not discriminated against, an important area requiring further attention is that of providing all people with better knowledge of AIDS and how to prevent it. Access to health information and especially HIV/AIDS prevention information is as much a human right as universal access to medications. When people know more about how to protect themselves, they will be able to take measures that complement what their governments can do to protect them. Therefore, as noted by the United Nations, it is important for governments to continue to improve public knowledge by promoting Information, Education, and Communication programs through diverse channels such as news and other print media, theatre, radio, direct

mailings and other public services.

HIV/AIDS is a disease that has seriously threatened and tested the rights of countries, communities, and individuals to access needed health services. Although there have always been concerns about inequitable distribution of health resources and opportunities worldwide, the AIDS pandemic has made this much more serious. More extensive measures still must be undertaken to curb the devastation caused by the rapid spread of HIV/AIDS.

Smoking

Smoking is widely-known as an extremely unhealthy and powerfully addictive habit, yet according to CorpWatch, there will be ten million smokers in the world by the year 2030 if current trends continue. Indeed, it is the prevalence of smoking that brings the issue to the forefront of global health concerns as nations, recognizing the health consequences of second-hand smoke, take steps to ban smoking in public places.

Countries in all continents have begun to crack down on smokers. In the United States, California enforces severe anti-smoking laws, and New York has banned smoking in restaurants, bars, and clubs since March of 2003. Along with a ban on smoking in public places, Canada dissuades would-be smokers with images depicting the consequences of smoking printed on cigarette packs; the country has one of the lowest rates of cigarette smoking in the world. Australia has made smoking illegal in areas including beaches and restaurants. The United Kingdom has also taken legislative steps to ban smoking in public places including offices and most pubs; according to the BBC, Scotland anticipates a full ban on smoking in public spaces by 2006. Cigarette packs in the UK and Europe are emblazoned with unmistakable warnings about the consequences of cigarette smoking. According to the BBC, France levied the price of cigarettes by twenty percent in 2003; ironically, the funds generated by this change went toward the country's health budget. However, France has made no move to restrict smoking in public places. In Norway, advertising for tobacco products has been banned for over thirty years, and cigarettes cost about seventy kroner, or eleven dollars.

(BBC) India has created anti-smoking laws which, though intended to regulate the sale and consumption of tobacco products, lack the funds necessary to be enforced. Iran's story is identical, and as a result the numbers of young smokers are rising. Bhutan has fully banned the sale of tobacco, hoping to become the first smoke-free nation in the world. Tanzania has taken steps to ban smoking in public areas, including schools and hospitals.



Even the largest tobacco corporation in the world, Phillip Morris, is forced to note on its website that, "Smokers are far more likely to develop serious diseases, like lung cancer, than non-smokers. There is no safe cigarette." A landmark document written by the United States' Environmental Protection Agency (EPA) in 1993 (and reaffirmed in 2002) even classified second-hand smoke as a "Class A carcinogen." According to Action on Smoking and Health (ASH), a United Kingdom-based organization, thirty percent of cancer-caused deaths worldwide are attributable to smoking.

Cigarettes contain tobacco, tar, nicotine, carbon monoxide, hydrogen cyanide, formaldehyde, and benzene in varying concentrations.

Diseases caused by cigarettes include multiple forms of cancers, with lung cancer accountable for the most deaths, as well as many respiratory, circulatory, and digestive diseases. Pregnant or nursing women place themselves and their infants at greater health risk, and smoking is connected with impotence and infertility. Smoking also aggravates symptoms of asthma, diabetes and other conditions, and induces a variety of non-lethal illnesses ranging from chronic back pain to macular degeneration.

But the effects of smoking extend well beyond the individuals who smoke. International health organizations helping people in developing nations are faced with overwhelming numbers of avoidable, smoking-related diseases which drain funds from more pressing health concerns. According to the WHO, people in impoverished nations spend an excessively large percentage of their income on cigarettes; the decline in the cultivation of tobacco in the United States and its shift into the developing world (where cheap labor is attractive to corporations) has induced farmers to plant tobacco cash crops instead of cultivating food, and left them at the mercy of the market.

The deaths and diseases caused by smoking are fully preventable. It has become common knowledge in developed countries that smoking is a markedly unhealthy habit—for smokers and for those who surround them. With the increase in anti-smoking legislation throughout the world, the first step has been taken towards de-normalizing this behavior and curbing the addiction which devastates our world. However, it is important that the truth about smoking be disseminated into the developing world as thoroughly as in the developed: it must be ensured that as the markets in developed nations dry up, corporations are not allowed to simply shift their focus from one market to another, exploiting those in poorer countries who remain unaware of the toll cigarettes take on their health.

The WTO and its Health Impacts

Today's world is becoming more and more globalized, specifically through trade agreements and the World Trade Organization (WTO). While

many view moving in the direction of free trade as a positive development in world economics, free trade has a significant and often detrimental impact on world health.

The World Trade Organization was established in 1995 to replace the older General Agreement on Tariffs and Trade (GATT) and now has 148 members. The World Trade Organization functions as a forum for trade negotiation among nations on a global or near-global level. Unlike its predecessor, it is an institution with a secretariat and permanent membership.

Over the past ten years, trade in food products has grown considerably. The less stringent regulations and inspections that accompany free trade may allow contaminated foods to reach many countries. While governments in the WTO are allowed to restrict trade in certain areas when the goods involved pose a problem to health, such a measure must be based on scientific evidence and reviewed by the WTO.

Only one trade-related health concern brought before the WTO has gone through the full dispute-settlement process. This was between the European Union, the United States, and Canada in response to the use of hormones in beef production. The European Union, concerned with the effects of these hormones on human health, banned the use of the hormones (and the importation of hormone-treated meat). The United States and Canada protested through the WTO, and Europe was asked to justify why it had imposed its own regulations on hormones when internationally accepted standards were already in existence. As a result, the WTO ruled that the European Union's ban on the use of hormones was in violation of previous agreements.

Another example of the WTO's damaging effect on world health concerns tobacco. The amount of tobacco consumption in developed countries has been on the decline while consumption levels in developing countries are rising. Free trade allows multi-national tobacco companies to carve out markets in poorer countries, competing against domestic tobacco companies in places such as Eastern Europe, Asia, and South America. The increased competition between domestic and foreign brands leads to more tobacco promotion in these countries and in turn, to increased tobacco consumption.

Human health depends on the health of the environment, and free trade often places economics before sustainability. For example, the WTO's "like-policy" functions to ensure that domestic products that are similar to foreign ones are not given an unfair advantage. This policy can have detrimental effects on the environment and health. For example, if a foreign-manufactured product is harmful to health or the environment and for this reason is being banned by a country which is instead using safe, domestically manufactured products, the country manufacturing the toxic product can argue that since the two products serve the same purpose, the other country cannot ban the imported product.

The WTO has taken several measures, including the creation of Multilateral Environmental Agreements, to resolve issues such as these. However, free trade still poses dangers to human health and the environment and threatens to continue to place profit before health.

