With a shudder, we all learned in school about the Black Death's devastation of Europe. A pandemic like that could never destroy the current planet thanks to modern treatment and proper cleanliness! Is that possible?

Many epidemiologists anticipate a worldwide pandemic will strike in the not-too-distant future. So, what are our options? To defend our own civilization and to assist others, we must first comprehend how epidemics begin and escalate to devastating proportions.

These chapters fill in the gaps, tracing the emergence of numerous significant epidemics and highlighting the often unusual circumstances that made them possible.

You'll figure it out.

- how the establishment of a bank aided in the spread of a terrible cholera outbreak.
- In a single day, a virus swept across five continents.
- New Yorkers used to eat a lot of human feces back in the day.

Chapter 1 - As humans expanded over the world, formerly innocuous animal infections adapted to our bodies and became ill.

Have you ever wondered if there is any spot on Earth that people haven't colonized? We've spread to practically every corner of the globe during the last few centuries. We may even be found in harsh environments such as marshes and Antarctica.

Yet, sometimes this massive growth has dangerous ramifications.

Take the Sundarbans, a huge mangrove forest in Bangladesh and India that Mughal monarchs kept unoccupied because they viewed it as a terrible and wicked area. In some ways, this proved to be accurate, since the area was crawling with cholera germs transported by small flea-like critters at the time.

However, the East India Company acquired control of the region around 1760, tearing down the forest to produce rice. Humans had colonized 90% of the Sundarbans by the end of the nineteenth century and were unintentionally working and bathing in cholera-bearing copepod-infested water.

The cholera germs were able to adapt to our bodies and make us their new host as a result of this extensive and constant exposure. The bacteria acquired little "tails" over time, which allowed them to link together, form a sticky film, and infiltrate our gut.

This happened again in 2003 when a bat virus learned to adapt to people in a "wet market" in Guangzhou, China, causing the severe acute respiratory syndrome (SARS) outbreak.

Turtles, snakes, and bats are among the live creatures sold by merchants at these marketplaces. The virus that would later cause SARS began as a horseshoe bat virus, which is normally harmless to humans and most other animals.

However, because there were so many wild animals confined in such a tiny space at this market, the virus had the constant exposure is required to adapt to other animals and, eventually, people.

As a result, we understand how an outbreak begins. We'll see how this first encounter may develop into a global epidemic in the next chapter.

Chapter 2 - In order to spread, pathogens use our own transportation system.

From boats to trains to aircraft, human transportation has advanced quickly, and we now have the luxury of traveling thousands of kilometers in only a few hours. Unfortunately, this is also beneficial to bacteria.

Likewise, viruses' capacity to spread would be severely constrained without the aid of our transportation infrastructure.

Let's look at cholera once again. Cholera couldn't even spread from one person to another in its early stages. To go about, it created a toxin that causes diarrhea, which proved to be a successful means of flushing contagious germs out of one ill person and into the vicinity of other, healthy people.

Even for cholera, diarrhea is not an optimal route of transportation since the illness can only spread to persons who live in close proximity to one another.

Fortunately, the nineteenth century witnessed the emergence of several new modes of transportation, including sea travel and canal transit. And because Vibrio Cholera is a watery infection, this was ideal: once cholera got into a canal system, it could spread across vast distances.

Air travel is now our major mode of global communication, making it much simpler for diseases to spread.

This was seen during the SARS epidemic in 2003. Doctors were dubious of the reason when the first casualties in Guangzhou arrived at a hospital. The lead physician flew to Hong Kong, where he slept in a hotel and infected another 12 individuals, including a flight attendant.

The flight attendant then flew to Singapore, where she became unwell and had to check into a hospital. Her doctor was supposed to fly to New York, but he only got as far as Frankfurt before succumbing to the illness.

Infected individuals also traveled to Vietnam, Canada, and the United States. SARS has spread to five continents in only one day.

But, as we'll discover in the following chapter, public transit isn't the only way we help these germs; another issue is our waste-management system.

Chapter 3 - Despite advances in human waste management, excrement can still cause deadly epidemics.

People in a variety of businesses are now educated on good hygiene and sanitation procedures. However, getting to this somewhat clean atmosphere took a long time.

People were surrounded by dirt throughout the eighteenth and nineteenth centuries, producing ideal circumstances for cholera outbreaks.

Human feces could be found in alleyways and on sidewalks in New York, for example, and the rate of contact was so high that the typical individual absorbed roughly two tablespoons of it per day!

