

mind•full: a brainsnack for future leaders with ethical appetites

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war and disease

Disease is an often unrecognized weapon of war. It silently claims lives throughout a conflict and long after a cease fire has been signed. War and disease have accounted for millions of deaths globally. In fact, William Foege's study on arms and public health claims that throughout history infectious diseases have killed more soldiers than have weapons. While today's soldiers are less likely to die from war-related diseases, their effects on civilian populations living in wartime remain a serious concern.

The socioeconomic and political disruption brought about by war often leads to extreme poverty, displacement, unhygienic conditions, and health problems. The collapse of social systems and the creation of refugee populations promote an environment where disease can thrive. For example, cases of malaria, cholera, typhoid fever, and polio tend to increase during civil strife.

The scarcity of food and medical supplies during war often reinforces and intensifies existing conflicts. The demand for increasingly scant resources breaks down the national infrastructures required for health and well being. In addition, this lack of basic necessities sometimes fuels conflict. International humanitarian efforts to intervene by delivering relief supplies or other aid may help defuse growing tensions, but such attempts are often insufficient or ineffective.

The international community recognizes the need to protect civilians in war. However, new programs to strengthen public health often encounter difficulties in times of conflict. With modern developments in technology and growing interdependence among nations, the link between disease and war is a matter of global concern.

The mission of Student Pugwash USA is to promote the socially responsible application of science and technology in the 21st century. As a student organization, Student Pugwash USA encourages young people to examine the ethical, social, and global implications of science and technology, and to make these concerns a guiding focus of their academic and professional endeavors.

The **mind•full** series encourages readers to explore crucial ethical dilemmas associated with the application of science and technology.

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go figure!

Devastation caused by war and disease extends into all sectors of society. As a country uses more of its resources for wartime activities, leaders often give less money and political attention to the social systems which care for the most vulnerable in the population. Consistent data revealing the short and long term effects of the combination of disease and war are unavailable. But, a composite of statistics and information can be used to create a more complete picture.

20th century

- Between 40,000 and 45,000 Rwandan refugees may have died from cholera or dysentery (80-90 percent of all deaths) during the first month after their arrival in Zaire's Goma region in mid-July 1994 (Goma Epidemiology Group, quoted by Michael J. Toole, in Levy, p 204).
- In the Angolan civil war, the total number of deaths in 1993 was approximately 20,000. When estimating all war-related deaths in Angola, including victims of war-induced starvation and disease, the UN suggests 450,000-500,000 deaths between October 1992-December 1993 (SIPRI, quoted by Carter Center).
- Nearly 500,000 children may have died since the beginning of the Persian Gulf War, largely due to a resurgence of diarrheal and vaccine preventable diseases and malnutrition (Eric Hoskins, in Levy, p 254).

43,920,000 military deaths

62,194,000 civilian war-related deaths

- In Somalia, nearly all children in rural areas were said to suffer from malnutrition by the time Western governments began to send relief in mid-1992. By December 1992, an estimated 400,000 deaths from starvation were recorded for that year (IISS, p 184).
- In 1965, there were only 150 doctors to treat over 15 million people in South Vietnam (excluding military doctors and those who would treat only paying patients). During the war, tuberculosis, intestinal parasites, leprosy, and malaria became major causes of morbidity. Incidence of cholera, plague, and human rabies increased. In the South Vietnamese budget for 1973, 53 percent went to national defense, and less than one percent went to public health. Of US aid to South Vietnam that year, 76 percent went to the military and 0.5 percent to public health (Myron Allukian and Paul Atwood, in Levy, pp 219-220).
- The risk of spread of sexually transmitted disease increases in war. Estimates of the number of women raped in Bosnia run from 10,000 to 60,000. This includes the systematic rape of girls as a strategy of war (Mary-Wynne Ashford and Yolanda Huet-Vaughn, in Levy, pp 188-189).

