Why the Surge in Infectious Diseases?

by Becky Sweat

Why is the world facing epidemic after epidemic of new and reemerging infectious diseases? What are we doing wrong, and how will the ultimate healing

West Nile virus, Zika, Ebola, H1N1 avian influenza, swine flu, Middle East respiratory syndrome (MERS), severe acute respiratory syndrome (SARS), yellow fever, hantavirus, Nipah, Hendra, Marburg, chikungunya, dengue.

Another virus with a peculiar name always seems to be lurking around the corner, poised to become the next global health emergency.

Just in the last few years we've witnessed the Ebola epidemic in western Africa in 2014, MERS outbreaks in the Arabian Peninsula in 2014 and Korea in 2015, and the spread of the Zika virus throughout most of the Americas at the close of 2016.

Sounding the alarm

Public health officials worldwide have been sounding the alarm: Infectious disease outbreaks are increasing in frequency and severity, and the number of unique pathogens responsible for disease is growing.

One of the most urgent warnings comes from World Health Organization (WHO) Director-General Margaret Chan: "What we are seeing now looks more and more like a dramatic resurgence of the threat from emerging and re-emerging infectious diseases," she stated. "The world is not prepared to cope."

But what exactly is meant by *emerging* and *reemerging* diseases? An *emerging* pathogen is one that is appearing in the human population for the first time and has never been recognized before. According to the WHO, at least 40 new infectious diseases have emerged since the 1980s, at a rate of one or more per year.

Examples include Ebola, HIV/AIDS and Lyme disease. Emerging viruses often have no effective treatment, cure or vaccine, and the possibility of preventing or controlling them is extremely limited.

The majority of emerging pathogens are *zoonotic*—meaning they are transmitted between animals and people—which makes them particularly challenging. "Zoonotic diseases cannot usually be eradicated due to the fact that it is not possible to eliminate all of the animal reservoirs or vectors that might be carrying the zoonosis," explains David Freedman, M.D., professor of medicine and epidemiology at the University of Alabama.

A *reemerging* disease is caused by a virus, bacterium, parasite or fungus that has long existed and was once thought to be controlled or wiped out, but is now making a comeback. These diseases are often spreading geographically, usually in a more virulent or drug-resistant form.

Today there are antibiotic-resistant strains of tuberculosis, malaria, cholera, diphtheria, staphylococcus, streptococcus and salmonella—to name a few "superbugs" that have made their debut in recent times.

Each year, the number of infections and deaths caused by superbugs continues to rise. The *Review on Antimicrobial Resistance,* a 2016 report published in the U.K., predicts that by 2050, 10 million people globally will die each year from antibiotic-resistant bacteria alone, based on current trends.

Factors behind the trends

What a contrast to the optimism of 50 years ago! Then U.S. Surgeon General William Stewart famously proclaimed, "The time has come to close the book on infectious diseases. We have basically wiped out infection in the United States."

So why are we now seeing a surge in infectious diseases?

The most straightforward answer comes from the Bible. In the Olivet Prophecy, Jesus Christ predicted the signs that would precede His return, including pestilence and disease on a global scale (Matthew 24:3-8; Luke 21:11).

In addition to looking at Bible prophecies, we can observe specific factors that are helping cause the problems. Many health experts, like biotech consultant Thomas Monath, M.D., believe mankind is actually creating its own disease problems, albeit unintentionally. "We're making changes in our environment or lifestyles to cause the emergence or spread of disease," he says.

Some of the primary ways humans have paved the way for modern disease outbreaks include:

• Encroachment on animal habitats.

The number of people on planet earth has soared from 2.5 billion in 1950 to 7.5 billion in 2016. This has prompted people to settle in wilderness areas where only animals had lived.

"Environments in the developing world used to be quite remote but are now much less so as a result of human activities like deforestation, dam projects, irrigation, road construction and extensive agriculture," says James Hughes, M.D., professor of medicine and public health at Emory University. When people enter these ecosystems, they often encounter new pathogens not found anywhere else. Once infected, they spread the pathogen wherever they go.

• Urbanization and overcrowding.

Increasing numbers of people, particularly in the developing world, are moving from rural areas to large urban centers, seeking work. Many end up living in overcrowded "megacities" with 10 million or more residents. According to a 2016 report from the United Nations Human Settlements Programme, there are now 29 megacities in the world (up from 14 in 1995), and 79 percent of them are in developing nations.