Obesity

According to the World Health Organization, the rate of obesity has tripled since 1980 in some areas of North America, the United Kingdom, Eastern Europe, the Middle East, the Pacific Islands, Australasia, and China.

The surge in world obesity rates is due to increased consumption of nutrient-poor foods with high levels of sugar and saturated fats, combined with minimal or no physical activity.

In addition, the increased prevalence of western diets has resulted in an increase in numbers of overweight people in developing nations. In developed countries, more children are watching sports instead of playing them, leading to higher rates of childhood obesity. Advertising also plays a part in determining which foods are consumed: with more celebrities advertising foods that contain dangerously high levels of fat or salt, individuals are encouraged to consume foods which may be detrimental to their health. The Food Standards Agency has suggested attempting to resolve this issue by putting health warnings on food packaging. According to BBC news, in countries such as Egypt, Chile, and Algeria, the rate of overweight preschool children is over five

percent. In Uzbekistan, it is approaching fifteen percent. Dr. Mercedes De Onis, one of the primary authors of the WHO investigation on Obesity published in the *American Journal of Epidemiology*, pointed out that the problem begins when diets considered normal in developed countries are introduced in developing countries—as the saying goes, consume the diet of developed countries and you will inherit the health problems of developed countries.



Children who grow up overweight or obese are predisposed to serious chronic diseases such as Type 2 Diabetes, cardiovascular disease, hypertension and stroke, and certain forms of cancer. This results in an increased risk of premature death. According to the WHO, there are more than one billion overweight adults, at least three hundred million of them obese. As chairman of the Food Standards Agency, Sir John Krebs stated, "What we are faced with is a situation where, if nothing is done to stop the trend, for the first time in a hundred years life expectancy will actually go down."

Health and Education

Ignorance is a major cause of many serious health problems in the world, all or most of which can be prevented through effective health-education programs. If nations invested in school health programs they would more effectively prevent the cultivation of unhealthy practices such as tobacco consumption, behavior resulting in injury or violence, alcohol and substance abuse, disease-causing dietary and hygienic practices, and sexual behavior resulting in unwanted pregnancies and sexually transmitted diseases, among other things.

Many diseases are fully avoidable when individuals are armed with information. According to the World Health Organization, worm infections are the greatest cause of disease among fourteen to fifteen year-old children; Vitamin A deficiency is the single greatest cause of childhood blindness; and iodine deficiency is the single most preventable cause of mental retardation and brain damage in children. One in two young people who start and continue to smoke will be killed by tobacco-related illness. Five percent of all deaths of young people between the ages of fifteen and twenty-nine are due to alcohol abuse. In some countries up to sixty percent of all new HIV infections occur among fifteen to twenty-four year olds.

However, developing effective health education programs is a problem in many countries. In the United States, President George W. Bush's administration allocates funding for sex education in schools exclusively to those programs promoting an abstinence-only approach to sex. The debate in the United States over what sort of sex education should be offered to middle school and high school students is a difficult one because of the varying beliefs held by the nation's people.

Increasingly, schools are not the only way to educate people about health—the media also has the power to relay important information to a wide audience. Mass media campaigns such as the United States' "Truth" and "D.A.R.E" commercials speaking out against marijuana use and cigarette smoking target pre-teens and teens.

Moreover, catchy slogans such as “Not me, not now...what smart kids say to sex,” (used in a campaign against engaging in sexual intercourse at an early or unprepared stage in life) have the potential of resonating with today’s youth. Aside from these advertising campaigns, print and broadcast media are also efficient and influential ways to present and explain basic information on human health to a wide audience.

Supporting better health through education has the potential of encouraging a change in the social, economic and political conditions that present health risks and will save future generations from suffering from preventable diseases out of ignorance.

Water Contamination

Water is possibly the most precious resource on the planet—yet everyday, waste is expelled into bodies of water around the globe, with extensive repercussions. According to WaterAid, over one billion people do not have access to safe drinking water and two million people die every year from infectious diseases related to water contamination. This article will seek to give a summary of the reasons for and ramifications of water pollution in both developing and developed nations.

Developing:

Diarrhea, malaria, cholera, and typhoid fever are just a few of the diseases caused by water contamination in developing countries. These pathogens enter waterways through runoff from storm drains, septic tanks, waste dumping from factories and farms, as well as from boats discharging sewage. This refuse contaminates water to the point that extended exposure to the water is detrimental to human health—even beaches around the world are closed regularly due to dangerously high concentrations of bacteria.

Often, people in the developing world do not even have adequate access to fresh water. Women and children in developing countries are especially affected: they often must walk long distances to collect water and then return, carrying containers of water of up to twenty kilograms in

weight. Sometimes this requires waking up in the middle of the night to avoid waiting on lines that can be up to five hours long.



Developed:

While water-borne diseases have been mostly eliminated in developed nations, these countries are equally affected by contaminated water. Synthetic chemicals released into water which then comes into contact with humans can cause cancer and other diseases. Factories and farms are often to blame for contaminating bodies of water with carcinogens; however, ineffective water filtration systems and improper and excessive use of household chemicals such as lawn enhancers (pesticides) can also pollute water. Animal waste from factory farms is also known to be a major contaminant of water in the United States.

The Natural Resources Defence Council an environmental organization in the United States, has stated, “Drinking water plants are old and out of date, and water supplies are increasingly threatened and contaminated by chemicals and micro-organisms.” Many chemical companies argue that these contaminants are relatively insignificant and harmless to human health. However, a National Cancer Institute report to the

Surgeon General concluded that “no level of exposure to a chemical carcinogen should be considered toxicologically insignificant for man.”

Natural Disasters

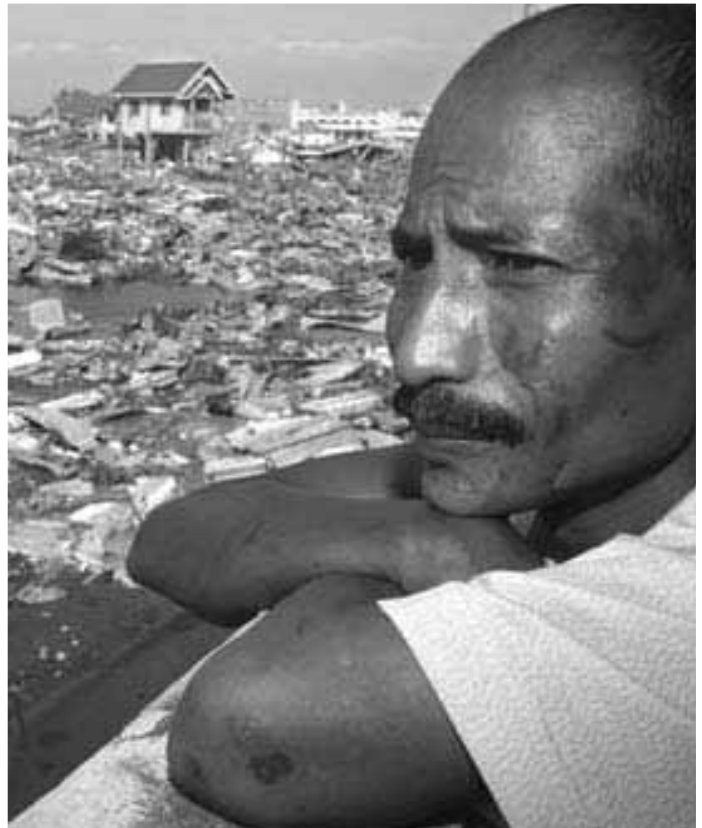
On December 26, 2004, the most powerful earthquake in forty years occurred off the coast of the Indonesian Island of Sumatra and caused tsunamis of up to thirty feet in height that killed thousands of people and wrecked large portions of approximately a dozen countries in South and Southeast Asia. According to the *New York Times*, its effect was felt more than three thousand miles away on the eastern coast of Somalia, where a few people were killed. The spread of cholera, malaria, diarrheal diseases, dengue fever, and other diseases was an expected outcome after the devastation which made fresh drinking water and medical supplies scarce.