109,745,500 people have died

Sources: Figures for 20th century war and war-related deaths down center of page are from *World Military and Social Expenditures 1996*, Ruth Leger Sivard. Washington, DC: World Priorities, 1996. These numbers do not add up because a breakdown of civilian and military deaths is not available in all cases. Other sources: *War and Public Health*, Barry Levy and Victor Sidel (ed). New York: Oxford University Press, 1997. *Strategic Survey 1992-1993*, London: International Institute for Strategic Studies and Brassey's, 1993. *In Her Life Time: Female Morbidity and Mortality in Sub-Saharan Africa*, Christopher Howson, et. al. (eds). Washington, DC: National Academy Press, 1996. *1994-1995 State of the World Conflict Report*, Carter Center Web Site, http://www.emory.edu/Carter_Center.

in control or out of it ?

The international community responds to the effects of war and disease in a variety of ways. One of the more direct methods is to limit weapons which contribute to disease. In addition, states unite in humanitarian efforts to provide relief to civilians in conflict and to track outbreaks of disease. While these steps can minimize the worst effects of war and disease, many agree that the process suffers from a lack of political resolve and international coordination.

After World War I, international pressure began to surface to limit chemical and biological weapons. In 1975, the US ratified both the 1925 Geneva Protocol and the 1972 Biological Weapons Convention, which together prohibit the use, development, production, and possession of biological weapons and their means of delivery. The Chemical Weapons Convention will become international law in April 1997. Although the treaty has not yet been ratified by either the United States or Russia, the lack of their signatures will not stop its entry into force. The treaty will prohibit the development, manufacturing, and stockpiling of chemical weapons. Critics point to verification difficulties as a major stumbling block to the success of these efforts to control these weapons.

Individuals have the right to a "standard of living adequate for . . . health and well-being," according to the 1948 United Nations Universal Declaration of Human Rights. In addition, the United Nations Convention on the Rights of the Child declares that states will "take all feasible measures to ensure protection and care of children who are affected by an armed conflict." However, the rights guaranteed by these agreements are continually threatened in times of conflict. There is an extensive network of organizations that responds to health crises arising from war and social unrest,

geek speak

disease*—refers to a situation in which infection has elicited signs and symptoms in the infected individual;

epidemic*—the condition in which a disease spreads rapidly through a community in which that disease is not normally present or is present at a low level;

internally displaced people—those who have fled for similar reasons to refugees but who have not crossed into another country;

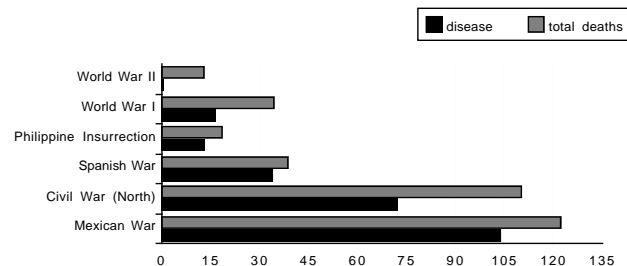
pandemic*—an epidemic that is worldwide;

refugees—people who have crossed an international border and been granted asylum in another state.

Source: *Emerging Infections: Microbial Threats to Health in the United States, Institute of Medicine. Washington: National Academy Press: 1992. All other definitions from: *The State of the World's Refugees: In Search of Solutions*, United Nations High Commissioner for Refugees. New York: Oxford University Press, 1995.

deaths per 1,000 US soldiers per year of warfare and cause of death

	battle deaths		non-battle deaths		total deaths
	killed in action	died of wounds	disease	injury	
Mexican War	9.9	4.8	103.9	3.7	122.3
Civil War (North)	21.3	13.6	71.9	3.4	110.2
Spanish War	1.9	0.8	34	2	38.7
Philippine Insurrection	2.2	0.6	12.9	2.8	18.5
World War I	12	4.4	16.5	1.4	34.3
World War II	9	1.1	0.6	2.2	12.9



Source: *Battle Casualties: Incidence, Mortality, and Logistic Considerations*, GW Beebe and ME deBakey. Springfield: Charles Thomas, 1952. Quoted in *War and Public Health*, Barry Levy and Victor Sidel (eds). New York: Oxford University Press, 1997, p. 31.

including: international organizations, such as the World Health Organization; governmental organizations, such as the United States Agency for International Development; and non-governmental organizations, ranging from the International Committee of the Red Cross to Doctors Without Borders.

