Chapter Three

Global Communicable and Chronic Disease

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Chapter Objectives

After studying this chapter you will be able to:
1. Define epidemics and pandemics.
2. Define communicable, recurring, and chronic diseases and give three examples of each.
3. Compare the health consequences of communicable diseases in developed versus developing countries.
4. Compare the health consequences of chronic diseases in developed versus developing countries.
5. Explain the role of chronic diseases in assessing quality of life.
6. Identify and describe the mission of three international health organizations.
7. Explain how health policy contributes to individual health outcomes.
8. Explain the effects of individual health outcomes on the family, community, society, and country.
OPENING STORY: MAN WITH DRUG-RESISTANT TUBERCULOSIS CAUSES INTERNATIONAL HEALTH SCARE

Andrew Speaker probably did not intend to cause an international health incident when traveling by plane in May 2007. He just wanted to attend his own wedding in Greece and then fly to Rome for his honeymoon. But Mr. Speaker faced a major obstacle. He was under medical care for pulmonary tuberculosis, and he was advised not to travel (Markel, Gostin, & Fidler, 2007). Tuberculosis (TB) is a communicable disease that can be spread when TB germs, sometimes called bacilli, are propelled from a contagious person’s cough, sneeze, talk, or spit, sending the TB germs airborne to other persons sharing the same airspace (CDC, 2007b; World Health Organization, 2007b).

Mr. Speaker was first diagnosed and treated for pulmonary TB in March of 2007, but the treatment was ineffective. Why? It appears that Mr. Speaker had an extremely drug-resistant form of tuberculosis. His form of TB was resistant to the primary and secondary antibiotics used normally to treat TB. Given the seriousness of his illness and the highly contagious nature of the disease, on May 10, 2007, public health authorities advised Mr. Speaker to avoid travel and to obtain special treatment (Markel, Gostin, & Fidler, 2007). Specifically, the Centers for Disease Control and Prevention (CDC) recommended that Mr. Speaker consider isolation or quarantine to prevent spreading the disease to others (CDC, 2007b).

With a wedding and bride-to-be waiting, Mr. Speaker decided not to follow medical and public health advice. Instead, he left two days earlier than planned to attend his wedding in Greece (Markel et al., 2007). Traveling by air, Mr. Speaker flew from Atlanta, Georgia, to Paris, France, on May 12 and then on to Greece. U.S. public health officials were unable to contact Mr. Speaker until May 22, when they eventually located him on his honeymoon in Rome, Italy. They again advised him not to travel and urged him to report to Italian health authorities. The U.S. health officials did not want Mr. Speaker to expose more people to his highly contagious illness. Unfortunately, on May 24, Mr. Speaker decided once again to disregard the health official’s advice. He flew from Prague in the Czech Republic to Montreal, Canada. By this time, U.S. public health officials had placed Mr. Speaker’s name on a health surveillance list: a procedure that would first detain Mr. Speaker when he attempted to reenter the United States and then notify public health officials. At least that was what should have happened.

What really happened? Mr. Speaker reentered the United States without being detained, and public health officials were not notified. When Mr. Speaker finally contacted health authorities, he was ordered to go to Bellevue Hospital in New York City. At Bellevue, federal officials found it necessary to hold Mr. Speaker in federal isolation for treatment. The last time such an order was issued in the United States was in 1963 to detain a person suspected of having smallpox (Markel et al., 2007). Meanwhile the Centers for Disease Control and Prevention (CDC) and other public health officials in several countries were sufficiently concerned about the health of the airline passengers who were on the same flights as Mr. Speaker that they contacted passengers they felt were most at risk for contagion and recommended that they be tested and evaluated for TB.

Mr. Speaker’s case illustrates one of the many reasons why health is considered a global issue (see Figure 3.1). International travel is one way in which communicable diseases such as TB can be transported to different countries. When traveling with a contagious disease, individuals risk
infecting other persons during their journey. During his trip, Mr. Speaker not only put fellow Americans at risk of contracting an extremely drug-resistant strain of TB, he exposed French, Czech, Italian, and Canadian citizens as well. Multiple national and international exposures to TB complicate efforts to control its spread and can create an international health crisis.

It might sound incredible, but in spite of Mr. Speaker’s travels to five countries while infected, his case caused only a minor international health incident. Make no mistake: The Canadian, Czech, French, and Italian governments were extremely concerned, and not at all pleased, to learn that the United States was unable to detain Mr. Speaker. But for the moment it appears that other travelers were not infected with Mr. Speaker’s active and contagious strain of TB. Thus, one reason Mr. Speaker’s case is seen as a minor incident is because health officials believe they managed to contain the potential damage.

The same cannot be said about the avian bird flu in 2005 or the “swine flu” in 2009. In 2005, the world became aware of a health crisis involving a virus that was transmitted from birds to humans. Between 2005 and 2006, more than 200 people in 13 different countries contracted the virus. As of 2006, six human deaths had been attributed to the avian bird flu (CDC, 2006). And, unlike the TB scare in 2007, most governments were unaware of the virus until incidences of the disease were reported among their populations. By the time health officials learned of the widespread impact of the avian flu, people in China and other countries in Southeast Asia, Northeast Africa, the Middle East, and Europe were becoming ill from the virus. The delay in notifying health officials allowed the virus to spread.

By comparison, Mexican authorities acted more quickly and with fuller disclosure when discovering incidences of a deadly “swine flu,” known medically as Type A/H1N1 influenza, in April 2009. Within weeks of the flu’s detection, Mexican health officials reported 81 deaths (rising to over 97 documented deaths shortly thereafter) in addition to thousands of incidences of illness thought to be associated with the A/H1N1 virus.

The warning about A/H1N1 came none too soon. Within days of notifying the World Health Organization, an international health organization that coordinates and at times implements global health policy (see Section II, Global Health Organizations, page 93), 11 additional countries also reported incidences of the disease. Some, like the United States, even reported deaths associated with the illness. The H1N1 flu, unlike Mr. Speaker’s TB incident, was an international health crisis because people in many different noncontiguous countries contracted the disease. The countries then braced for the impact of the illness on their citizens.

Mr. Speaker’s TB problem, the avian bird flu, and the A/H1N1 flu demonstrate that contagious diseases can and do travel across borders. Their ability to infect large numbers of people in
many countries can create global health problems of concern to many health professionals including psychologists. But, interestingly, global health problems give health psychologists an opportunity to study and test the effects of different health determinants in a variety of cultures such as individual and cultural behaviors, environment, health policy, and health systems on individual health outcomes.

In this chapter, we explore the impact of each of the determinants of health on the health status of people in countries around the world. We will pay particular attention to changes in health outcomes of people in economically prosperous nations, here referred to as **developed countries**, versus those in less economically advantaged, or **developing countries**.

We begin Section I with a brief review of nine of the most famous communicable diseases in history and explain their effects on communities. We continue with a discussion of childhood viral illnesses and the disparities in health outcomes for children who contract childhood infectious diseases in developed versus developing countries. We conclude Section I by explaining the role of childhood immunizations as an effective tool for improving health status, specifically mortality and morbidity rates, among children worldwide.

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**BOX 3.1  A 21st-Century Pandemic?**

It came as a shock to many. Was it really possible that the world was confronting a 21st-century global health scare that could become a pandemic? The World Health Organization, an international health organization, seemed to think so.

The exact origin of the disease and its progression is still unknown. But, at present, it appears that residents in a small town in Mexico or in the United States (a point debated by some Mexican and U.S. health officials; Lacey, 2009) became infected with Type A/H1N1 Influenza, a type of flu commonly found in pigs. Because of its prior association with pigs, the new disease was nicknamed the “swine flu.”

Epidemiologists realized that while the A/H1N1 Influenza was common among pigs, it was now spreading to humans as well. At first, the disease was communicated from animals to humans. As the illness spread, however, the method of transmission changed. Within a few short weeks, health researcher observed that the disease could be passed by humans to other humans, a process referred to as **human-to-human transmission**. Contact with an infected animal was no longer necessary.

When WHO officials realized the new danger of H1N1, they became concerned. Like other influenzas that are passed from person to person, the H1N1 was now capable of spreading quickly through a population. In fact, within weeks, more than eight countries reported actual or suspected cases of the flu. In response to the escalating threat, WHO issued a Phase 4 global threat warning to notify all countries of the potential of an imminent global health crisis; the threat level was elevated to Phase 6 by late June 2009 (see Figure 3.2).

The story worsened with each passing day. As of June 1, 2009, 62 countries were reporting a total of more than 17,410 confirmed cases of A/H1N1 virus. The United
States accounted for 51.5% (8,975) of the cases but only 10% (15) of the deaths. By comparison, only 28.8% (5,029) of the global cases of H1N1 were officially reported in Mexico, the site of origin of the disease (WHO, 2010b). Yet Mexico was responsible for more than 84% (97) of the deaths. The statistics made some wonder about the actual number of cases of A/H1N1 in Mexico. With more than 84% of deaths due to the flu, some researchers suggested that the over 5,000 cases of H1N1 in Mexico may not reflect the total number of people infected.

On the other hand, differences in infection and death rates for H1N1 led some epidemiologists to speculate that people in the United States and other countries had contracted a less severe strain of the flu than individuals in Mexico. The reason for the difference in severity could not be explained. Some speculated that better access to medical care may have reduced both the intensity and duration of the flu in the United States and other countries, while others suggested the possibility of a different strain of flu in Mexico versus other countries.