UNICEF executive director Carol Bellamy said, “Hundreds of thousands of people fought to survive the tsunamis. Now we need to help them survive the aftermath...for children, the next few days will be the most critical.” Natural disasters such as earthquakes and tsunamis create an immediate need for medical and surgical supplies in areas that are affected in order to prevent the spread of disease. Moreover, damage to health-care facilities is often massive and can lead to an interruption in basic healthcare services. The destruction of lifelines such as water and sewer systems also dramatically increase the incidence of disease and death.

Similarly, other natural disasters such as vegetation fires, tornadoes, hurricanes, volcanic eruptions, drought, famine, and lightning pose serious health concerns.

On the other hand, Global Warming (human-induced wide-spread climate change) poses serious threats to the future of world health. Disease-causing viruses and bacteria tend to thrive in warmer conditions. Thus, along with flooding and other better-known projected effects of global warming, the risk of contracting many infectious diseases will increase. Diseases spread by mosquitoes and other insects may potentially become more prevalent because warmer temperatures will allow those insects to breed farther north and to locate still water in

which to lay their eggs more easily. Rising temperatures could also intensify the effects of UV radiation, which is known to increase the incidence of eye cataracts and reduce the effectiveness of the immune system.



According to Paul Epstein, associate director of the Center for Health and the Global Environment at Harvard Medical School, “As the atmosphere has warmed over the past century, droughts in arid areas have persisted longer, and massive bursts of precipitation have become more common. Aside from causing death by drowning or starvation, these disasters promote by various means the emergence, resurgence and spread of infectious diseases.”

In spite of these risks, the consequences of global warming may in some cases be prevented. Malaria, for example, which is transmitted through mosquitoes and appears in regions with warm weather, is rare in the United States because US medical institutions have the ability to quickly contain and cure the disease.

Air pollution has also caused the thinning of the ozone layer, which allows for more UV radiation to reach the Earth’s surface. This has dramatically increased the rate of skin cancer: according to the Australian Institute of Health and

Welfare/Australian Association of Cancer Registries, rates of incidence of melanoma in Australia have risen by almost thirty percent from 1997 to the present day. The increase of sun-bathing due to a rise in the number of people taking holidays in the sun has resulted in the increase of skin cancer in other countries besides Australia. For example, according to British Parliament, non-melanoma skin cancers (NMSCs) and melanomas (MMs) have both become more common in recent years. Over forty thousand NMSCs are now registered in the UK each year, a rise of two hundred percent in the last fifteen years, while the incidence of MM (currently about four thousand cases a year) has been rising by around five percent per year. These two cancers have a cure rate as high as ninety-five percent if detected and treated early.

Deaths caused by natural disasters are inevitable—deaths from disasters due to human negligence of the environment are not. We must learn to take care of our environment in order to take care of ourselves.

The Outsourcing of Medical Practitioners

As medical practitioners relocate from developing countries to industrialized nations, medical progress in developing nations becomes more of a distant dream than a reality. More and more professionals in developing countries are relocating to countries offering better quality of life and more lucrative paychecks. This type of outsourcing has placed an even bigger strain on countries in Africa and Asia. The practice ultimately compromises a developing country's ability to provide adequate medical care because of staff shortages.

Many medical professionals are reluctant to live in countries plagued by political and economic crises. When offered a position in industrialized nations, talented professionals from the developing world will often choose to accept, migrating to better working conditions and less frazzled working environments. However, outsourcing is harmful. Dr. Malegapuru Makgoba, president of the South African Medical Research Council has said, "It only adds woes to the health

care of our country. You can't address this when at the same time you are bleeding."

The outlook for healthcare in countries such as South Africa is increasingly ominous, as AIDS and malnutrition continue to devastate the population, and the number of doctors working to provide them with adequate health care slowly declines. Statistics are grim in South Africa: one doctor working in a hospital may have to treat seven hundred people in urban areas, while another doctor is on call to treat ten thousand patients in rural areas. Doctors are forced to work long hours with poor medical equipment, and some doctors have been known to ask patients with minor ailments to assist them in treating other patients with more severe conditions.

A growing number of healthcare firms in the United Kingdom and the United States are finding ways to keep their costs low. One of the most practiced solutions is to hire employees in India and China to save money in labor costs. Moreover, technological processes have been exported overseas in order to develop medical advancements inexpensively. Over the past decade, many companies have been established to accommodate the burgeoning demand for healthcare outsourcing. Anurag Jain, Chief Executive Officer of Vision Healthsource of India, a healthcare outsourcing service, states, "India's inherent strength is the quality of our human resource pool. We have the analytical thought process that is required to develop complex applications and manage complex process, which is of utmost importance for healthcare... particularly."

Devashish Ghosh, Chief Operation Officer of Wipro Spectramind, another healthcare outsourcing firm, adds, "Indian companies have an edge as they can offer a large number of value-added services like diagnostic analysis by highly qualified medical professionals at a much cheaper cost."

Despite efforts by the United Nations to exert pressure on industrialized nations to impede outsourcing, healthcare professionals and technology continue to be exported from developing nations. Dr. Steven Resnick, a twenty-seven year old general practitioner in South Africa, is frustrated by this recent medical exodus

from his country. During the two years he has worked for state hospitals, he has played witness to two nurses struggling to care for seventy-five patients—many who could not even receive the necessary medical treatment as a result of inadequate medical resources. Resnick claimed, "What we've seen now is the tip, the very tip, of the iceberg. What people fail to realize is that HIV will only make things worse."

To mitigate the loss of medical workers, both organizations and governments need to take a firmer stance on the outsourcing of healthcare. Nations should provide incentives for medical practitioners to remain in their region and ensure medical services are adequate in rural areas. Moreover, governments should encourage their healthcare technology industries to develop technology domestically to benefit their own population.

The Health of Emergency Response Workers

Disasters take place all over the world on a regular basis, but regardless of whether they are natural or human-induced, emergency response workers are generally the first on the scene. Whether firefighters, law enforcement officers, paramedics, hazmat (hazardous material) teams, or volunteers, these workers are the first responders who risk their lives on a daily basis in order to save others. As a result, they are exposed to certain serious occupational health hazards. Caused by various factors, these mental and physical problems can often be serious enough to incapacitate the workers or leave them with long-term health difficulties.