These agencies can get essential medicines, food, and services to people in conflict in a variety of ways. For example, during the Afghan War in 1994, the World Health Organization orchestrated a cease-fire between warring factions in order to carry out an extensive week-long immunization campaign. In other conflicts, peace corridors have been created for the delivery of necessities. Relief camps are often needed, where refugees can receive basic services. The number of refugees often overwhelms the available space and staff, as well as medical, food, and water resources, often causing these camps to become hotbeds for famine and disease.

fighting, famine, and disease

War and civil turmoil can lead to starvation and famine. Whether a regime denies food to the population as a means of control or the breakdown of infrastructures limits access and availability, famine creates new opportunities for diseases to flourish. Upper respiratory infections, fever, diarrheal diseases, tuberculosis, cholera, and malaria often accompany starvation.

Civil wars in many African countries have caused extensive starvation. In Somalia, according to the International Institute for Strategic Studies, roughly 400,000 people died from starvation in 1992 alone. Michael J. Toole estimates that the prevalence of acute malnutrition among children less than five years of age was as high as 50 percent among Ethiopian refugees in eastern Sudan in 1985, and 45 percent among Sudanese refugees arriving in Ethiopia during 1990. These are just a few examples of a widespread problem.

It is difficult to control infectious diseases which are caused by starvation during wars and civil strife. Because relief workers and the food supplies they deliver are difficult to protect, humanitarian responses from other countries often do not reach those who need it most. The World Health Organization and other non-governmental organizations have been developing new approaches to cope with these adverse conditions. For example, WHO has strengthened its capacity to monitor diseases so the international community can provide medical supplies to countries and areas in need.

a chemical storm in the desert?

After US soldiers returned from fighting in Iraq, many started to report strange symptoms, including gastrointestinal dysfunction, severe fatigue, chronic headaches, joint aches, and memory loss. These symptoms are the core of the debate over the controversial Gulf War syndrome. There is widespread disagreement between experts, soldiers, and the general public as to the existence and severity of the syndrome.

Despite the lack of hard proof, those who assert that this illness exists believe that it could be the result of exposure to a combination of some or all of the following: uranium, untested vaccines, herbicides and insecticides, and nerve gas stored in Iraq. The report by the Presidential Advisory Committee on Gulf War Veterans' Illnesses, presented on January 7, 1997, concluded that there is no single disease which can be classified as the Gulf War syndrome. Further, the report claims that stress is an important factor that needs further study.

After heavy criticism of slow results, limited research, and the continued belief by many military personnel that they are afflicted with the same illness, the government is continuing to conduct internal reviews, external investigations, and research and outreach programs. President Clinton extended the committee's investigation past the original expiration date of January 1997.

(anything but a) conclusion

War and disease fuel each other in a vicious cycle. As borders become less effective in controlling their spread, it is possible that the next century may see increasingly devastating military and humanitarian crises.

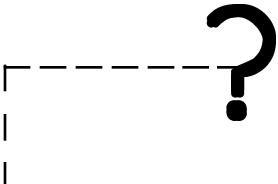
This is a time of growing interdependence, as well as divisive domestic and international strife. Nations can take measures that build on commonalities and limit social, economic, and political disruption. We have the technical capabilities to limit the spread of war, disease, and famine through proactive measures. The question is, do we have the will?

How do **you** answer the **tough questions**.....

The mainstream media often covers crises only when they reach a breaking point. Some say the media too often ignores steps that foreshadow a conflict or humanitarian disaster. Do you think the media has a special role to play in decreasing the impact of war and disease? If the media were a proactive force, would politicians and the public act to stop conflict before it erupts? Do you think the media already supplies enough information and that the public does not act for some other reason?

According to the Convention on the Rights of the Child, signed by a majority of countries, "States Parties shall take all feasible measures to ensure protection and care of children who are affected by an armed conflict." Statistics gathered by UNICEF indicate that over the past decade 2 million children died from war, 4-5 million became handicapped or disabled, and 12 million lost their homes as a result of war. Do you agree that states have a special responsibility to protect children in war? What do you think statistics such as these indicate about states' commitments to the Convention? What additional steps do you think leaders should take to uphold the Convention?