Equally uncertain is the final effects of the flu. The H1N1 flu is a new variant of Type A influenza. As such, there is no way to predict the likely course of the disease, its duration, the number of people to be affected, or the estimated mortality rates. One thing we do know, however: On average over 36,000 people die from complications associated with the seasonal Type A influenza every year. It is too soon to determine whether the 2009 outbreak of H1N1 will result in mortality rates that are similar to or that exceed the average outcomes for annual flu outbreaks.
Section I also explores chronic diseases, illnesses that result in lingering health problems and that limit an individual’s daily functioning. In this section, we examine two chronic illnesses: diabetes and chronic respiratory illnesses. (Other chronic illnesses, including heart disease, cancer, and arthritis, are explored in greater detail in Chapters 9 through 11). Again taking a global health approach, we explore the impact of chronic illnesses on populations in developed versus developing countries to illustrate the role of socioeconomic status and access to health care (a health systems determinant) on mortality rates and other health outcomes.

In Section II we introduce three international health organizations that provide health systems and health policy assistance to countries unable to provide such services themselves. We explore the international organizations’ roles in addressing the specific health promotion and health maintenance needs of the region.

By the end of Sections I through III you will be able to distinguish between chronic and communicable diseases and describe the global consequences of each, explain how individual behaviors, demographic factors (such as socioeconomic status), access to health care, and health policy result in different health outcomes, and finally compare the health of people living in developed versus developing countries.

Finally, in Section IV we explore the economic consequences of poor health. In this section we examine ways in which an individual’s health status can adversely affect his or her immediate family, in addition to the well-being of the community, society, and the nation.

**SECTION I. GLOBAL HEALTH PROBLEMS**

**Communicable Diseases: Human-to-Human Transmission**

**EPIDEMICS AND PANDEMICS** History shows us that for centuries communicable diseases have caused severe illness and death throughout the world. Table 3.1 identifies four of the most recent major global diseases over the past 600 years based on historical records (between 1347 CE to the present). Each of these diseases was transmitted by humans to other humans.

The first documented communicable disease occurred in 430 BCE in Greece. The origin of the disease, commonly referred to as the Athenian plague, is unclear, but its effects were indisputable. After suffering a number of symptoms including fever, inflammation of the eyes, tongue, or throat, gastrointestinal symptoms such as diarrhea or vomiting, as well as rashes covering the entire body, the victims usually died within seven or eight days of contracting the disease. To this day, archeologists and epidemiologists dispute the name of the disease. Some liken it to the Ebola virus (Holden, 1996), an often fatal disease that spreads quickly between people. Others claimed that it was more similar to glanders, another fatal disease that spread from animals to humans that was eradicated in the early part of the 20th century (Eby & Evjen, 1962).

Historians likewise have been unable to estimate accurately the number of deaths attributed to the Athenian plague. Some contend that the plague resulted in death to thousands in the city of Athens. When diseases affect large numbers of a population within a geographic area, epidemiologists call the disease an epidemic, from the Greek words epi meaning “upon” and demos meaning “people.” The Athenian plague is an example of an epidemic. Diseases that spread though large geographic regions of the world or occur worldwide are called pandemics. Again,
the origin of this word is Greek, derived from the words *pan* meaning “all” and *demos* meaning “people.” All diseases listed in Table 3.1 were considered pandemics because of their impact on multiple populations and millions of people across many global regions.

Perhaps the best-known pandemic is the *haemorrhagic plague*. Commonly called the *Black Death*, it decimated villages throughout Europe, Asia, and the Middle East for approximately three years, from 1347 to 1350 CE. An estimated 25 million people died during the first two years of the plague. Unfortunately, there were seven reoccurrences of the Black Death, the last of which occurred in the 18th century. Together the eight episodes of the plague were responsible for the deaths of over 137 million people.

The most recent addition to the list of deadly pandemics that affected tens of thousands worldwide is the *HIV/AIDS virus*. Although we discuss HIV/AIDS more fully in Chapter 8, HIV and AIDS, one point is worth making now. While the origins of HIV/AIDS continue to be disputed, the method of transmission is indisputably through human contact. High-risk sexual behaviors, including multiple sex partners and unprotected sex, and the sharing of hypodermic needles by intravenous drug users (IVDUs) are the primary means of transmission.

In summary, the pandemics listed in Table 3.1 were transmitted by people through war, commerce, travel or, in the case of HIV/AIDS, high-risk behaviors. All are effective methods for spreading diseases between people and over great geographic distances.

**TUBERCULOSIS (TB)** We began this chapter with a story about Mr. Speaker, a man with an extremely drug-resistant strain of TB. Tuberculosis fits the definition of a communicable disease because it can be transmitted from one living organism to another. The transmission can be direct (from person to person) or indirect (through environmental agents such as air) and may involve direct contact with another person’s saliva, nasal secretions, or feces (CDC, 2007b).
TB is not a new illness. In fact, archeologists found evidence of tubercular decay in Egyptian mummies as early as 2400 BCE (National Tuberculosis Center, 1966). It was a common ailment also in ancient Greece in 570 BCE (Daniel, 2006).

More recently, however, health records indicate that the United States and Europe experienced major TB epidemics in the 18th and 19th centuries. We describe the history and treatment of TB in the United States in Section III of this chapter. For the moment, however, we call attention to current trends in global versus national TB rates that, once again, illustrate the importance of a global perspective on health. At present, the United States enjoys one of the lowest TB infection rates in the world. Yet, as the opening story with Mr. Speaker suggests, the disease still poses problems even in the United States. WHO’s data on worldwide TB rates report an increase in the incidence of TB from 2000 through 2005. The higher rates appear to be due to three factors: drug-resistant strains of the disease (like Mr. Speaker’s illness); HIV/AIDS—a disease that weakens the immune system, making people with HIV/AIDS more susceptible to other infections (see Chapter 8, HIV and AIDS); and an increase in the number of refugees due to wars, famines, and natural disasters (WHO, 2008d).

Researchers have shown that a person with an active case of TB, here meaning someone who is untreated or ineffectively treated, can infect, on average, one person per month. At that rate, a contagious individual can infect 10 to 15 persons per year. Once infected, a person may become sick with active TB bacteria within a year (Caminero Luna, 2003; WHO, 2007b). By comparison, a person with a latent case of TB will test positive for the bacteria but will not show signs of illness, will not be sick, and cannot communicate the disease to others.

The TB rates shown in Figure 3.3 indicate that current TB incidence rates differ by country. Eastern, Southern, and Southeastern Asia, as well as sub-Saharan Africa, have experienced increased incidences of TB over the past five years. The increase in TB in Africa has been linked to an increase in the rates of HIV/AIDS in the region.

Reasons for the increase in TB rates in Asia are less clear. There as in Africa, HIV/AIDS may be associated with the increase in TB rates. Half of all of the new cases of TB in Asia appear to occur principally in six Asian countries: Bangladesh, China, India, Indonesia, Pakistan, and the Philippines (WHO, 2008d).

How do the TB rates in the United States compare to the global statistics? The good news is that TB rates in the United States are not increasing. But health officials report another troubling statistic. Recent data show a slower reduction in the rates of TB in the United States relative to other developed countries over the past four years. What does that mean? Specific statistics may help. The CDC reported that the average decline in TB rates in the United States for 1993 through 2002 was 6.6% per year. In other words, there were 6.6% fewer TB cases each year in the United States between 1993 and 2002. From 2003 through 2006, however, there were only 3.1% fewer cases of TB per year. The slower reduction means more cases of TB in the United States during 2003 through 2006.

There are several possible reasons for the slower decline of TB in the United States. Health officials suggest that one reason for the decline may be related to immigration. In the United States, foreign-born residents have higher rates of TB than do U.S.-born residents. In 2006, the prevalence rate for TB for foreign-born persons in the United States was 22.0 cases per 100,000 people. For U.S.-born residents, however, the prevalence rate was only 2.3 per 100,000 persons (CDC, 2007b), approximately one-tenth the rate for foreign-born residents. Thus, the data seem to suggest that immigration plays a role in slowing the decline of TB rates in the United States.
Global incidence of tuberculosis shows that the highest rates of tuberculosis occur in sub-Saharan Africa, with significant rates reported also in eastern Europe and throughout Asia.

Source: CDC, 2009d.

At this point you may be wondering why global and U.S. TB rates are relevant to health psychologists. Put it this way: The TB statistics are relevant to health psychologists who study the health status of communities, especially if their work involves immigrant communities. For example, in examining the community health indicators of immigrant communities, these statistics suggest that researchers and health providers should include measures of TB risk to obtain a complete profile of community health status.

Equally as important, health psychologists who work to reduce TB rates in the United States could use the statistics to identify groups of people at greatest risk for contracting TB. They could design intervention, prevention, and treatment programs tailored specifically to the higher-risk groups to maximize likelihood of successful health outcomes. The statistics suggest that one high-risk group is certain immigrant populations.

**CHILDHOOD VIRAL DISEASES**  Measles, mumps, rubella, chicken pox, diphtheria, whooping cough, and polio: Do these diseases sound familiar to you? Most children in developed countries like the United States are medically protected from such childhood viral diseases. In fact, few would recognize names like whooping cough or mumps, and fewer still would come in contact with such diseases.

But, for millions of other children, the same diseases often lead to serious illness or death. In this section we examine three childhood diseases that continue to pose health problems for the
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Global community: measles, chicken pox, and polio (see Box 3.2). We examine childhood viral diseases as part of our study of health psychology because the diseases have one thing in common: They are all preventable. Preventable illnesses are of special interest to health psychologists because they suggest an opportunity to improve health outcomes through changes in individual behaviors or through improving access to health care. And, as we will see in Chapter 4, Theories and Models of Health Behavior Change, one goal of health psychologists is to motivate individuals to adopt behaviors that will improve their health status.

Measles, Chicken Pox, and Polio

Measles is a viral infection most commonly found in children. It can result in respiratory illness and even death. For that reason, it is the most serious of the preventable childhood infections (Kunz, 1982).