One of the most recent disasters that highlights the everyday risks faced by emergency response workers was the terrorist attack on the World Trade Center on September 11, 2001. In the weeks and months following the attacks, thousands of volunteers worked on the scene, removing debris, searching for survivors and recovering bodies. According to the RAND Science and Technology Policy Institute, in the immediate response to the attacks at least 450

emergency response workers, the majority of them firefighters, were killed. Physical injuries were caused by exposure to hazardous airborne materials such as debris, asphalt, jet fuel, and dust particles. Many of the long-term health effects of this exposure are yet to be discovered. However, according to press reports in December 2001, over five hundred New York City firefighters were on leave for respiratory-related illnesses just after the attacks. According to the Uniformed Firefighters Association, about three thousand of its members suffered from what became known as the "World Trade Center Cough" in January 2002.



Other physical problems which emergency response workers may experience include asthma, lung infections, chest pains, and other breathing problems. However, the mental and emotional toll on the workers is often much more severe. Those who come into frequent contact with the results of accidents involving serious injury or death often experience mental stress. They can suffer from confusion, nightmares, and difficulty identifying familiar objects and people. Symptoms include depression, severe panic, and

anxiety.

Although the disasters to which emergency response workers are summoned are often unavoidable, many of the health issues that arise afterwards can be prevented. Emergency response workers are usually well-informed about job safety and symptoms of physical and emotional stress. They are taught to monitor their own health as well as the health of others. Many experts agree that this is the best way to avoid future problems. However, as demonstrated by the response to the World Trade Center attacks in 2001, it is up to the state and local governments to ensure that all workers have the necessary equipment to perform their duties in a safe and secure environment. Emergency response workers have the right to quality preventive health-care, and organizations and governments have the responsibility to ensure that they get it.

Unintentional Injury

In 2001, unintentional injury was declared the fifth leading cause of death in the world and still stands as a major threat to the health and well-being of a person. Studies show that the risk of injury depends largely on one's economic status, age, sex, or ethnicity; according to WHO accidental injury causes more than two million deaths a year, some of which are preventable.

Through extensive research conducted by multiple organizations, the accidental injuries likely to occur have been identified. It has been found that accidental injury is most likely to be caused by motor-vehicle or transport accidents, accidents involving water such as accidental submersion, unintentional falls, violence-related injury, and surgical complications.

Studies have found that the highest mortality rates exist in developing countries. In comparison to more developed nations, inhabitants of these countries face hazardous situations on a daily basis. Often the most vulnerable people, especially young children and the elderly, dwell in areas with poorly maintained transport, communication networks, and shelters. These countries may also have few or no safety regulations to prevent accidental injury.

Although the western Pacific and south-east Asia, due to their rapidly growing popula-

tions, account for over sixty percent of the world's mortality rate, unintentional injury increasingly affects developed nations such as the United States and Europe.

Every year, according to WHO, nearly 1.2 million people suffer from road traffic accidents, amounting to approximately 3,242 people dying each hour, with males between the ages of fifteen and twenty-four years most susceptible.

Recent figures show that ninety-seven percent of drowning accidents occur in low- and middle-wealth countries where the highest mortality rates are among children ranging from ages one to fourteen. According to the Center for Disease Control, bathtub submersions are also common, causing about nine child deaths per day.

One quarter of all falls occur in high-income countries. The unintentional fall rate is higher in women and highest for the elderly of age seventy-five and above.

Compared to major accidents, numbers relating to medical complications, exposure to fire and flames, or accidental poisoning have decreased in numbers over the past few years, ranging, according to the National Safety Council, from approximately one thousand to four thousand deaths a year.

Conditions such as insomnia, premenstrual syndrome, and sleep apnea are circumstances in which an individual is pressured by the body itself to act upon impulse, potentially resulting in situations which can lead to unintentional injury or death if certain natural responses are impaired. Sleep apnea, a condition which stops a person's breathing during sleep for ten seconds or more, results in hours spent sleeping during the day. Insomnia or lack of sleep and stress create similar symptoms—drowsiness, delay in reflexes, poor coordination, and changes in attitude which according to records, may cause a driver to fall asleep while on the road.

Alcohol, drug abuse, and stress are conditions which can also result in motor-vehicle accidents. Unfortunately, the rise in alcohol-related accidents promises to steadily increase; at highest risk are adolescents with high blood alcohol concentration. According to Wrong Diagnosis, nearly 1.5 million citizens of the United States of America are struggling with alcoholism and drug

abuse.

Accidental injury also increases medical care costs and has a negative effect on economies worldwide. In 2001, according to the Center for Disease Control, the U.S. reported an estimated \$117 billion spent on medical costs annually, while in China the estimated medical treatment cost per injured child was 250 yuan or thirty dollars. Unintentional injury in China also caused a massive economic loss of about \$4.4 billion.

The meticulously assembled data from recent years of study covering worldwide accident cases has increased attempts to find methods to prevent unintentional injury. As the fifth leading cause of death in the world, accidental injury should be remedied alongside other causes of fatalities such as cancer, homicide, suicide, and medical error.

Mental Health

While mental disorders are certainly not new, with the advancement of scientific and medicinal studies, particularly within the last century, mental disorders have been increasingly recognized, classified, and treated.

The general categories of mental disorders include anxiety disorders, childhood disorders, eating disorders, mood disorders, cognitive disorders, personality disorders, psychotic disorders, and substance-related disorders. Within these categories are specific disorders, some of which are better known than others. They include (but are not limited to) obsessive-compulsive disorder, autistic disorder, Tourette disorder, anorexia and bulimia nervosa, Alzheimer disease, schizophrenia, and attention deficit disorder or attention deficit hyper disorder.

According to WHO, 450 million people worldwide are affected by mental, neurological or behavioral problems; an estimated 121 million people currently suffer from depression, twenty-four million people worldwide suffer from schizophrenia, an estimated thirty-seven million people worldwide live with dementia (with Alzheimer's disease responsible for the majority of these cases), and seventy million people have alcohol abuse disorders. An estimated ten to twenty percent of children have one or more mental or

behavioral problems. Detection of such mental disorders is often difficult and may require a painstaking mental analysis of the patient.