The situation was exacerbated by Manhattan's "water lots," which were marshlands along the shore that were converted into housing complexes. Rising tides flooded the neighborhood twice a day, pouring excrement and germ-infested water into streets, cellars, and even into homes.

Due to a drought in 1832, the limited supply of drinking water became progressively polluted, resulting in a devastating cholera outbreak.

Western countries, thankfully, now have suitable mechanisms in place to treat human waste. However, massive industrial farms that manage massive volumes of animal feces continue to be plagued by the problem.

Between 1959 and 2007, the size of hog farms in the United States climbed by 2,000 percent, while chicken farms increased by a stunning 30,000 percent. As you can expect, the amount of garbage generated on these farms surged dramatically. As a consequence, viruses grow, mutate, and pollute the air, soil, and water on the farm, resulting in manure pools.

Even if you don't live close, you might be exposed to the harmful viruses that develop there, which can infect vegetables at your local supermarket via wastewater and manure.

Thousands of Germans were infected with bloody diarrhea after eating tainted fenugreek sprouts from Egypt in 2011, which were caused by a rare Shiga toxin-producing strain of the common gut bacteria E. coli, known as STEC.

Dangerous waste is still a problem, and the next chapter discusses how large cities contribute to disease transmission.

Chapter 4 - Pandemics flourish in huge populations.

The world's major and lively cities attract a great number of people. The world's major and lively cities attract a great number of people. Since the beginning of the nineteenth century, New York City has been host to individuals seeking employment and a better living from all over the world. However, this hasn't always worked out.

As the population grew rapidly, individuals were compelled to live in deplorable conditions. By 1850, the slums of New York City were six times as populous as those of modern-day Tokyo or Manhattan. Two huge cholera epidemics occurred as a result of these circumstances, one in 1832 and the other in 1849.

In 2014, many major West African towns battled an Ebola outbreak that killed thousands. And it's no surprise that all of these epidemics hit the most densely populated regions first.

Pathogens benefit from large groups in three ways.

To begin with, the more individuals there are, the faster infections may spread.

Many viruses spread through social contacts, such as shaking hands, thus the more crowded a place is, the more likely it is that pathogens will spread. As a result, whenever a virus transfers from a sparsely inhabited location to a densely populated metropolis, its transmission rate increases dramatically.

Second, diseases may persist in big groups for extended periods of time.

There are just more individuals to infect in densely populated cities, which means an epidemic takes longer to spread.

Prior to 2014, all Ebola outbreaks, for example, took place in smaller cities and lasted just a few months. However, even 10 months after the outbreak began in congested slums in West African towns, the incidence of infections continued to rise.

Third, germs are free to be aggressive in crowds.

Pathogens can't afford to be aggressive and kill their victims rapidly in less populated environments. It wouldn't be able to infect other individuals if it couldn't. However, because germs may spread quickly in large areas, diseases can become more aggressive, sickening and killing infected people more quickly.

However, illness propagation is aided by more than simply the throngs of modern city life. We'll learn more about how crooked politics works in the upcoming chapter.

Chapter 5 - Pandemics can be facilitated by political deception.

While there have been water shortages in New York City, the city has never been short on unscrupulous politicians. A badly administered public-health system is also a primary source of epidemics.

Indeed, a power-hungry senator aided the epidemics of cholera in New York City in 1832 and 1849.

Manhattan's fresh water supply was alarmingly insufficient in the late 1700s, and there wasn't enough to put out the home fires that erupted all across the city.

Dr. Joseph Browne and engineer William Weston recommended the building of a $200,000 waterworks to alleviate the situation.

State senator Aaron Burr, on the other hand, blocked their idea and decided to build a waterworks himself.

However, Burr was unconcerned about the water; instead, he intended to establish a new bank because the banking sector was now controlled by his political opponents, the Federalists.

As a result, he designed a deception scheme. In order to show the state that his proposal would help the neighborhood, he would create a water business in addition to the bank.

Burr's idea was accepted, and he was able to obtain $2 million in funding from investors. However, he only put $172,261 into the waterworks and kept the rest for his bank.

This resulted in disastrous waterworks that poisoned the city's drinking water for more than 50 years, leading to the cholera outbreaks of 1832 and 1849.

Despite this, Burr triumphed: in 1801, he was appointed as Thomas Jefferson's Vice President.

Even now, political deception allows diseases to flourish.