In many developing countries, children who are merely exposed to the measles virus are likely to contract the disease. And in many cases the disease will be fatal. In 2005, over 90,000 people in Africa—mostly children—and more than 126,000 people in Southeast Asia died of measles. But in the same year fewer than 2,000 deaths were attributed to measles in Europe and in North, Central, and South America combined.

Due to the high mortality rate associated with measles in developing countries, its prevention is considered the highest medical priority for children. It is given high priority especially in emergency settings such as natural disasters or refugee camps. WHO statistics show that, in emergency settings, 25% of all child deaths are attributed to measles (WHO, 2006).

Chicken pox, or the varicella zoster virus, as it is known in the medical community, is an uncomfortable but rarely serious illness when contracted during childhood. Before 1995, approximately 90% of U.S. children experienced and successfully overcame chicken pox by age 10. As with many other childhood diseases, a person who has the disease is immune for life. Thus, by age 10, over 90% of children in the United States were effectively immune from contracting the chicken pox a second time.

Finally, poliomyelitis, referred to commonly as polio, is a highly contagious viral disease that damages cells in the spinal cord and specifically attacks the muscle-controlling nerves (Wilson, 2005). While polio results only in flu-like symptoms for over 90% of people who contract the illness, approximately 2% experience more severe manifestations such as partial or full paralysis of the arms or legs.

During the first half of the 1900s, the United States experienced many waves of polio, often referred to as polio epidemics. The most serious epidemic occurred in 1916, followed by a succession of epidemics occurring from 1930 through 1960. The numbers of people affected by polio during that time exceeded 400,000 (Wilson, 2005).

The statistics on measles, chicken pox, and polio may seem unreal. For example, when was the last time you heard of someone dying of measles? In fact, when was the last time you remember hearing that someone even contracted the measles? The extremely low rate of measles and other childhood communicable diseases in the United States is no accident. Incidences of childhood viral illnesses are infrequent in the United States primarily because children with access to health care receive vaccines that immunize them against the diseases. Vaccines are medicines that contain a small amount of the virus (dead or live) from the disease in question.

To prevent children from contracting measles, scientists developed a vaccine made, in part, from the dead measles virus. Introducing a controlled amount of a virus to the body encourages the body’s immune system to build antibodies. We explore the body’s immune system more fully.
Do These Viral Infections Sound Familiar?

How many childhood illnesses have you had? What about your friends? Chances are, not many. Incidences of measles, polio, and now even chicken pox in the United States are very low. Childhood immunization programs in the United States have made such diseases a rare occurrence. For that reason, we present a brief summary of three diseases that are uncommon in the United States but that still occur at alarmingly high rates in developing countries.

**Measles**

Measles is a viral infection seen most commonly among children. Early symptoms usually include a fever and a rash that appears first on the face and neck, eventually spreading to other parts of the body. The symptoms last approximately 10 to 12 days.

The illness itself is not as dangerous as the likely complications. Pneumonia, severe diarrhea leading to dehydration, or encephalitis (a dangerous inflammation of the brain) are the more serious complications and can lead to death (WHO, 2006a). Measles is especially fatal for children five years of age or younger who are malnourished, have weakened immune systems, or have vitamin A deficiencies.

**Chicken Pox**

More uncomfortable to children than dangerous, chicken pox is characterized by an itchy rash that often turns into a blistering pox and, when ruptured, secretes a small quantity of pus. Children who catch chicken pox often complain of fever in addition to the uncomfortable itchy sensation from the blisters.

Prior to 1995, the United States reported approximately 4,000 cases of chicken pox per year, mainly among children. In those years, parents sometimes purposely exposed their noninfected children to others with active cases of chicken pox so that noninfected children would catch the essentially harmless disease as a child. However, for adults who were never exposed to chicken pox, the disease is not as benign. Approximately 10% of adults in the United States are susceptible to chicken pox and can suffer complications that can include respiratory diseases such as pneumonia.

**Polio**

Like chicken pox and measles, polio is a viral disease. Unlike the other two, however, polio can be a crippling disease. The effects of the disease can vary from a mild, flu-like infection, including fever, nausea, and fatigue, to partial or total paralysis of the arms or legs.

When thinking of polio, many recall Franklin D. Roosevelt, the 32nd president of the United States. President Roosevelt contracted polio in 1921 at the age of 39. His case demonstrates that older people afflicted with polio experience more severe symptoms, such as paralysis, than do children.

Thanks to the effectiveness of a vaccine discovered by Jonas Salk and eventually administered worldwide, polio is considered largely a disease of the past, at least in the United States.
in Chapter 8, HIV and AIDS. But, briefly, antibodies are proteins that identify and destroy bacteria and viruses that are foreign to the body. The immune system then retains some antibodies to recognize and destroy the virus if an individual becomes exposed to it at a later time. By teaching the body to recognize and destroy a controlled amount of the virus, vaccines are able to protect or immunize the vaccinated individual from future occurrences.

**Effectiveness of Vaccines**  How effective are vaccines in preventing the spread of childhood viral illnesses? We noted that, for the United States, measles is a rare occurrence. Now consider this: In 1995, a new vaccine was introduced in the United States to add to the arsenal of childhood vaccines. Today, two administrations of the varicella zoster virus vaccine protects 95% of children from the disease (Chaves et al., 2007; Tugwell et al., 2004). In addition, by vaccinating children to protect them from chicken pox, we reduce the exposure risks for adults who are more likely to develop serious and sometimes fatal complications.

The success of vaccine programs in the United States is due in part to public health regulations that strongly recommend that, by age six, children should have received all vaccines for measles, mumps, rubella, chicken pox, diphtheria, whooping cough, polio, and other infectious diseases usually contracted in childhood.

Is it a coincidence that public health officials chose six years of age to mandate immunization of children? Not at all. In the United States, children are required to attend school starting at age six (or age five in states that require children to attend kindergarten). Thus, hundreds of children spend five days a week acquiring knowledge and sharing germs in a common space. Unvaccinated children in such an environment could easily spark a mini-epidemic of childhood illnesses. To protect the health and well-being of all children, their families, and the community, most local and state health policies require that children be immunized before starting school.

To summarize, a goal of U.S. health officials is to reduce the incidences of childhood diseases and to minimize the chance of children experiencing illness or death associated with serious diseases such as measles. Consequently, for children in the United States, Europe, or other developed countries with established immunization programs, measles and other serious childhood diseases are rare occurrences.

It is worth repeating that one reason why developed countries can state and achieve such goals is because childhood viral illnesses are preventable. Vaccines have been proven effective not only in preventing children from becoming seriously ill or disabled but also in protecting the health and well-being of a community. Yet, as we see from the changes in polio statistics worldwide (see Box 3.3), not all children are vaccinated.

What would prevent someone from vaccinating a child to protect against a serious or potentially fatal disease? Health psychologists ask this question often to understand the factors that influence an individual’s decision to obtain health-enhancing or health-sustaining treatments. In the case of childhood illnesses, we noted that cultural or religious beliefs (individual, family, cultural factors), fear of the consequences of vaccines (individual factors), the cost of vaccines (affordability, a demographic factor), access to health care (health systems factor), and vaccine programs (a health policy factor) all determine the likelihood that a child or an adult may contract a contagious viral infection. We explore the factors that influence health behaviors from a health psychology perspective more fully in Chapter 4, Theories and Models of Health Behavior Change.
We can understand the beneficial impact of vaccines by examining an incident in 2003 when polio vaccines were suspended in Nigeria. Until 2003, polio was thought to be under control in all regions of the world. However, a new outbreak of polio was reported in seven west and central African countries: Burkina Faso, Cameroon, the Central African Republic, Chad, Ghana, Nigeria, and Togo (see Figure 3.4). The source of the outbreak appeared to be Nigeria, where the government suspended its polio immunization campaign in the northern part of the country. The reason for the suspension is unclear. What is clear is that the change in Nigeria’s national immunization policy appears to be the principal cause of the resurgence of polio that now affects eight countries in Africa. Nigeria’s changed health policy is a good example of the effect that health policy may have on individual health outcomes.

The proven effectiveness of vaccines is one reason why international aid organizations such as the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF) have placed a high priority on global immunization programs for children. An equally compelling reason to prioritize childhood immunizations is the minimal cost. For less than U.S.$1.00 per child, international aid agencies could vaccinate all children, five years of age or younger, to control and eventually to eradicate childhood infectious diseases. Over 345,000 deaths in 2005 due to measles could have been prevented if children, especially those in developing countries, had been immunized against the disease. The cost for such a program would have been $345,000, a minor sum for most developed countries.
**BOX 3.4  In the Wake of Hurricane Katrina**

Hurricane Katrina, the Category 5 hurricane that severely flooded and damaged New Orleans and the Gulf Coast of Mississippi, is a recent example of a natural disaster that created the perfect conditions for a cholera outbreak.

Katrina destroyed the water levees that protect New Orleans from the Gulf of Mexico and Lake Pontchartrain. Massive amounts of water flooded into the city when the levees failed, disrupting the city’s infrastructure, causing major damage to sewer systems, and contaminating water supplies as well as other systems (see Figure 3.5). Raw sewage and other waste products flowed into the waters that flooded streets and neighborhoods, especially in the Lower Ninth Ward and Chantilly, two neighborhoods in New Orleans.

Once the storm ended, many health workers braced for an outbreak of cholera. Why? The scarcity of clean drinking water and the contaminated water in streets and homes meant that people were exposed daily to microorganisms (see Chapter 1, An Interdisciplinary View of Health) that increased their risk of infections. Fortunately, no major outbreaks of cholera were diagnosed. There were, however, over 140 cases of diarrhea and more than 289 cases of other infectious diseases reported in the first days after the storm (CDC, 2005). The point is that while most developed countries, like the United States, worry about outbreaks of cholera only in the event of natural disasters like Hurricane Katrina, developing countries face the potential for cholera outbreaks with regularity.