.....
● The breakdown of water systems during war dramatically increases the spread of disease and famine and leads to other political and socioeconomic repercussions. Do you think people have a fundamental right to clean water? If yes, who do you think is responsible for guaranteeing water quality and availability in times of conflict—is it only a domestic responsibility or should the international community get involved? At what point do you think it becomes a global concern?
.....



After the reports of widespread and systematic rape in Bosnia, rape is now considered a war crime. Do you agree that rape should be a war crime? Do you think that people who contract diseases through rape and sexual assault should be considered "official" casualties of war?

War is a major cause of disease. Are those who provide weapons of war—arms traders and manufacturers—responsible for the victims of war? Does your answer change if the victim is not directly wounded by the weapon, but contracts a disease caused by indirect effects of that weapon?

In time of war, when the incidence of disease often increases dramatically, do nations with appropriate resources have the responsibility to share their knowledge, technology, and money to help alleviate or eliminate many of the illnesses? If you think they do, what form of support should they provide? What should the international community do if the warring parties don't want them to intervene?



Should official statistics include people who die from war-related diseases as casualties of war? What would be the implications of this? How do you think including these broader figures would change our perceptions of war and its impact?

The United States has resisted signing the Chemical Weapons Convention, in part because of its provisions on verification. Critics fear these measures could result in industrial espionage and decreased national sovereignty. Proponents, including many in the chemical industry, do not see these threats materializing. Do you think countries should be willing to offer access to information and on-site inspections in order to ban chemical weapons? Why? Do you think the international community was right to demand access to Iraq's sites after the war? Do you think Iraq should have the same right to request inspections of US sites? Why or why not?

Do you think strengthening local, national, and global health systems can help prevent war? If so, how?



If a country has limited resources and is equally threatened by internal conflict and high infant mortality rates, do you think it should put more of its resources toward the military or toward health services? If it were your decision, how would you decide?



What long term effects do you think arise from having so many young people suffering from war, famine, and disease? Do you think such conditions foster a culture of violence? If yes, how do you think we can break this cycle?

infect yourself . . . with knowledge

- *Biological Warfare in the 21st Century*, Malcom Dando. London: Brassey's Ltd, 1994.
- *The CBW Chronicle*—a quarterly net zine on chemical and biological weapons, provided by the Stimson Center. Available on the Web—<http://www.stimson.org/pub/stimson/cwc/chron.htm>.
- *Crosslines Global Report*—a Geneva-based monthly magazine on current international and humanitarian crises. E-mail: crosslines@aol.com.
- *Environmental Scarcity and Violent Conflict: The Case of Rwanda*, Valerie Percival and Thomas Homer-Dixon—The Project on Environment Population and Security, University of Toronto, June 1995.
- *Evolution of Infectious Disease*, Paul Edwald—has an excellent section on war and virulence. Oxford: Oxford University Press, 1994.
- *A Framework for Survival: Health, Human Rights, and Humanitarian Assistance in Conflicts and Disasters*, Kevin Cahell—an interesting exploration of wars, conflicts, and disasters and the international response. New York: Basic Books and the Council on Foreign Relations, 1993.
- "Health and International Security," Jack Chow—*The Washington Quarterly*, Vol. 19, Number 2, Spring 1996.
- *In Her Life Time: Female Morbidity and Mortality in Sub-Saharan Africa*. Christopher Howson, et. al.—links oppression, war, and poverty to women's health in Africa. Washington DC: National Academy Press, 1996.
- "The Hour of Departure: Forces that Create Refugees and Migrants," Hal Kane—*Worldwatch Paper*, No. 125, June 1995.
- *Man and Microbes: Diseases and Plagues in History and Modern Times*, Arno Karlen—includes information on the interrelationship of disease and war. New York: G.P. Putnam's Sons, 1995.
- *Plagues and Peoples*, William H. McNeill—a classic about the historical relationship of disease and war. New York: Doubleday, 1976.
- *Rats, Lice, and History: A Bacteriologist's Classic History of Mankind's Epic Struggle to Conquer the Scourge of Typhus*, Hans Zinsser—discusses how epidemics and infectious diseases have affected the socioeconomic and political structures of society throughout history. Boston: Little, Brown and Company, 1963
- *The Seventh Seal*—an old Bergman movie about a 13th century knight who battles war and plagues as he attempts to go home.
- *The State of the World's Refugees: In Search of Solutions*, Raymond Hall, Jeff Crisp, and Marina Runday-Cao (editors)—a detailed look at the refugee crisis, its causes, and its possible solutions. Oxford: Oxford University Press, 1995.
- *Twelve Myths about the Chemical Weapons Convention*, Business Executives for National Security (BENS)—a pamphlet which debunks twelve of the most common myths about the CWC. Order through BENS Web site—<http://www.bens.org>.
- *War and Public Health*, Barry Levy, and Victor Sidel (editors)—a must read. Contains current statistics and background information. One of the few comprehensive sources on the topic. Oxford: Oxford University Press, 1997.
- *World in Crisis*, Doctors Without Borders—examines ways to address war and disease. Order through Doctors Without Borders Web site—<http://www.msf.org/publicat/pub.htm> (excerpts are available on-line).