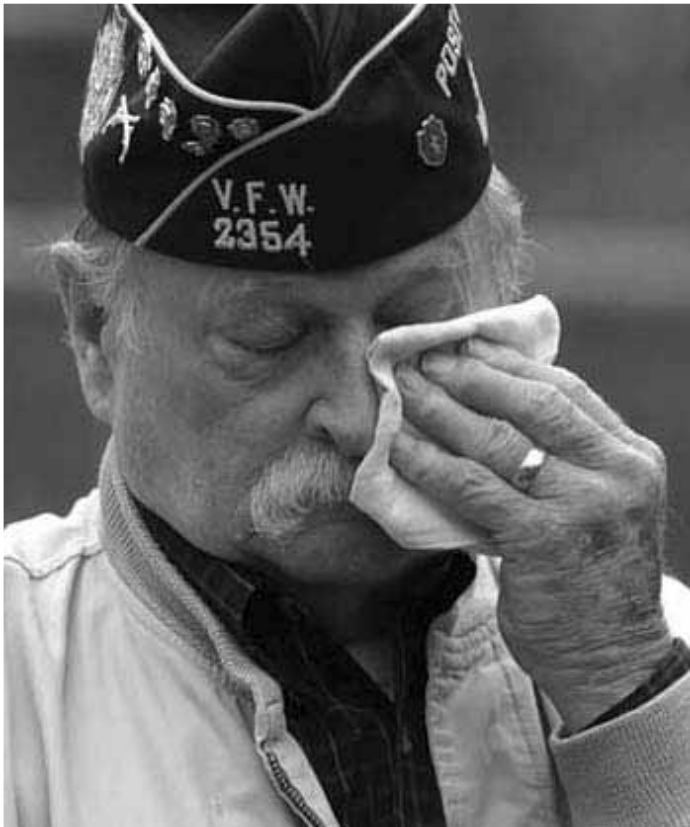
Mental illnesses have an undeniably large and often underestimated impact on health and productivity throughout the world. A joint study by the World Health Organization, the World Bank, and Harvard University has recently revealed that mental illnesses—suicide and depression in particular—account for greater than fifteen percent of the disease burden in influential and well-established market economies, such as that of the United States.

Mental disorders affect people and countries in all regions of the world. Progress is being made each day towards developing better understanding of various causes and possible treatments for these conditions, in the hope of ultimately being able to cure at least some of them entirely.

The Psychological Effects of War

According to the Killology Research Group, which examines the cost of warfare and was pioneered by Pulitzer Prize winner Lt. Col. Dave Grossman, "In every major war fought in this last century, there has been a greater probability of becoming a psychiatric casualty than of being killed by enemy fire."

There are two major stressors that cause the psychological effects associated with combat: being the victim of close-range hostility or killing another human at close range. Psychiatric casualties can take the form of an affective disorder, known as somatoform disorder, or the more common combat stress disorder. Affective disorders are mental disorders characterized by a consistent alteration in mood that affects thoughts, emotions, and behaviors. Somatoform disorders (simultaneous psychological conflicts and physical complaints) are common among those claiming physical disability. They may arise from intense fear and are usually combined with depression. Israeli research has also presented evidence that after combat, psychiatric casualties are strongly predisposed toward post-traumatic stress disorder.



The protocol generally considered appropriate for treating psychiatric casualties includes the removal of the affected individuals from the war environment. If soldiers are suffering from combat stress this procedure would allow them to regain their ability to participate in the fight; however, for other psychiatric casualties this is not the case. Removing soldiers from the battlefield poses a problem: healthy combatants recognize that mentally ill combatants are being evacuated; as a result, the number of psychiatric casualties increases dramatically. Continued proximity to the battlefield (through treatment, usually within enemy range) combined with an "expectancy" of rapid return to combat are the solutions developed to overcome induced psychiatric casualties. But even with the careful application of the principles of the proximity and expectancy solution, the incidence of psychiatric casualties is nevertheless considerable. During World War II, 504,000 men were removed from America's combat forces due to psychiatric instability—enough to man fifty divisions. At one point in World War II, psychiatric casualties were being discharged from the U.S. Army faster than new recruits were being drafted in.

Swank and Marchand's World War II study of U.S. Army combatants on the beaches of Normandy found that after sixty days of continuous combat, ninety-eight percent of the surviving soldiers had become psychiatric casualties. The remaining two percent were identified as possessing "aggressive psychopathic personalities." Armies around the world have experienced similar mass psychiatric casualties, but many have simply forced these men and women to return to battle by shooting those who refused or were unable to continue. Japanese units in World War II employed a unique set of powerful cultural and group methods to delay psychiatric breakdown, but these were only temporarily successful.

Moreover, soldiers frequently endure more acute psychological problems after war than during it. Not only do they have to cope with physical damage such as injury and disfigurement after the fighting—many of them relive the battle through nightmares and flashbacks.

Civilian victims of war often suffer the greatest psychological harm due to the fact that they have not been prepared by military training to manage the stress, shock and fright induced by violence and loss. Wars generally leave many displaced, forcing women and children to resort to prostitution to survive and putting children at risk of recruitment as child soldiers. Psychologically unstable soldiers use rape and other forms of torture as a means to punish civilians that they identify as enemies. In addition, whether a soldier dies in war or comes back psychologically ill or physically crippled, any suffering he or she has undergone unquestionably affects the psychological health of close family and friends.

After wars conclude, the affected countries release estimated figures documenting economic loss and the number of soldiers wounded and killed—yet no concrete number can be assigned to those suffering from the long-lasting and life-altering psychological effects of war on soldiers and civilians alike. War is seemingly unavoidable; it is in our past and future, and certainly in our present. Its psychological impact, less tangible and potentially more devastating than any physical injury, must be addressed.

Biological Weapons

"Scientific achievements, and particularly in the field of biology and medicine—the most humane sciences—should be used only for mankind's benefit, but never to do it any harm."
-World Health Assembly, May 1967

Biological weapons are those containing diseases that have been modified to increase their potency. An ideal biological weapon is hard to detect, has a high mortality rate, achieves the desired effect easily, is easy to produce or get hold of, and is easily spread. As the "war on terror" intensifies, the issue of biological weapons promises to rise to a new kind of importance in the world. There are six classifications for biological agents that can be used as weapons: bacteria, viruses, toxins, rickettsiae, fungi, and chlamydia. The first four are the classes of agents that are most often used as biological weapons and are the most deadly. Within these classes, the biological agents are further classified into three different subcategories. The Category A agents are the most dangerous and include anthrax and smallpox; Category B agents are the least dangerous, and include salmonella and cholera; and Category C agents can be engineered for mass distribution but are not often used as weapons.

There are several other Category A biological agents such as botulism, which causes paralysis and respiratory failure. Ebola, known for its presence in Africa in the 1990s, is extremely lethal as it is spread through cutaneous human contact. Plague is also a highly contagious bacteria and may be fatal. Marburg is a viral hemorrhagic disease which is also lethal and currently has no cure.

Anthrax is one of the deadliest agents with the potential to be used in biological weapons. It is caused by infections from the bacterium *Bacillus Anthracis*. A natural infection occurs when the bacterium enters through a wound or is inhaled; infection can lead to death without much notice, passing as a cold. When Anthrax is used as a biological weapon, it is often put into its highly resistant spore form and is therefore easily spread. Anthrax is not an agent that can be spread from one person to another and only affects those who are exposed to it. A vaccine

against anthrax is available, but use by the public is discouraged because the vaccine is known to have undesirable, almost dangerous side effects.

The largest distribution of anthrax as a biological weapon occurred in 1979 when a biological weapons plant in Sverdlovsk, Russia exploded and spread anthrax spores, killing sixty-six people almost instantly. Furthermore, during World War II, the British government demonstrated the killing power of anthrax by releasing the bacterium onto a flock of sheep on an isolated Scottish island. The island was so badly infected that it was declared out-of-bounds for nearly fifty years. Most recently, a series of anthrax cases occurred in several US states following the September 11 attacks on the World Trade Center, raising concerns about biological weapons that could be in use or produced by terrorists.