![Figure 3.5 Hurricane Katrina Aftermath.](image)

**Figure 3.5 Hurricane Katrina Aftermath.** A view of Canal Street flooded due to damage to the levees.

**Recurring Diseases**

A second type of communicable disease is recurring diseases such as cholera, malaria, and dracunculiasis, sometimes called “guinea worm” (see Box 3.6). These particular diseases present special challenges to the global health community because they are transmitted to humans from insects or bacteria that breed in unsanitary environmental conditions. In other words, for many recurrent diseases, environmental conditions are a predisposing factor (see Chapter 2, Research Methods) that contributes to the disease.
SECTION I. GLOBAL HEALTH PROBLEMS

CHOLERA  Like measles, very few people contract cholera in developed countries. The reason for the low rates of infection in developed countries is health policies at the local and national levels that ensure safe, clean water for the majority of the population (see Chapter 1, An Interdisciplinary View of Health).

_Vibrio cholerae_ bacteria cause the intestinal infection that we call cholera. The bacteria are usually found in contaminated food or water or in human fecal matter. An individual who eats contaminated food, drinks contaminated water, or is in contact with human fecal matter infected with the bacteria can contract cholera (WHO, 2008c). Approximately 80% of the time, cholera causes mild or moderate symptoms that usually include diarrhea and stomach cramping. In 10 to 20% of the cases, however, diarrhea can be so sudden and severe that it causes severe dehydration, kidney failure, or death.

Cholera is closely linked to poor environmental management and unsafe water conditions. Therefore, countries with limited water treatment facilities, such as Mexico, the Dominican Republic, Costa Rica, and Thailand, encounter frequent problems with water contaminants. In some instances, travelers to these and other countries are warned not to drink the water.

Even developed countries, however, may experience a disruption of water sanitation systems that jeopardize the water supply. Hurricane Katrina (see Box 3.4) damaged water treatment systems and prompted concern by health officials about a potential outbreak of cholera in the United States.

In essence, cholera is a preventable disease; but, like vaccinations for childhood viral illnesses, it is best addressed through health policy interventions. And, as we indicated in Chapter 1, An Interdisciplinary View of Health, local, regional, or national governments are best equipped to develop the health policies that provide the environmental and safety systems needed to ensure safe water supplies.

MALARIA  Mosquitoes! For many people the word _mosquito_ conjures annoying images of insects that leave irritating welts after biting and an itchy sensation that can take days to subside. For others, the word _mosquito_ is linked to insect sprays or other repellants that help avoid the irritating bites or welts.

Hot, humid weather and large bodies of stagnant water offer an ideal breeding ground for mosquitoes. And, in countries with extensive hot or humid seasons, as well as large bodies of stagnant water and large populations of mosquitoes, these insects can be more than just annoying: They can mean death if they carry the malaria virus.

How does a mosquito become a carrier of the virus? The process begins with a parasite called _plasmodium_. The plasmodium parasite infects humans, but then it is transmitted from person to person with the aid of the female _anopheles mosquito_ (WHO, 2007a). When the anopheles mosquito bites an infected person, it injects a small amount of fluid that causes the skin irritation associated with mosquito bites. It then withdraws a small amount of blood from the infected person. The anopheles mosquito then moves on to its next victim. When biting the next victim, some of the blood from the first person is injected into the newly bitten person along with the fluid. In this way, the anopheles mosquito transmits malaria from one person to another.

Over 90% of the deaths from malaria occur in sub-Saharan Africa, where children disproportionately are the victims. Although hot, humid, tropical climates are the preferred breeding grounds for mosquitoes, in truth any area with favorable breeding conditions for mosquitoes is a potential
malaria region. For this reason, high rates of malaria infection have been reported in Southeast Asia as well as in Central America and northern South America. Like cholera, malaria is preventable. Antimalaria medication widely available in the United States in addition to precautions such as mosquito repellants, protective clothing, and protective bed nets sprayed with repellant help to reduce the risk of contracting malaria (see Box 3.5).

PARASITES The U.S. Food and Drug Administration (FDA) frequently warns us of the danger of eating raw or undercooked meats or pork. These warnings are really meant to protect us from consuming meat products that are contaminated with the cestodiasis parasite commonly known as tapeworm.

The cestodiasis parasite lives in the intestines of animals such as cattle or pigs. People can be infected with the parasite if the meat they consume from cattle or pigs is not cooked long enough or at a high enough temperature to kill the organism. Infected beef may contain the parasite taenia saginata, whereas the parasite found in contaminated pork is called taenia solium. When consumed, either parasite is capable of causing diarrhea, abdominal pain, and weight loss. In severe cases, the parasite can cause brain damage when left untreated. It is important to point out that the taenia solium parasites found in pigs are not related to the agents that cause the A/H1N1.

Chronic Diseases

Until recently, health researchers believed that communicable diseases, like TB, cholera, and malaria, were the principal health problems for developing countries. On the other hand, chronic
Not all parasites are as easy to detect and treat as the cestodiasis or tapeworm. For example, some developing countries continue to struggle to combat an extremely painful and debilitating parasite known as *dracunculus medinensis*, or *guinea worm*. Like the cestodiasis, the guinea worm is contracted when a person consumes a contaminated substance. Because the guinea worm lives in contaminated water, a person can contract this parasite when drinking water that contains *copepods*, or small crustaceans that contain the larvae of the guinea worm (CDC, 2004a). If consumed, the copepods die, but the larvae continue to live. The larvae will grow in the host (in this case a person) for approximately 12 months until they become adult worms.

After maturing, the female worms leave the host site, here meaning the human body. But the process by which the worm leaves the body is the painful and debilitating part of the disease (CDC, 2004a; WHO, 1999, 2009a). To leave a host’s body, the female worm forms a blister on the skin of the host, usually on the lower leg or foot. The worm ruptures the blister when it exits, causing an open wound in the skin. The rupture causes a burning pain so intense that most infected persons try to relieve the discomfort by placing the blistering part of the body in water. While the water certainly relieves the discomfort for a moment, it also puts the worm once again in water, the preferred environment to exit the body and to reinfect others. To speed the process, some individuals help the worm exit by pulling the worm as it exits in water. The female worm once again deposits a fresh supply of larvae. The cycle then begins again for another individual (see Figure 3.6). Regardless of how it exits, extracting the worm is a slow and painful process.

For approximately 58% of people infected with the guinea worm, the process of the worm leaving the body is so debilitating that they are unable to walk for a month afterwards.

There is good news, however. The guinea worm is rarely life threatening. Most people are able to resume normal functioning after recuperating from the process. In addition, through concerted efforts by international aid organizations, guinea worm disease has been reduced by 99.7%. In 1986, global estimates of guinea worm disease totaled 3.5 million cases. As of 2005, fewer than 11,000 cases of the disease were reported worldwide (Hopkins, 2006). It is now one of two diseases targeted for full eradication by international health organizations.

How will the organizations eradicate the remaining cases? Remember that the disease is caught through contaminated water. By providing clean, safe drinking water to the approximately 20 countries in Africa and Asia where the disease is most prevalent, eradication of the guinea worm may be achievable in the very near future.
diseases, here defined as long-term (three to six months or longer) complex illnesses that can be controlled but not cured, were thought to be the main health concerns for developed countries like the United States (Australian Institute of Health and Welfare, 2002; O’Halloran, Miller, & Britt, 2004). Because of such views, chronic diseases were given the nicknames “diseases of affluence” and the “western disease” (Ezzati, Vander-Hoorn, & Lowes, 2005; McKeowan, 1988). But we now know that chronic and communicable diseases are widely prevalent in all countries. As we will see, the high rates of cardiovascular disease (chronic disease) in developing countries and the prevalence of HIV/AIDS and TB (communicable diseases) in developed countries demonstrate that diseases do not discriminate based on a country’s economic status.

Chronic diseases include illnesses such as arthritis, asthma, cancer, chronic heart disease, chronic renal disease, chronic respiratory diseases, depression, diabetes, osteoporosis, stroke, and others (see Table 3.2). The symptoms associated with chronic diseases vary according to the illness. Yet, one thing is common across all illnesses; the symptoms may occur intermittently or they may be continuous and worsen over time.

Earlier in the chapter we introduced childhood and other infectious diseases, some of which can be fatal, that affect millions of people each year. But it may surprise you to know that the leading causes of death worldwide are chronic diseases, not infectious diseases. This is true for both developed as well as developing countries. Statistics from WHO underscore this fact. Of the 58 million total deaths worldwide in 2000, approximately 35 million (or 60%) were due to chronic illnesses. To put this in perspective, 35 million deaths due to chronic diseases is more than double the number of deaths from all infectious diseases worldwide, including HIV/AIDS.
What is more, 80% of the deaths due to chronic illnesses occurred in developing countries (WHO, 2005a). In fact, five times as many people will die in developing countries from cardiovascular diseases (a chronic illness) than will die from HIV/AIDS (WHO, 2005a).