check it out !

cyberspace

top picks

- International Committee of the Red Cross (offers up-to-date information that draws explicit connections between modern day wars and disease. There is an excellent section on international humanitarian law which focuses on women, children, famine, and war)—<http://www.icrc.org>
- Carter Center (great information on the state of current conflicts, war's effects on public health, and good links to other Web sites)—http://www.emory.edu/CARTER_CENTER

best of the rest

- American Public Health Association—<http://www.apha.org>
- Centers for Disease Control and Prevention—<http://www.cdc.gov>
- Doctors Without Borders—<http://www.msf.org>
- Federation of American Scientists Program for Monitoring Emerging Diseases (ProMED)—<http://www.fas.org/promed>
- Gulf War Syndrome (provides up to date information on the syndrome, steps taken, and hotlines)—<http://www.dtic.dla.mil/gulfink>
- International Physicians for the Prevention of Nuclear War—<http://healthnet.org/IPPNW/IPPNW.html>
- Physicians for Social Responsibility—<http://prometheus.nucmed.buffalo.edu/psr/>
- Refugees International—<http://www.refintl.org>
- Relief Web (UN based site with current info, raw data, a major umbrella site for the humanitarian biz)—<http://www.reliefweb.int>
- United Nations Children's Fund (UNICEF)—<http://www.unicef.org/>
- United Nations High Commission for Refugees (excellent information and graphics)—<http://www.unhcr.ch>
- UNHCR Refworld (database of humanitarian documents)—<http://www.unhcr.ch/refworld/refworld.htm>
- World Health Organization—<http://www.who.ch>

catch the web fever!

This **mind•full** was written by Constance Lassiter and Jennifer Seltzer. Constance is a pre-med student at Howard University and a Student Pugwash USA program assistant. Jennifer is a program fellow at Student Pugwash USA. Special thanks to Dr. Martin Kaplan, Pugwash Conferences on Science and World Affairs, and Ingrid Acevedo and Lynn Stratford, US Committee for UNICEF for their comments. Any errors are the responsibility of Student Pugwash USA.

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but wait, there's more!

- **mind•full: a brainsnack for future leaders with ethical appetites.** Other issues available upon request: international weapons trade, emerging infectious diseases, access and the Internet, public's role in science, future of nuclear weapons, water quality and availability. Upcoming issue in April 1997: alternative energy sources.
- **Jobs You Can Live With: Working at the Crossroads of Science, Technology, and Society.** The fifth edition of the Student Pugwash USA internship directory. It highlights approximately 200 organizations that work to promote the ethical use of science and technology and provides suggestions on how to go about the internship and job search.
- **The Global Issues Guidebook.** A student-authored discussion and classroom resource on science, technology, and society issues.
- **Pugwatch.** The chapter newsletter.
- **Chapter Organizing Guide.** Provides chapter members with an A to Z guide to getting a campus-based chapter up and running.
- **Tough Questions.** Student Pugwash USA's newsletter.

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