With high population densities, megacities are ideal breeding grounds for disease. Furthermore, the typical megacity's infrastructure isn't prepared to handle its swelling population.

"Water and sanitation systems are often inadequate or nonexistent, so residents must drink water that's contaminated with bacteria and sewage," Dr. Freedman says. "Hospitals may be in short supply, so those who are ill may not be able to get the medical care they need."

• Eating exotic animals.

Some cultures have a long tradition of eating exotic wildlife. Africa has its bush meat trade, where monkeys, apes, aardvarks, rats and other wild animals are hunted and sold for food. The Chinese have their open-air wet markets, where exotic creatures like civets, snakes, tree shrews, bats, badgers and pangolins are sold live to consumers, who will then slaughter and consume them.

"Any viruses carried by these animals can be transmitted to people via consumption, if people handle the animals, or sometimes if they just come into the same air space," explains Dr. Hughes.

However, the issue is more than just the transmission of an animal pathogen to a human. The ultimate concern is that close contact with infected animals or consuming them can cause a new pathogen to emerge. Simply put, if a human infected with a virus comes in contact with an animal that has a similar type of virus, the genetic material of the two pathogens can get "mixed up" and recombine. This can result in a new virus that infects both animals and people.

This process has caused the emergence of some of the world's deadliest diseases. For instance, HIV is a fusion of the Simian Immunodeficiency Virus (SIV) that infects monkeys and apes, and a similar type of virus that infects people. Scientists believe that HIV originated from butchering chimpanzees for bush meat.

• Changes in sexual behavior and IV drug use.

Up until the mid-20th century, having multiple sexual partners was frowned upon by most people. However, in Western society today, having multiple sexual partners before marriage is not only acceptable, but has become the norm. Additionally, intravenous drug use has become rampant, with drug users often sharing injection paraphernalia. Both trends have fueled the spread of HIV, hepatitis C, genital herpes and other sexually transmitted diseases—all of which are transmitted through bodily fluids.

• Improper use of antibiotics.

Overuse of antibiotics has created new antibiotic-resistant bacteria. According to the Centers for Disease Control and Prevention (CDC), up to 50 percent of antibiotics used in hospitals and clinics are either unnecessary or inappropriate. Often what happens is patients insist on having antibiotics when they have a cold or the flu (which is almost always caused by a virus and won't respond to antibiotics), and doctors give in to these demands. Or physicians might prescribe antibiotics when they can't make a definite diagnosis, "just in case" bacteria are present.

Ultimately, disease outbreaks and pandemics are a result of mankind's broken relationship with God.When a particular drug is prescribed too much, bacteria can build defenses against it. Dr. Hughes explains, "This drug resistance is then transferred to the next generation of that bacteria, effectively rendering that particular medication useless."

Bacteria can develop resistance to multiple drugs, eventually becoming the virtually untreatable, so-called superbugs.

Biblical perspectives

Several of the factors just discussed are direct violations of biblical instruction. For one, Leviticus 11 and Deuteronomy 14 spell out which animals should and shouldn't be eaten. Many of the diseases plaguing our modern world wouldn't be problems if people weren't eating "unclean," exotic animals, which carry disease-causing organisms not present in domesticated "clean" animals. Deuteronomy 23:13 says that human waste should be buried away from where people live. This prevents food and water supplies from becoming contaminated. It's no

wonder that diseases like diarrhea, dysentery, hookworm, roundworms, cholera and typhoid—which all result from contact with human waste—are rampant in shantytowns that do not have sanitation systems.

In Leviticus 18 and 20 God prohibits extramarital and premarital sex and other unhealthy sexual practices. There's no question that this kind of sexually immoral behavior has contributed greatly to the spread of AIDS and other sexually transmitted diseases.

Ultimately, disease outbreaks and pandemics are a result of mankind's broken relationship with God. When God brought the Israelites out of Egypt, He told them they could avoid the curse of disease if they obeyed His commandments and statutes (Exodus 15:26). On the other hand, there would be consequences for disobedience, which included disease outbreaks (Deuteronomy 28:15, 21-22, 27-28). The Israelites—like all people before and since—disobeyed God, and mankind continues to reap the consequences of sin.

Today, humanity as a whole is cut off from God and vulnerable to the ravages of disease. This won't always be the case though. When Jesus Christ returns to earth and the Kingdom of God is established, mankind will at last be united with our Creator and receive all the blessings of living God's way of life—which includes good health and a world free of disease outbreaks.