The difference in mortality rates due to chronic illnesses in developed versus developing countries illustrates differences in individual outcomes for the same illness. Health psychologists and other researchers have determined that one probable explanation for the disparity in outcomes is lack of access to health care. Research shows that people with infrequent or irregular medical care have a higher mortality rate associated with chronic illnesses than people with a regular source of care or medical treatment (Beaglehole et al., 2007; Unal, Critchley, & Capewell, 2005). Thus, higher death rates due to chronic illnesses in developing countries could be caused, in part,

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Ischaemic Heart 12.4%</td>
<td>Ischaemic Heart 22.6%</td>
<td>Ischaemic Heart 9.1%</td>
</tr>
<tr>
<td>2</td>
<td>Cerebrovascular 9.2%</td>
<td>Cerebrovascular 13.7%</td>
<td>Cerebrovascular 8.0%</td>
</tr>
<tr>
<td>3</td>
<td>Lower respiratory infection 6.9%</td>
<td>Trachea, bronchus, and lung cancer 4.5%</td>
<td>Lower respiratory infection 7.7%</td>
</tr>
<tr>
<td>4</td>
<td>HIV/AIDS 5.3%</td>
<td>Lower respiratory infection 3.7%</td>
<td>HIV/AIDS 6.9%</td>
</tr>
<tr>
<td>5</td>
<td>Chronic obstructive pulmonary disease 4.5%</td>
<td>Chronic obstructive pulmonary disease 3.1%</td>
<td>Perinatal conditions 3.6%</td>
</tr>
<tr>
<td>6</td>
<td>Perinatal conditions 4.4%</td>
<td>Colon and rectal cancers 2.6%</td>
<td>Chronic obstructive pulmonary disease 5.0%</td>
</tr>
<tr>
<td>7</td>
<td>Diarrheal diseases 3.8%</td>
<td>Stomach cancer 1.9%</td>
<td>Diarrheal diseases 4.9%</td>
</tr>
<tr>
<td>8</td>
<td>Tuberculosis 3.0%</td>
<td>Self-inflicted injury 1.9%</td>
<td>Tuberculosis 3.7%</td>
</tr>
<tr>
<td>9</td>
<td>Road traffic accident 2.3%</td>
<td>Diabetes 1.7%</td>
<td>Malaria 2.6%</td>
</tr>
<tr>
<td>10</td>
<td>Trachea, bronchus, and lung cancer 2.2%</td>
<td>Breast cancer 1.6%</td>
<td>Road traffic accident 2.5%</td>
</tr>
</tbody>
</table>

by an individual’s inability to afford health care or to a nation’s inability to provide medical care to its neediest citizens.

It is important to note, however, that lack of access to medical care is a problem in developed countries as well. In such instances, however, it is usually lower-income or poor individuals who experience such outcomes.

CAUSES OF CHRONIC DISEASES Researchers almost unanimously agree that there are three principal causes of chronic illnesses: unhealthy diets, physical inactivity, and tobacco use (Strong, Mathers, Epping-Jordan, & Beaglehole, 2005). In other words, the main determinants of chronic illnesses are the choices people make about their diets, their activities, and their habits. We add to these principal determinants two confounding factors, here meaning variables that do not cause but may exacerbate the problem, socioeconomic class (specifically income) and race/ethnicity. In this section, we explain the causes and the confounding factors for chronic illness by examining two prevalent chronic diseases in the United States, diabetes mellitus and chronic respiratory diseases. We will explore other chronic illnesses, specifically cardiovascular diseases, arthritis, and cancer, in greater depth in Chapters 9 through 11.

DIABETES MELLITUS Diabetes mellitus is a chronic disease that occurs when the pancreas, an organ below the stomach, does not produce enough insulin, here meaning a hormone that controls the blood sugar levels in the body, or when the body cannot use the insulin it produces. There are two types of diabetes. Type 1 diabetes is usually genetic in origin. The cause of Type 1 diabetes is the body’s failure to produce insulin. In the United States only 5 to 15% of Americans have Type 1 diabetes (American Diabetes Association, 2007).

The second type of diabetes, formerly called adult-onset diabetes, is now referred to simply as Type 2 diabetes. This is the most common form of diabetes both in the United States and worldwide. In the United States, approximately 20 million people have been diagnosed with the illness. Worldwide, approximately 90% of all incidences of diabetes are classified as Type 2.

Type 2 diabetes is caused by insulin resistance or the inability of the body to use insulin properly. Individuals with Type 2 diabetes could have a family history of diabetes that would predispose them to a greater likelihood of the disease (see Chapter 2, Research Methods). However, researchers have determined that the largest single contributor to its onset is unhealthy diets. In addition to poor dietary habits, however, Type 2 diabetes rates are increasing because of the increasingly sedentary lifestyles of people in Western industrialized countries.

Researchers generally agree that we can reduce the incidences of chronic health problems, like diabetes, through relatively small changes in lifestyles and health behaviors. Specifically, reducing the consumption of foods with high concentrations of saturated fats and salt, increasing consumption of fresh fruits and vegetables, and increasing physical activity would help prevent many types of chronic illnesses (WHO, 2005c).

Furthermore, some researchers suggest that the dietary habits of Western cultures, like the United States, increase the risk of chronic illnesses. Western diets have an abundance of highly processed foods and foods with a high fat, high calorie, but low fiber content. Unsure about this claim? Try this exercise. Next time you have lunch at a fast food or other restaurant with friends count the number of high-fat, high-calorie items on the menu. To help you in this process, be sure to include the following: pizza, hamburger or cheeseburger, French fries, onion rings, cheese
steak sandwiches, and nachos with cheese. The highly processed, high-fat items are excellent examples of foods to limit or avoid to reduce the likelihood of developing chronic health problems (Scott, 2007; WHO, 2005c) later in life. When consumed in excess, such foods contribute to the increasing obesity rates in the United States, a precipitating factor for diabetes mellitus.

We now know that it is never too soon to address dietary habits. Consider this: In 2003, the American Academy of Pediatricians, a professional organization for medical doctors in the United States who treat children from infancy to age 18, acknowledged the link between obesity, caused largely by eating habits and sedentary lifestyles, and diabetes. Later that same year, the academy asked pediatricians to include screenings for obesity as part of their annual or biannual checkups of patients. The aim was to monitor and address the increasing rates of obesity in American children (Wartik, 2003, see Figure 3.7). Their fear: if left unchecked, obese children will be more likely to develop diabetes as adolescents, a previously uncommon phenomenon.

**Diabetes and Lifestyle Choices** What do we mean by sedentary lifestyles? Television viewing and leisure use of computers are examples of sedentary behaviors. When done in moderation, they are relaxing activities that may be part of a balanced regimen of active and passive behaviors. However, researchers are finding that the amount of time children and adolescents engage in such sedentary activities is increasing over time (Nelson et al., 2006; Sothern, 2004). For example, in a longitudinal study of adolescents’ activities between 1999 and 2004, Nelson and colleagues (2006) found that girls and boys show a decrease in physical exercise that begins in

**FIGURE 3.7 Trends in Child and Adolescent Overweight.** Between 1963 and 2004 incidences of overweight have increased almost 400% for children and adolescents 6–11 years and 12–19 years of age, and almost 300% for children 2–5 years of age.

*Source:* Centers for Disease Control (2009c).
early adolescence and continues well into the late adolescent years. At the same time, however, they note an increase in leisure computer use, a sedentary behavior.

Nelson and colleagues’ (2006) findings are supported by research by Kahn and colleagues (2008) that similarly show a decrease in adolescent physical activity after age 13 for both boys and girls.

Diabetes Diagnosis Diabetes can go undetected and undiagnosed for considerable periods of time. Why is this possible? Symptoms of diabetes can be nonspecific and easily overlooked. For example, a frequent need to urinate or an extreme thirst may not be associated at first with diabetes. In addition, some symptoms are nonspecific. Unusual weight loss, increased fatigue, and irritability may signal the onset of diabetes. Yet they could also be warning signs of some forms of cancer (American Diabetes Association, 2007).

The most reliable method for detecting diabetes is through a blood test. But consider this: Unless a person has a reason to suspect that symptoms may be early warning signs of diabetes, he or she may either overlook the symptoms or fail to mention them to his or her physician. Lack of awareness of the symptoms of diabetes or a lack of access to health care for testing can delay diagnosis and treatment. Delays in treatment, or nontreatment of diabetes, can lead to health complications including blindness, amputation of extremities (arms or legs), or kidney failure, which can also lead to death.

We stated earlier that Type 2 diabetes is preventable. Thus, we might be tempted to assume that anyone who contracts the disease has only him- or herself to blame. While such a conclusion may be accurate when individuals have access to nutritious foods or balanced diets and health care, it is less accurate when explaining the incidences of diabetes among individuals in developing countries with limited resources and less opportunities to obtain care. For diabetes, therefore, national or regional health policies that ensure access to health care offer preventive or early detection options that can reduce the onset or adverse consequences of diabetes. Here again, health policy can play a crucial role in an individual’s health outcome.

CHRONIC RESPIRATORY DISEASES Chronic respiratory diseases are a class of chronic illnesses that affect the airways and damage lung function over time. Examples of chronic respiratory diseases include asthma, chronic obstructive pulmonary disease (COPD), respiratory allergies, and occupational lung diseases such as mesothelioma (see Table 3.3).

Like other chronic diseases, the cause of chronic respiratory disease can be both biological and environmental. For example, a biological cause of asthma, a partial obstruction of the airways that can cause wheezing or impair breathing, may be a family history of asthma that predisposes an individual to experiencing asthma-like symptoms or to having the illness (see Table 3.3). On the other hand, environmental triggers such as cigarette smoke and animal fur may cause an irritation of the airways that also results in asthma. Cigarette smoke is the most significant contributor to respiratory ailments, specifically asthma (National Heart, Lung & Blood Institute, 2009). This is true for individuals who smoke, as well as for individuals exposed to secondhand smoke on a regular basis (Gergen et al., 1998).