Another commonly known potential biological agent is smallpox—a highly contagious virus that exists in two forms, the V major (*Variola major*) form, with a mortality rate of up to thirty percent, and the V minor (*Variola minor*) form, with a much lower death rate of one percent. A vaccine was created in 1796 when Edward Jenner discovered that an injection of cowpox

Female Genital Mutilation

makes a human immune to smallpox. Worldwide attempts to eradicate the virus began in 1842 in England and in 1843 in the U.S. However, smallpox still remained a problem in other areas of the world. By 1958, nearly two million people were dying of smallpox every year, and the Soviet Union called for a worldwide eradication of the virus. In 1967 a group of experts started the program of vaccinating everyone in affected areas. By 1975, the last case of Variola major had been recorded, and by 1977 the last case of Variola minor had been contained. At the moment, only the Centers for Disease Control and Prevention are supposed to contain a sample of the virus, but the 2001 anthrax attacks in the US raised fears that the virus could be held by other powers to be used as a biological weapon.

Throughout history, many diseases that occur naturally have been used as strategic weapons. In the Middle Ages, the feared Black Plague was used as such; the bodies of infected people were flung over city walls using catapults and trebuchets to spread the plague through the city streets. The last recorded occurrence of using the plague as a weapon was in 1710 when Russian forces attacked the Swedish city of Reval. Disease was also used by the colonists of North and South America, who distributed infected items amongst the indigenous populations of the area. Hernan Cortés used this method against the Aztec population in the 16th century, and Jeffrey Amherst distributed blankets infected with smallpox to Native Americans during the French and Indian War.

An added danger of using biological agents as weapons is that they can just as easily affect the user as the victim. The nature of biological weapons has led to their being banned by multiple conferences, including the Geneva Protocol of 1925. The Biological and Toxin Weapons Convention (BWC) of 1972 was held to create stricter rules on the use of these types of weapons. The BWC is the first international treaty to ban an entire genre of weapons and as of June 2000, 144 countries were part of the convention. Review conferences to enhance the BWC have been held, but the Convention still has several limitations, including the lack of an international monitoring compliance.

Female Genital Mutilation (FGM), a practice that began in Africa two thousand years ago, has now transpired into a human rights issue that concerns the elimination of certain cultural beliefs that justify such an atrocity. According to Amnesty International, which vowed to stop violence against women last spring, an estimated 135 million of the world's girls and women have undergone genital mutilation, and two million girls a year are at risk of mutilation—approximately six thousand per day. Moreover, Win News reports that the number of mutilated women is increasing due to "population growth as effective preventative education fails to be implemented."

In most societies that promote Female Genital Mutilation, the practice is thought necessary because it establishes a girl's development into a woman and defines the future roles of each sex in life and marriage. It is also believed by some of these societies that damage to the genitals will eliminate female adultery, thus male members of such societies will not marry a woman unless her genitals have been mutilated. Other societies regard FGM as a way of purifying a woman and unscathed genitals are perceived as ugly and perilous to a man or baby during sex or childbirth. Furthermore, it is also believed that FGM enhances fertility, makes childbirth safer, makes a woman's face more beautiful, and prevents lesbianism, vaginal cancer, masturbation, conception and the development of nervousness in girls and women.

FGM is primarily a culture-linked practice, and the Muslim religion is frequently cited as a reason for it. Many of those who oppose mutilation deny any link between the practice and religion, but Islamic leaders have not reached a consensus on the subject. Christian missionaries in Africa who attempted to discourage the practice found the custom to be too deep-seated, and in some cases, in order to increase the number of converts to christianity, they ignored or even encouraged the practice.

There are three types of Female Genital Mutilation: sunna circumcision, clitoridectomy,

and infibulation (pharaonic circumcision). Sunna circumcision consists of the removal of the prepuce (retractable fold of skin, or hood) and /or the tip of the clitoris. Clitoridectomy consists of the removal of the entire clitoris (prepuce and glands) and the removal of the adjacent labia. The most severe form, infibulation, consists of clitoridectomy, excision (removal of all, or part of, the labia minora), and cutting of the labia majora to create raw surfaces, which are then stitched or held together in order to form a cover over the vagina when they heal. A small hole is left to allow urine and menstrual blood to escape. In some less conventional forms of infibulation, less tissue is removed and a larger opening is left. Women who are infibulated have to be cut open to allow sexual intercourse, and more cuts are needed for delivery of a child. Then the wives are traditionally re-infibulated. The procedure is carried out anywhere from just after birth to sometime during the first pregnancy, but most cases occur between the ages of four and eight.

These mutilations can have dangerous side effects, including death. Other results include serious infections (i.e. HIV), abscesses and small benign tumors, hemorrhages, shock, and clitoral cysts.

The long term effects may also include kidney stones, sterility, sexual dysfunction, depression, urinary tract infections, and various gynecological and obstetric problems.

Female Genital Mutilation is reportedly practiced in more than twenty-eight African countries and in the Middle Eastern countries of Egypt, Oman, Yemen and the United Arab Emirates. It is also practiced in Asia, among certain indigenous groups in Central and South America, among Muslim populations in Indonesia, Sri Lanka and Malaysia, and a small Muslim sect in India. In industrialized countries, genital mutilation occurs among immigrants from countries where mutilation is practiced. It has been reported in Australia, Canada, Denmark, France, Italy, the Netherlands, Sweden, the United Kingdom and United States. Doctors from their own communities illegally operate on girls or female infants living in industrialized nations. More frequently, traditional practitioners are brought into the country or girls are sent abroad

to be mutilated. No figures are available on how common the practice is among the populations of industrialized countries.

Ever since FGM's recent recognition (within the past three years) as an international human rights issue, the World Health Organization, the United Nations Children's Fund and the United Nations Population Fund revealed a plan in April 1997 intended to produce a major decrease in the incidence of FGM within ten years and the complete elimination of the practice within three generations. Amnesty International has also resolved to do away with the practice of female mutilation. The plan for the eventual elimination of FGM is two-fold: the prohibition of female circumcision by law and more importantly, the education of the public with emphasis on the dangers and undesirability of female circumcision.

Maternal Health

According to the Safe Motherhood Organization, a woman's lifetime risk of maternal death is almost forty times higher in the developing than developed world; one woman in every 1,800 will die from pregnancy-related complications in developed countries, while in developing countries the lifetime risk is one in forty-eight.