The Chinese government declared the SARS outbreak a state secret in 2002 and 2003, threatening physicians and journalists with prosecution if facts were revealed.

Eventually, a Guangzhou resident told it to an internet acquaintance, and the knowledge spread. However, the government continued to deny the outbreak and prohibited the World Health Organization (WHO) from studying cases.

As a result, WHO was unable to interfere, and the virus continued to spread unabated.

However, as we'll see in the following chapter, even in the absence of corruption, medicine struggles to combat breakouts.

Chapter 6 - Medical progress has been stymied on several occasions by strong opinions.

Hippocrates, the founder of modern medicine, and the renowned Hippocratic oath that doctors swear are surely familiar to you. Despite his clout, his lessons haven't always proven to be beneficial.

In the nineteenth century, doctors frequently discarded cholera therapy because it did not follow Hippocratic precepts.

At the time, a few doctors, particularly William Brooke O'Shaughnessy, had discovered an efficient approach to treat cholera patients: intravenous replacement of lost fluids and minerals.

O'Shaughnessy even put his approach to the test by delivering it to over 200 cholera-stricken convicts. Only 4% of individuals who received the therapy died, much fewer than those who did not.

Thus, why did the medical establishment's elite ignore these accomplishments?

However, in the 1800s, medicine was founded solely on Hippocratic principles, which claimed that epidemic illnesses such as cholera were spread by toxic and foul-smelling gases known as "miasmas." Because a simple replenishment of fluid and minerals wasn't a realistic treatment based on this diagnosis, O'Shaughnessy's approaches were dismissed. As a result, many patients who may have been rescued perished.

Even if we now live in more enlightened times, we still confront challenges using the reductionist paradigm, which involves reducing complicated situations by attempting to trace them back to a single source.

For instance, cholesterol is the single cause of heart disease, and microorganisms are the primary cause of all infectious illnesses.

Doctors usually focus on a symptom while ignoring the greater context, which means they neglect to explore for additional signs outside their area of specialty – or in a patient's surroundings or lifestyle.

For example, at the time of the 2014 Ebola epidemic, apes had been infected with the illness for some months. However, because veterinarians and doctors seldom communicate information, this link was uncovered after it was too late.

Knowing how to avert an epidemic necessitates thinking beyond the apparent, as we'll discover in the following chapter.

Chapter 7 - Choosing to focus on foreign infections might divert our attention away from other domestic threats.

Exotic illnesses terrify people by their very nature. However, it's easy to get carried away and overlook the risks that lie just at home.

When Ebola first emerged in 2014, the entire globe was shocked and horrified. Nearly two-thirds of Americans were concerned that the disease would spread across the country.

However, these anxieties are frequently unjustified.

Even government authorities overreacted: persons returning from one of the impacted African nations were subjected to quarantines and required twice-daily health exams for weeks.

And some of these instances appear to be ludicrous. One instructor was confined after attending a seminar in Dallas, which was 10 miles distant from an Ebola treatment center. Other nations, like Australia and Canada, have made it illegal to travel to or from West Africa.

Of course, being unconcerned about frightening new viruses such as SARS or avian flu is a horrible idea. However, although we're overly anxious about these hypothetical new threats, we're amazingly nonchalant about more prevalent infections.

Take, for example, Lyme illness. Lyme disease has expanded across the United States since its discovery in 1975, and despite the fact that it is a highly dangerous disease, there is no general panic.

Lyme disease infects almost 300,000 individuals each year, and even when it is correctly identified, it can be difficult to cure. Suicidal thoughts, constant agony, and paralysis are just a few of the severe and long-lasting effects. Despite this, most individuals are unconcerned about protecting themselves from the disease-carrying ticks.

Lyme disease is made much more hazardous by our indifference to it.

Experts agreed that there was a slim chance of an Ebola outbreak in the United States. Regardless of the facts, it was feared more than an already-existing illness that has afflicted over a quarter of a million individuals in the United States alone.

Pandemic: Tracking Contagions, from Cholera to Ebola and Beyond by Sonia Shah Book Review

Many new viruses have arrived with civilization, and researchers believe a new pandemic will arise in the coming decades. We must understand the origins and causes of these new

infections in order to survive. A lack of communication between different sectors of medicine, crowding, and waste management are only a few variables that contribute to the emergence of new illnesses.

https://goodbooksummary.com/pandemic-by-sonia-shah-book-summary-review/