COPD and Access to Care Obtaining an accurate estimate of the incidences of asthma or other chronic illnesses is difficult. Respiratory diseases can be difficult to detect or diagnose
### TABLE 3.3  Common Chronic Respiratory Diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Defined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>Partial obstruction of the airwaves (lungs) that causes episodic attacks of wheezing and difficulty breathing. Attacks can be triggered by allergies to pollen, mites, house dust, or other agents</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>Damage to the airways (lungs) caused by irritants such as tobacco smoke, pollution, chemical fumes, or dust. COPD causes coughing, mucus, sneezing, shortness of breath, chest tightness, and other symptoms</td>
</tr>
<tr>
<td>Respiratory allergies</td>
<td>A physical response or hypersensitivity to foods, plants, animal hair, or other elements based on a misdirection of the body's immune system.</td>
</tr>
<tr>
<td>Mesothelioma</td>
<td>A form of cancer of the lungs that develops in the lining of the chest cavity, caused principally from inhaling asbestos fibers that cause irritation and damage to the lungs.</td>
</tr>
</tbody>
</table>

*Source: CDC, 2004f.*

accurately. Take, for example, *chronic obstructive pulmonary disease (COPD).* Underdiagnosis of respiratory diseases such as COPD is common due to the difficulty of diagnosing the disease but also to a lack of access to regular medical care. Falagas, Vardakas, and Paschalis (2007), and Scott (2007) note that in developing countries, less than half (44.6%) of the people suspected of having COPD receive a pulmonary function test, a basic test that measures how well the lungs take in and expel air. Of those, fewer than 24% received an official diagnosis confirming COPD. For individuals in developing countries, making repeat visits to doctors, being tested, and receiving the results of tests is a costly and time-consuming process that many cannot afford, especially when testing for a long-term and debilitating, but not necessarily fatal, disease.

In case this sounds a little shortsighted, consider another example. In developed countries it is not uncommon for an individual to postpone seeking treatment for what appears to be a minor cough. You may know of someone who feels this way. A person with a minor cough may postpone seeking medical care even when the cough worsens and causes a heavy feeling in the chest. That person’s rationale for not seeking treatment may be that the cough is not serious; he or she can still perform daily tasks; or the person cannot afford the time off from work or school to seek treatment. All three factors are cost factors that an individual considers when determining whether to seek treatment. The cost factors may be similar regardless whether the individual lives in a developed or a developing country.
WHO placed the number of deaths due to chronic respiratory disease in 2005 at approximately 4 million worldwide (WHO, 2005c), approximately three times the number of deaths due to diabetes. In the United States alone approximately 120,000 Americans died of complications associated with COPD in 2000 (NHLBI, 2009).

In developed countries, chronic illnesses such as diabetes or chronic respiratory diseases will interfere with a person’s daily functioning but rarely lead to immediate death. In fact, the long-term nature of most chronic illnesses leads many to view chronic diseases as less threatening to one’s health than infectious diseases. But remember, as we noted at the beginning of the section on chronic diseases, more deaths are attributed to chronic illnesses worldwide than to infectious diseases, a fact that should encourage us to reconsider the impact of chronic diseases on individual or community health outcomes.

**SOCIOECONOMIC CLASS, RACE/ETHNICITY, AND CHRONIC DISEASES**

Socioeconomic class and race/ethnicity are two confounding factors that contribute to chronic illnesses. Yet many researchers contend that socioeconomic class and race/ethnicity are indirect contributors to chronic illnesses because they primarily affect lifestyle choices and access to care. These factors, in turn, are most directly linked to chronic illnesses.

Research conducted by the WHO and the Institute of Medicine (IOM), a U.S.-based institution that examines health care systems and access to care, demonstrate the effects of race/ethnicity and socioeconomic factors on health care outcomes as shown in Box 3.8. Briefly, the findings suggest that individuals in the lower socioeconomic groups (people who, by income levels, would be considered poor, working poor, or lower middle income; see Chapter 6), are less...
### BOX 3.8 Health Care Disparities in the United States

Do individuals experience differences in health care treatment in the United States, based on their socioeconomic status or race/ethnicity? Some researchers think so. Sonel and colleagues (2005) designed a study to examine this question for patients with coronary or heart-related illnesses. A total of 400 hospitals participated in a program called CRUSADE, which stands for “Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes with Early Implementation of ACC/AHA Guidelines?” Hospitals in the CRUSADE study agreed to provide data for Sonel and colleagues (2005) to determine whether there were differences in medical care for heart patients of different ethnic/racial or socioeconomic classes. Specifically, Sonel and colleagues reviewed the medical records of over 43,000 patients, of whom approximately 84% were white and 13% were African American, to determine whether African Americans and whites received different types of treatment for largely similar heart-related illnesses when seeking care in hospitals.

Their results revealed significant treatment differences between whites and African Americans in the sample. In general, Sonel and colleagues (2005) found that African American patients were more likely to be in poorer health and to have less access to health care. Specifically, African Americans were more likely to be younger than the white patients and to be female. Healthwise, African Americans were more likely to have a diagnosis of hypertension (high blood pressure), to have a confirmed diagnosis of diabetes, and to have a history of smoking and of heart disease. With respect to access to health care, African American patients were less likely to have health insurance through either a health maintenance organization (HMO) or other private insurance. They were more likely to be self-insured or have no insurance and less likely to have a cardiologist as their primary care physician at the hospital.

Sonel and colleagues’ study demonstrates clear differences between African Americans and whites in health status and access to health care. But do the differences extend to the types and quality of health treatment? The answer to that question also appears to be yes. When examining the type of treatment given to African American versus white patients, Sonel and colleagues found that while African Americans were as likely as whites to receive the standard treatment, such as aspirin, for acute coronary (heart) problems, they were 20 to 40% less likely to be given the newer, more resource-intensive treatments.

Why is there such a difference? One study alone cannot address that question. However, an earlier study suggests that ethnicity plays a role. Whittle, Conigliaro, Good, and Lofgren (1993) examined the rates of four types of cardiovascular procedures on African American and white patients in a Veterans Administration (VA) Hospital. By choosing a VA hospital, the researchers controlled for the possible confounding effect of income or insurance on the likelihood of the procedure being performed because veterans’ care is funded by the government. Yet here, too, the researchers found that African American patients were 1.38 to 2.2 times less likely to receive the more invasive surgical

(continued)
able to obtain quality health care when needed than are individuals in the middle and upper middle socioeconomic groups (IOM, 2002). In addition, Adler and colleagues (1994) demonstrate that an individual’s socioeconomic status is linked to the likelihood of chronic and infectious diseases and to higher rates of morbidity and mortality due to the diseases. Specifically, the lower one’s socioeconomic class, the higher the likelihood of contracting a chronic illness.

Equally alarming, however, is that even when there is no disparity in socioeconomic status, researchers found inequities in health care based on ethnicity and race (Kelley et al., 2005; Ibrahim et al., 2003). As Adler and colleagues (1994), Kelley and colleagues (2005), and the IOM report (2001) state, an individual’s health outcomes will be affected by a country’s economic status (developed versus developing), by the individual’s own socioeconomic class, and by his or her race/ethnicity.

Measures of Life Expectancy, Quality of Life, and Chronic Illnesses

We mentioned in Chapter 2, Research Methods, that mortality rates are a gross measure of the health of a nation. In general, countries and communities with higher life expectancies are believed to have a healthier population because longevity is an indication of healthier living conditions. Now, however, we can use more precise measures to assess the overall health of a population by estimating the effect of chronic illnesses on overall well-being.

The Disability Adjusted Life Expectancy (DALE) is a new method of measuring a population’s health status that calculates health by adjusting for quality of life. Here, quality of life is defined as the number of years of good, fully functioning ability.

It is important to point out that the DALE estimates the number of years of healthy, unimpaired functioning, not life expectancy. As such, some health researchers question its usefulness as a measure of the health status of a population because it measures healthy function and not mortality. For some illnesses, however, health impairments are morbidity factors (see Chapter 2, Research Methods) that contribute to mortality. Hence the DALE may measure an individual’s overall life expectancy.

In addition to estimating an individual’s number of years of fully functioning health, the DALE also measures a population’s likely productivity based on the health of its population. Consider this: Using the DALE, WHO estimates that developed countries lose about 9% of their population’s productivity to disability, whereas less developed countries lose approximately 14%. In essence, the DALE serves as a measure of overall health that also helps to predict a country’s likely economic health based on its most valuable resource: the health of its workforce.
Calculating Disability Adjusted Life Expectancy

To calculate the adjusted life expectancy using the Disability Adjusted Life Expectancy (DALE), we determine first the number of years the person is expected to live under completely healthy conditions, that is, without impairment. Life expectancy data, sorted by country and gender (published by United Nations 2007; see Table 3.4), provide the vital statistics needed for the first part of the calculation.