The main cause for this contrast is that in developing nations, adequate supplies and practitioners are not available throughout pregnancy. Other obstacles include cost, distance and lack of transport, and cultural factors. Millions of women cannot afford the costs of the services of practitioners even when they are free; they do not have enough money to pay for transportation, prescription drugs, or medical supplies. Often, women in rural areas do not reach a healthcare facility in time to give birth, because they have no other alternative but to walk there while in labor. Many women in developing nations may also mistrust practitioners who do not adhere to the women's traditions or preferences (e.g., privacy, birth position, or treatment by females). In many cases, women in developing countries don't have the right to make choices about personal health because of tradition, family, and laws on child-bearing, contraception, initiation of sexual rela-

tions, and if and when to seek medical care. For example, a woman may have to ask her husband's or mother in law's permission to visit a doctor even in life-threatening situations. Many women in developing nations die from complications during pregnancy including severe bleeding (hemorrhage), infection, obstructed labor, and hypertensive disorders.



Women throughout the world also die from having unsafe abortions. According to the Alan Guttmacher Institute, forty-six million women around the world have abortions each year. Of these women, seventy-eight percent live in developing countries and twenty-two in developed countries. The incidence of unsafe abortions is very high, resulting in severe health problems and death. Alexander Sanger, chairman of the International Planned Parenthood Council, explained, "Women who resort to abortion in third-world countries are often desperate... They're going to untrained practitioners in unsanitary conditions and dying as a result, usually from infection." In countries where abortion is illegal, women seek "underground" abortions which are equally unsafe.

Women who have children are sometimes unaware of the importance of breast-feeding, which is essential for insuring the life-long health

of a child. Yet, according to WHO, only one in three infants is exclusively breastfed during the first four months of life. Major causes of malnutrition in young children include the uninformed substitution of nutritionally inadequate or contaminated food for breast milk and replacing breast-feeding with food too early or too late. As a result babies are at risk of illness and death.

Women's health, especially during pregnancy and childbirth, is of paramount importance. It is ultimately a mother's health which will determine the health of her children.

International Health Organizations

Amnesty International

Amnesty International is an independent non-governmental organization (NGO) that fights for human rights; it focuses on ending abuse, advocating freedom of speech, and ending inequality amongst all people. The organization spans the globe, monitoring the status of peoples' rights in over 150 countries with the aid of nearly 1.8 million supporters. Amnesty International earns money solely through donations and fundraising and does not rely on support from governments or political institutions.

Local Amnesty International offices fundraise in their regions to support its global mission. Its campaigns concentrate on issues established in the Universal Declaration of Human Rights. Amnesty International attempts to secure a fair trial for political prisoners, prevent torture and cruelty, end unjust methods of punishment such as the death penalty, and have prisoners tried under internationally acceptable methods. It lobbies governments to adopt the rights granted to humans in the Universal Declaration of Human Rights. The organization also establishes clubs in schools worldwide to educate youth on the injustices suffered by humans.

At times, Amnesty International will contact correspondents from all over the world to circulate the story of a victim. Publicity is often the only hope for a political prisoner and his or her family in the fight to protect inalienable human rights and freedom from unjust persecution.

Human Rights Watch

Human Rights Watch, the largest human rights organization (based in the U.S.), investigates human rights violations all over the world. It then publicizes its findings in a variety of ways, generating extensive coverage in local and international media. This publicity helps to shame abusive governments in the eyes of the general public. Human Rights Watch then meets with government officials to fight for changes in policy and practice at the United Nations, the European Union, and in various capitals around the world. In extreme circumstances, Human Rights Watch presses for the withdrawal of military and economic support from governments that violate the rights of their people. In moments of crisis, Human Rights Watch provides up-to-the-minute information about conflicts while they are underway, facilitating the aid process, and protecting the rights of the citizens. They successfully led an international coalition to press for the adoption of a treaty banning the use of child soldiers. Currently, approximately 300,000 children are serving in armies or rebel forces around the world. This treaty raised the minimum age for participation in armed conflict to eighteen.

Human Rights Watch was also among the first to call for an international war crimes tribunal for the former Yugoslavia and has worked extensively with the tribunal's investigators and prosecutors. Six of the seven counts on which the tribunal finally indicted Yugoslav President Slobodan Milosevic in 1999 were cases that Human Rights Watch had documented in Kosovo. To maintain its independence, Human Rights Watch does not accept financial support from any government or government-funded agency. Instead, it depends entirely on contributions from private foundations and individuals.

Médecins Sans Frontières (Doctors Without Borders)

Médecins sans Frontières (MSF), also known as Doctors without Borders, is a private non-profit organization dedicated to provide aid and support to the victims of emergency disasters around the world. The MSF staff consists of professional volunteers, such as nurses, doctors,

and technicians. Doctors without Borders relies on private funding from individuals, foundations, corporations, and the United States and other governments for financial support. In 2003, more than eighty-five percent of donations were spent on program services.

MSF has identified situations that require their involvement, including war and conflicts, refugees and displaced people, and natural or man made disasters. In regions where war and conflicts suddenly occur, MSF sends a staff of surgeons, operating-room nurses, and anesthesiologists who are equipped with operating utensils, tables and hygienic equipment.

Throughout the last thirty years the refugee population has rapidly grown from two million in the 1970's to nearly thirty-nine in today's population. To deal with this epidemic, MSF works with many non-governmental organizations, local health authorities, and the United Nations High Commissioner for Refugees (UNHCR). Together they provide primary medical assistance, immunization, nutrition and clean water, and sanitation services to the men, women and children living in refugee camps all around the world.

To prepare for a natural or man-made disaster, Doctors without Borders store kits containing medical and technical equipment. When disaster strikes, help can be dispatched quickly and efficiently.

This organization is also involved with countries that are in need of long-term assistance. Under these circumstances, MSF in cooperation with the country's Ministry of Health, works to restore hospitals and medical stations. Their aim is to build an independent local health care structure by training local staff.

Currently, MSF is helping crippling situations like those in Sudan. Thousands of volunteers and national staff are aiding more than 700,000 refugees, among them malnourished children suffering from respiratory infections, diarrhea, hepatitis E and malaria.

Médecins Sans Frontières was founded in 1971 by a group of French doctors who believed that everyone has the right to medical care regardless of their social or political status, race, or religion. The organization has grown to

become the world's largest independent medical relief agency. Rony Brauman, MD, the former president of MSF said, "We are by nature an organization that is unable to tolerate indifference. We hope that by arousing awareness and a desire to understand, we will also stir up indignation and stimulate action." Through its Access to Essential Medicines Campaign, it raises awareness of the plight of populations.

The National Institutes of Health

The National Institutes of Health (NIH) was founded in 1887 and is known today as one of the leading medical research centers in the world and the focal point of Federal medical research in the US. The organization is comprised of twenty-seven institutes and centers and is one of the eight health agencies of the Public Health Service, part of the US Department of Health and Human Services. The goal of NIH research is to acquire new knowledge in the field of medicine to help prevent, detect, diagnose, and treat diseases and disabilities of all kinds.

The NIH works towards this goal not only by conducting research in facilities of its own, but also by supporting the research of non-governmental scientists in universities, medical schools, hospitals, and universities internationally. The NIH also supports the training of research investigators and facilitates the widespread communication of medical and health science information.