<table>
<thead>
<tr>
<th>Country Overall</th>
<th>Total 2005–2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>82.6%</td>
</tr>
<tr>
<td>Hong Kong (People’s Republic of China)</td>
<td>82.2%</td>
</tr>
<tr>
<td>Iceland</td>
<td>81.5%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>81.7%</td>
</tr>
<tr>
<td>Australia</td>
<td>81.2%</td>
</tr>
<tr>
<td>Spain</td>
<td>80.9%</td>
</tr>
<tr>
<td>Sweden</td>
<td>80.9%</td>
</tr>
<tr>
<td>Israel</td>
<td>80.7%</td>
</tr>
<tr>
<td>Macau (People’s Republic of China)</td>
<td>80.7%</td>
</tr>
<tr>
<td>France (metropolitan)</td>
<td>80.7%</td>
</tr>
<tr>
<td>Canada</td>
<td>80.7%</td>
</tr>
<tr>
<td>Italy</td>
<td>80.3%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>80.2%</td>
</tr>
<tr>
<td>Norway</td>
<td>80.2%</td>
</tr>
<tr>
<td>Singapore</td>
<td>80.0%</td>
</tr>
<tr>
<td>Austria</td>
<td>79.8%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>79.8%</td>
</tr>
<tr>
<td>Martinique</td>
<td>79.5%</td>
</tr>
<tr>
<td>Greece</td>
<td>79.5%</td>
</tr>
<tr>
<td>Belgium</td>
<td>79.4%</td>
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<td>Malta</td>
<td>79.4%</td>
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<td>United Kingdom</td>
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<tr>
<td>Germany</td>
<td>79.4%</td>
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<tr>
<td>U.S. Virgin Islands</td>
<td>79.4%</td>
</tr>
<tr>
<td>Finland</td>
<td>79.3%</td>
</tr>
<tr>
<td>Guadeloupe</td>
<td>79.2%</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>79.0%</td>
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<tr>
<td>Cyprus</td>
<td>79.0%</td>
</tr>
</tbody>
</table>

(continued)
To review, chronic illnesses are the leading causes of deaths worldwide. For this reason alone, health care providers and health psychologists should include healthy lifestyles and their impact on chronic illnesses as an important determinant of an individual’s health status. Surprisingly, many do not. In Part III of this book, we devote three chapters, Chapters 9 through 11, to three of the leading chronic health illnesses in the United States in an effort to refocus needed attention on the impact of chronic illnesses on overall well-being.

<table>
<thead>
<tr>
<th>Country</th>
<th>Overall Life Expectancy</th>
<th>Years of Expected Ill Health</th>
<th>Adjusted Life Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martinique</td>
<td>79.5 yr</td>
<td>5 yr</td>
<td>74.5 yr</td>
</tr>
</tbody>
</table>


Using Table 3.4, we can take, as an example, an individual from Martinique. The overall life expectancy in Martinique is 79.5 years. Using the information in Table 3.4 and the DALE, we can calculate the adjusted life expectancy of an individual in Martinique if we know that person’s current health status, that is, his or her current illnesses. For this exercise, assume that a Martinique man contracted cancer at age 60. We compute the number of years of expected ill health (that is, less than fully functional health) based on his current health status and the severity of any current illness. For cancer, some would estimate a loss of five years due to ill health while undergoing treatment. We subtract five years from the overall life expectancy for a Martinique man according to Table 3.4 (79.5 years) to obtain an adjusted life expectancy of 74.5 years.
SECTION II. GLOBAL HEALTH ORGANIZATIONS

We indicated that a country’s health needs are usually addressed by local or national health care systems or policy organizations within countries. In some countries, however, local or national governments do not have the personnel, financial, or material resources to meet even the most basic health care needs of their population or to establish policies to do the same. In such cases, global health organizations help bridge the gap between needed and available health resources. We examine the contributions of global health organizations in this section because health care systems and health policy are two important determinants of individual health outcomes.

In this section, we focus on three organizations that provide health services and assistance to the international community: the World Health Organization, the Federation of Red Cross and Red Crescent Societies, and Médecins Sans Frontières (Doctors without Borders).

World Health Organization (WHO)

Throughout the chapter we have presented facts and statistics on global health issues published by the World Health Organization (WHO). It should come as no surprise, therefore, that WHO is considered one of the leading international health policy organizations.

WHO is a UN specialized agency created in 1948 to help attain the highest standard of health for all people (WHO, 2010c). In 2005, WHO identified three new health goals consistent with their aim to improve global health standards: Improve detection and management of emerging threats to health, reduce tobacco use, and increase healthy eating habits to prevent the onset of chronic diseases (WHO, 2005a). Referred to as the Millennium Development Goals, these goals address the need to attend to communicable (emerging threats) and chronic health issues. You may have noticed that the goals are similar to some of the objectives espoused by health psychologists. Thus, another reason to examine WHO’s work is the common goals of both fields.

WHO promotes its health goals using a three-step process. It assesses the health needs of a population, it develops policy initiatives, and, to a limited extent, it implements the policies in targeted regions of the world. One example of WHO’s needs assessment work is shown in a publication entitled Preventing Chronic Diseases: A Vital Investment (WHO, 2005c), considered the most authoritative source of information on chronic illnesses worldwide. Preventing Chronic Diseases has led some health providers to reclassify chronic illnesses as an important, perhaps even critical, unmet need in all countries.

Second, WHO formulates and adopts policy initiatives aimed at eliminating specific health problems. This is a critical role because, as we have indicated, some countries do not have the resources to develop and adopt health policy initiatives themselves. For example, 25% of countries worldwide have no mental health legislation to address the needs of persons with depression, schizophrenia, bipolar disorder, or other illnesses (WHO, 2005d). To respond to the health needs of people with mental illnesses, WHO developed programs to assist countries in adopting mental health legislation for their citizens.

Third, the organization plans for and implements policy changes at the national, subnational (regional), and individual level. Consider this: In response to the recurrent problem of malnutrition, WHO developed a high-protein food that, when given to children suffering from the disease, decreases mortality rates due to malnutrition (see Box 3.10).

Finally, WHO examines the macroeconomic impact of ill health on individual nations and on the world. What does this mean? We explored this briefly when explaining the uses of the DALE
There are several ways to calculate the effect of an individual’s ill health. For much of this chapter we have focused on the impact of illness or disease on either the individual, his or her family, or the immediate community. However, another reason that countries establish national health policies is to help sustain the economic health of the country. Countries realize that highly contagious or chronic diseases can reduce the number of able-bodied workers. A reduction in the workforce reduces the quantity of products produced, and a reduction in the quantity of products will reduce the country’s ability to export goods for sale to sustain its own citizens. For example, WHO calculated that the Russian Federation, China, and India could lose between $200 and $550 billion in national income between 2005 and 2015 due to the impact of three chronic diseases on their eligible workforces: heart disease, stroke, and diabetes (WHO, 2005c).

How does one person’s illness affect a country’s productivity? In truth, one sick person would have little if any impact on a country’s economy. A number of people suffering from the same or related illnesses, however, would affect productivity. In essence, WHO recognizes that individual health affects more than just the individual. It has the potential to affect the economic health of a country as well.

**BOX 3.10 Policy to Practice: The Problem of Malnutrition**

WHO and other international agencies have had plenty of opportunity to test the effectiveness of a new treatment for malnutrition. A new, ready-to-use, peanut butter paste that replenishes the body’s lost minerals and protein appears to reverse the debilitating effects of malnutrition within 48 to 72 hours if administered in time.

The ready-to-use therapeutic food, more commonly called RUTF, has been successful in treating severely malnourished children by resulting in rapid weight gain (WHO, 2009b).

Just what is in this “miracle” food? The ingredients are quite common: whole milk, sugar, vegetable oil, peanut butter, and mineral vitamin mix (Manary, 2005). In fact, the ingredients are so common they can be obtained and stored by any individual at home.

In addition to reversing the effects of severe malnutrition, RUTF is easy to transport and maintain. It can be packaged for individual use and requires no special storage or refrigeration. In fact, RUTFs can be stored for three to four months in hot and remote areas such as Ethiopia, the Sudan, or other countries with similar climates and lack of electricity. The successful treatment of malnutrition coupled with the easy portability and storage of this lifesaving food are two reasons why it has been used so extensively. To date, ready-to-use foods have been most effective in treating cases of extreme malnutrition among children in refugee camps.

RUTFs are so successful in reversing severe malnutrition that WHO is considering revising their policy, which currently restricts the use of ready-to-use foods to extreme cases of malnutrition. Now they are considering using the same emergency food as preventive measures for underweight children. If the food is used before children reach the extreme state of malnutrition, WHO may be able to significantly reduce one morbidity risk factor for children.
The Federation of Red Cross and Red Crescent Societies

The Federation of Red Cross and Red Crescent Societies was established as an international committee to provide relief to wounded soldiers. The founders believed that any organization that provides medical care to soldiers wounded on the battlefield should be a neutral entity in war and therefore free from attacks by either side.

The federation began as a collection of smaller, unaffiliated organizations. In 1919 the smaller organizations banded together to form an international organization known then as the League of Red Cross Societies. Renamed in 1991, the federation currently consists of over 180 societies.

The federation’s mission is to provide assistance to individuals irrespective of nationality, race, religious beliefs, class, or political opinion and to improve the lives of people by mobilizing the power of humanity. The federation focuses on four key areas: promoting humanitarian principles and values, disaster response, disaster preparedness, and health care in communities. However, the federation is probably best known for its work in the area of disaster relief.

Remember our discussion earlier in the chapter about Hurricane Katrina? To use the federation’s familiar tag line, “The Red Cross was there.” The federation provided temporary shelter, meals, and general assistance to the thousands of people displaced by Hurricane Katrina. The goal was to provide for individuals’ basic needs including food, shelter, and emergency health care.

Another recent example of the relief assistance provided by the federation is the aid provided to thousands of people injured and displaced by the tsunami that destroyed parts of Indonesia and Southern Thailand in December 2004. The tsunami killed approximately 110,000 people and left hundreds of thousands of others homeless.

Thus, in contrast with WHO, the federation focuses on providing emergency medical and humanitarian aid to people as a result of a natural or a man-made disaster. It does not address policy issues.

Médecins Sans Frontières (Doctors Without Borders)

Médecins Sans Frontières (MSF) shares some of the goals of the Federation of Red Cross and Red Crescent. Like the federation, MSF is an international humanitarian organization that provides emergency aid to persons in need. Specifically, however, MSF responds to the medical care needs of people affected by armed conflict (wars), epidemics, and natural or man-made disasters and to persons who have no access to health care. It was founded in 1971 as a nongovernmental organization to provide emergency medical assistance to people in need and to document the plight of the people it served. Currently, MSF is based in 19 countries.