Oxfam

Oxfam is a worldwide charity organization whose primary mission is to aid people affected by war and crisis by providing water supplies, and shelter; working to reduce poverty; and lobbying for rights for the poor. It initially began in 1942 under the title of the "Oxford Committee for Famine Relief," with the purpose of monitoring and informing governments about problems caused by the Nazi occupation. The organization's name changed several years later to "Oxfam" because of its telegraph address. Over the next several decades, Oxfam aimed to educate people in western nations about the poverty in the southern hemisphere and to develop methods to curtail poverty. Oxfam has aided many

people throughout the world, teaching them more efficient farming methods and how to improve their own health conditions.



Oxfam has spearheaded illustrious campaigns against issues such as the large-scale famine in Ethiopia in the 1980s. It spent nearly £25 million of its revenue on sanitation and water purification alone for the humanitarian crisis in the region. In 1994, Oxfam ensured that the refugee camps during the political crises in Rwanda and Zaire were equipped with proper sanitation. Oxfam also launched programs for the Eastern-bloc countries after the fall of communism, and provided aid for refugees during the war in Yugoslavia.

Oxfam obtains funds through donations and the sale of goods in its stores in Britain and throughout the world. In 1995, Oxfam and twelve charity organizations worldwide merged and became Oxfam International. It continues to look for ways to alleviate poverty and ameliorate the

The Safe Motherhood Initiative

One of the major global health challenges today is to prevent the deaths of mothers and babies during pregnancy and childbirth. The

World Health Organization (WHO) estimates that approximately 530,000 women died during pregnancy and childbirth in 2000 alone. Although there are tremendous obstacles in the effort to reduce maternal mortality rates, the WHO has also noted that with the right kind of information and program goals, avoiding maternal deaths is possible even in the poorest countries.



In recognition of the seriousness of the threat to maternal health, the Safe Motherhood Initiative was launched in Nairobi, Kenya in 1987 and is now a worldwide effort. Safe Motherhood emphasizes various approaches to making pregnancy safer. These include providing medical care to mothers before, during, and after childbirth, providing emergency care if needed, and working to prevent and manage the complications of unsafe abortions. Safe Motherhood also emphasizes family planning, health education for adolescents, and community education for women, their families, and decision-makers.

Since the creation of the Initiative, governments have implemented programs to provide women with the knowledge and resources needed to make pregnancy and delivery safer. More women now have access to prenatal care so that potential causes of complications can be identi-

fied early. Efforts have also been made to improve means of transportation and medical care in cases of obstetric emergency.

In 1997, when the Initiative became ten years old, various reviews of country programs demonstrated that in order to continue making progress in maternal care, Safe Motherhood should also work to empower women to have access to education and other resources. Working to achieve equal rights for women and continuing to stress the importance of quality reproductive health care, Safe Motherhood hopes to achieve its goal of further reducing the number of unnecessary deaths during pregnancy and childbirth.

Save the Children

Save the Children is a nonprofit organization active in over forty countries, which focuses on improving the lives of children in need.

Save the Children began in 1932, when a group of people in New York City started to give aid to children who were impoverished during the Great Depression. The organization works to give individuals and their communities a way to help themselves, rather than simply donating basic necessities. Their approach focuses on working with families to better the lives of children and trying to help people reach self-sufficiency.

Over time, Save the Children has grown into "a leading international relief and development organization." It is active in seventeen states across America, and in forty other countries throughout the developing world. When required, the organization also mobilizes life-saving assistance to aid children and families affected by large-scale natural and man-made disasters. Save the Children is also a member of the International Save the Children Alliance, which in turn is made up of twenty-nine independent national organizations working in over one hundred countries toward the common goal of bettering the lives of children around the world.

UNAIDS

With the spread of the HIV/AIDS virus in recent years, it became clear that the intervention of the United Nations was necessary to find a solution within the global community. As a result

of the increasing necessity to stop the spread of the pandemic, a resolution was passed in 1994 for the creation of a body to cope with the issue: UNAIDS.

The organization works in conjunction with a number of other agencies within the UN, such as WHO (World Health Organization), UNDP (United Nations Development Programme), UNICEF (United Nations Children's Fund), UNESCO (United Nations Educational, Scientific and Cultural Organization), UNFPA (United Nations Population Fund), as well as the World Bank. With the assistance of these different UN organizations, UNAIDS is able to tackle the rapidly spreading disease from different angles. Because of this multi-directional method, world leaders are optimistic that it will be only a matter of time before a cure is found. As stated in the Millennium Development Goals Declaration, "world leaders resolved by 2015 to have halted and begun to reverse the spread" of the disease.

UNDP

The United Nations Development Programme (UNDP) helps global development and advocates "change and connecting countries to knowledge, experience and resources to help people build a better life." It is active in 166 countries, and world leaders have pledged to work on its Millennium Development Goals which aim to develop democratic governance, help with crisis prevention and recovery, solve problems involving energy and the environment, reduce the incidence of HIV/AIDS, and cut poverty in half by 2015.

UNHCR

The Office of the United Nations High Commissioner for Refugees was established on December 14, 1950 by the United Nations General Assembly. The aim of UNHCR is to protect the rights of refugees and help them find safety or refuge in another state with the option of being able to return home voluntarily. It focuses on the needs of children and promotes gender equality. In essence, the UNHCR promotes the principles of the United Nations Charter by helping to maintain international peace, developing friendly relations among nations, and protecting

the fundamental rights of human beings.

In more than five decades, the agency has helped approximately fifty million people rebuild their lives. Today, a staff of more than six thousand people in more than 116 countries continues to help some seventeen million displaced people worldwide.

UNICEF

The United Nations Children's Fund (UNICEF) is an organization dedicated to universally improving the health, education, and equality of children. UNICEF supports children by, among other things, packaging goods for expectant mothers, using cost-effective methods to improve children's lifestyles, encouraging and funding education, and involving communities and governments in the ongoing process of ensuring children's rights.

In the 1940's and 1950's, UNICEF provided food and basic healthcare supplies to children in war-torn countries. This was followed by their expansion to aid children who were faced with life-threatening health problems in developing nations in the 1960's and 1970's. In the 1980's, UNICEF launched a worldwide "revolution" that was meant to improve child survival statistics. Since the 1990's, UNICEF has continued these commendable efforts and has developed a set of global health goals focused on the health of children. UNICEF not only promises to provide children with supplies that satisfy their immediate needs but also to maintain their health thereafter and contributing to the ultimate goal of a safe and happy childhood.

Conclusion

While the problems discussed in this working paper are not imminently solvable and the future anything but reassuring, we hope that these articles are a beginning in inspiring action that will effect change. It is our sincerest desire that this working paper not only provide a solid foundation for active participation in this year's conference, but that with a greater awareness of the state of global health, the reader may also come to understand the responsibility each one of us has to ensure our personal health and to protect the health of those around us, as well as the world at large. From the environment itself to cultural practices, from poverty to unequal medical care, human health suffers and demands a response from the developed and developing worlds. Global communications in the twenty-first century could transmit powerful forces to help find solutions. The best thing nations can do to decrease the occurrence of disease is to educate their citizens on how to prevent it and to help them accomplish it; the best thing we as individuals can do is to educate ourselves and to positively influence others. We trust that we have made a contribution with this working paper.

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