MSF is known throughout the world for its work in establishing emergency feeding stations in famine-stricken areas such as East Africa or among refugees in countries affected by war or civil conflicts. Recently, MSF has been at the forefront of the effort to use the ready-to-use peanut butter paste (RUTF) to combat malnutrition, an effort also spearheaded by WHO as mentioned earlier (Doctors Without Borders, 2006).

In addition to feeding stations, MSF provides medical care. While this work often falls under the category of immediate care, MSF also assists the trained health care providers in each region or country to support their existing efforts to provide care and to train them to improve the quality of care available. In this way MSF endeavors to help develop the in-country personnel resources needed to provide long-term and sustained medical care once MSF departs. In essence, MSF provides both immediate and long-term health care systems.
WHO, the Federation of Red Cross and Red Crescent, and Médecins Sans Frontières supply some of the basic health and humanitarian services that are unavailable or unaffordable in developing as well as some developed countries. In essence, they provide the basic health systems infrastructure unavailable in some regions of the world.

SECTION III. HEALTH POLICY

National Policy: Global Implications

At first glance, this section may seem redundant. After all, we have discussed national health policy throughout the chapter. For example, we explained the benefits of U.S. national childhood immunization policies on families and communities and examined the effect that termination of such policies has on the health of an entire nation or region. And through our opening story about Mr. Speaker, we saw how one individual’s efforts to circumvent national health policy can set the stage for a potential national or international health crisis. In each of these instances, it is easy to see the benefits to individuals and to the community of having a national health policy.

But national policies can have a negative effect as well. One criticism of national health policies is that in some instances national policies prioritize the health of the community over the rights of the individual. The isolation and containment policies to limit the spread of TB in the 19th and 20th centuries in the United States serve as good examples.

Isolation and Containment for TB and HIV/AIDS

In the late 19th and early 20th centuries, local and federal agencies in the United States identified TB as a contagious disease that posed a public health threat to the population (Snider, 1997). To prevent the risk of infection of whole communities, several states constructed sanatoriums, lodge-like facilities to isolate and treat TB patients. The primary goal of the treatment centers was to contain the spread of the highly contagious TB disease by preventing individuals with the disease from interacting with noninfected persons. A second goal was to treat TB patients before returning them to their communities. Local and state governments could and often did force TB patients to reside in a sanatorium, sometimes for as long as a year, before returning to their homes. In essence, local and national health policy prioritized the public health and welfare of the population by treating and forcefully isolating (if necessary) individuals with TB, sometimes against their will.

The first sanatorium of record in the United States was opened in 1885 in Lake Saranac, New York (Davis, 1996). Later, other states constructed similar treatment sanatoriums. By the 1950s, over 800 sanatoriums were operating in the United States, serving over 70,000 patients (Davis, 1996; Snider, 1997). The screening and isolation of TB patients, in addition to a rise in the socioeconomic conditions of the U.S. population, jointly helped reduce the prevalence of TB (Binkin et al., 1999).

More recently, in 1986, Cuba used a similar containment strategy for HIV/AIDS. When HIV/AIDS was first detected in Cuba, the Ministry of Health isolated individuals who tested positive for HIV to treat them and their sexual partners. The aggressive policy of isolation, containment, and treatment of HIV-positive individuals helped reduce the prevalence rate in Cuba to 0.1% by 2001 (AMFAR, 2006). When compared with a global HIV rate of 1.0%, Cuba’s prevalence rate for HIV was, essentially, negligible (see Chapter 2, Research Methods).
Containment and isolation policies always raise concerns about the rights of the individual. For example, you may have had a few questions about Mr. Speaker’s rights when reading in the opening story that the United States activated its forced containment policy. Yet the policies of isolation and containment as practiced in two very different countries suggest that, in some cases, a government may believe that it is its duty to protect the health and well-being of communities first when responding to the health problems of an individual.

In spite of the benefits of public health policies that protect the community, we cannot deny that such policies carry a cost for the individual. In Mr. Speaker’s case, in the cases of U.S. TB patients in the 19th and 20th centuries, and in the case of HIV-positive individuals in Cuba, the individual may not be free to determine whether or how to address his or her health issue.

SECTION IV. THE ECONOMIC CONSEQUENCES OF POOR HEALTH

Who Is Affected?

When thinking about health and illness, we often focus on the sufferer, the person afflicted with the illness. That is a sensible place to start. But consider for a moment an individual’s health from another perspective. Suppose a 40-year-old man is the major wage earner for his family, a wife and three children. His work in a textile factory, together with his spouse’s income as an assistant in a local bakery, provides them with enough money to buy a small but adequate house for themselves and their three children and to pay for daily necessities. This income does not allow enough, however, to afford health care insurance.

Suddenly, the man suffers a stroke. After several weeks of medical care and daily exercise, he is able to move about without assistance, but he cannot return to his old job. His job required manual labor: lifting and transporting heavy containers. Unable to do the same job and unable to find a less physically demanding job, he is now unemployed.

The man’s wife takes a second job to make up for the loss of earnings, but her two jobs still pay considerably less than her husband’s old job at the factory. What is more, working two jobs the woman finds that she is often exhausted and more prone to catch colds and other minor viral infections.

Seeing the desperate economic condition of the family, the oldest son decides to leave school in the 10th grade to find work and help the family. Because he is a talented student, the family hoped the son would study engineering at a university near them. With a degree in engineering, the son could have helped support his family. Perhaps he can return to school in the future. For now, however, he is needed at home to provide additional economic support for his family.

This is a sad but all too common story in many parts of the world. One person’s illness can have a domino effect on the health and well-being of an entire family. It is easy to see the physical costs of the illness on the man and on the economic stability of the family. Less easy to see is the effect his illness has on his emotional state as he sees his wife and son work harder to compensate for his limitations or the emotional and health strains experienced by other family members.

One clear impact of the changed financial circumstances on the wife is her need to work two jobs. The additional responsibility is clearly more demanding physically. But there are emotional health costs as well. With less time at home, she has less time to devote to her role as the primary caregiver of the younger children. The story could go on. We could look at each of the
younger children to assess the impact of the changed circumstances on their physical and emotional health, but the likely effect is clear. One person’s illness can affect an entire family. The family’s well-being is jeopardized by this economic downturn, and as a result the family can easily slip into poverty, and into poor family health.

**Individual Health and Community Outcomes**

The family certainly suffers from the ill health and loss of productivity of one of its members. But so does the community. We noted previously that communities, and in some cases whole countries, can be adversely affected when large numbers of their working-aged population are compromised by ill health. To illustrate this point, we consider the case of workers in Lesotho, a landlocked country in South Africa (see Figure 3.8). Lesotho, a country the size of the state of Maryland, has little industry to employ its people or to help them earn an income. As a result, many travel into South Africa, an hour’s journey by local transport, to find jobs as domestic workers, day laborers, or other similar type jobs.

Currently, Lesotho has an HIV/AIDS prevalence rate of 40%, meaning that 4 in 10 adults are infected with the disease. In some cases whole communities have been affected, leaving

![Figure 3.8](image.png)

**FIGURE 3.8  South Africa and Lesotho.** Lesotho, a landlocked country surrounded by South Africa, reports an adult HIV infection rate of 40%.

children and grandparents as the principal wage earners. In essence, in Lesotho almost half of a generation of adults, 20 to 40 years of age, is becoming ill and dying at an alarming rate. Their illnesses and diseases devastate not only the family but the community and the country as well. The young adults would have assumed roles in their communities as employed laborers but also as local organizers for social events, such as fundraisers to raise money for irrigation ditches, or as the coach of a local soccer team. Now, the same adults are unable to work or volunteer. As a result, businesses fail or relocate to countries with a larger supply of workers, and community life becomes a shadow of its former self.

The loss to Lesotho’s workforce can be measured in the country’s economic profile. The loss to Lesotho’s families and to their community is much harder to quantify.

Summary

Many would agree that access to health care should be the right of all individuals. Yet we have been reading about many instances in which, unfortunately, this is not the case. In both developed and developing countries, large segments of societies are unable to obtain health care due to a host of individual, community, systems, and policy factors. The lack of access to health care leads to poorer health outcomes and more costly health care.

It may not be immediately obvious how a health policy positively impacts individual’s health. In fact, most often the impact may be indirect. Yet health policies that ensure access to clean water and air and safe neighborhoods or that provide direct medical care benefit each individual in the society.

Personal Postscript

DO GLOBAL HEALTH POLICIES AFFECT YOU?

Simply stated, yes! We may not be aware of the ways in which global health policies affect us given the vast and well established health care systems and infrastructure in the United States, but they do.

First, most developed countries are members of the World Health Organization. U.S. representatives to WHO help shape the policy decisions and plan the health activities and projects to be undertaken throughout the world. The effects of these policies are more evident in less developed countries, but even developed countries must continue to strive toward the Millennium Goals of 2012 to provide health care for all, both here and abroad.

In addition, organizations like the Federation of Red Cross and Red Crescent and Médecins Sans Frontières send their aid workers to assist in disasters and to provide needed medical care in all countries, even in the United States. The Red Cross and Médecins Sans Frontières were two of the many aid organizations that provided valuable assistance to the residents of New Orleans in the aftermath of Hurricane Katrina. Assistance also poured in from Europe and Latin America, in part because nations around the world see it as their responsibility to help provide for the health and well-being of others, regardless of their nationality.

Remember also that diseases and illnesses can cross borders. Throughout history we have seen the effects of epidemics and pandemics that, by definition, do not respect borders. More
recently, we have experienced the effects of HIV/AIDS, the avian flu, and the A/H1N1 (swine) influenza, which have caused illness and death to thousands globally including the United States. So another reason to be mindful of global health policy is to safeguard and protect your own health as well as others.