

GREAT DISASTERS

The Spanish Flu

Some events are on a scale so huge that it's really difficult to find adequate words to describe them. A hundred casualties is a tragedy. A hundred million is incomprehensible. That's more than the current population of the United Kingdom. This was an event on a global scale, reaching into the farthest corners of the world, leaving almost nowhere untouched.

And what could possibly cause such a devastating catastrophe?

The answer was chanted in the streets by children with skipping ropes.

"I had a little bird, and its name was Enza, I opened the window and In Flew Enza."

I'm Kari Fay, and this is Great Disasters.

For most people in modern Western society, the flu is nothing more than an annoyance. You take a few days off work, huddled under a blanket with lemon tea and painkillers, and feel awful until it passes. Unless you're in a particularly vulnerable category, it's not really something you'd worry about too much.

But influenza is a tricky virus. It evolves, and it can do so very quickly. It spreads rapidly, especially when a lot of people are in close contact, and it can survive outside the body, so anything touched by an infected person - from a door handle to a light switch to a banknote - could carry it to a new host. And sometimes, a particularly virulent strain arises - and a pandemic ensues. This is what happened in 1918, in an outbreak that's often called the Spanish Flu.

The word pandemic - from the Greek for "all people" - is used to describe an infectious disease which crosses international borders to spread worldwide. But that description doesn't really convey its impact.

Joseph Garas, from New York, who lived through the Spanish Flu, gave his granddaughter Valeria a particularly poetic explanation when she asked about the uncles she had never met.

"It is a thief who steals the young and the old and gives no time to mourn," he said. "It stole Joseph, my namesake after he helped his friend pull a wagon up the street. It stole Stanley who had just learned to throw a ball to the other side of the yard."

Like any disaster, a pandemic requires the right conditions to take hold, and in 1918 conditions were sadly perfect.

The Great War - which we now call the First World War - was drawing towards its end. Four years of conflict had created ideal breeding grounds for disease, both in military and civilian populations.

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Wartime censorship in some countries prevented widespread education which could have slowed or halted the spread of the disease, and economic hardships in the wake of the war meant that resources for tackling the infection were scarce. Scientists didn't yet understand the cause of influenza, and the first vaccination for the flu virus was still twenty years away.

There was also something different about this strain. Most deaths from influenza are usually in high-risk populations - the very young or old, the weak. This strain predominantly killed young, previously healthy people.

It was widely called the Spanish Flu (or the Spanish Lady) because of the false impression that it either originated in Spain, or that Spain was particularly affected by it. Actually, neither is true. Yes, Spain was hard-hit, but so was everywhere else. As a neutral country in the war, though, Spanish papers were free to report on the disease, especially when it gravely affected their king, Alfonso the 13th, and when he fortunately recovered. There may be a psychological factor in calling it the Spanish flu, too - at least, outside of Spain. Identifying something terrible as "foreign" allows for a little mental distance from it. The Spanish were not immune to this concept either; they referred to the the flu as the Naples Soldier, again distancing themselves and attributing it to an outsider.

So if it didn't start in Spain, where did it come from? The truth is, we don't actually know. There are a few theories, though.

The first confirmed outbreak in America was in a military training facility in Kansas. The unfortunate Private who was identified as Patient Zero just happened to be a mess hall cook, pretty much the last person you want carrying a contagious disease. He dragged himself to the infirmary one Monday morning in March 1918, and by midday over a hundred of his fellow soldiers had followed him. Within a week, over 500 cases had been reported; over 1000 by the end of the month. This outbreak took the lives of 46.

And then, those surviving soldiers, some still coughing, were sent off to the front, taking the virus with them. Or so the theory goes.

Another theory, put forward by virologist John Oxford, puts the centre of the pandemic in France, at a major troop staging and hospital camp in Étaples.

What these camps have in common could be key. Alongside a concentration of people in close quarters, they also had both poultry and pigs nearby, kept to feed those people. Different strains of the influenza virus are found in birds and pigs, and both have been known to spread to people. You probably remember the avian and swine flu scares we've had in more recent years. It is therefore possible that putting all three together allowed this uniquely deadly strain to evolve. Once it had evolved, the constant movement of people through the camps allowed it to spread easily.

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Wherever it originated, the Kansas outbreak in Spring 1918 was part of the first wave; deadly, but not yet on such a horrific scale. The second wave, which began in the late summer of that year and persisted through Autumn, was the deadliest. Finally, like a last kick when the world was already down, a third wave took further lives in early 1919.

The so-called Spanish flu was everywhere. It reached remote Pacific islands, and even the Arctic. The war required massive movements of troops, and the introduction of modern travel systems meant people could go further, faster. And wherever people could go, so could the flu, striking them down like dominoes.

A volunteer nurse assigned to various military bases in the States wrote a letter in October 1918, at the height of the second wave.

"Dear friend Louise,

... As many as 90 people die every day here with the "Flu". Soldiers too, are dying by the dozens... When I was in the Officer's barracks, four of the officers of whom I had charge, died. Two of them were married and called for their wife nearly all the time. It was sure pitiful to see them die. I was right in the wards alone with them each time, and Oh! The first one that died sure unnerved me-- I had to go to the nurses' quarters and cry it out. The other three were not so bad. Really, Louise. Orderlies carried the dead soldiers out on stretchers at the rate of two every three hours for the first two days [we] were there."

Questions were, of course, spreading as quickly as the infection. What was different about this strain of flu, and why was it killing so many people?

The Times, at the time, suggested that it was at least in part due to "the general weakness of nerve-power known as war-weariness". The suggestion was that it wasn't the strain of flu itself that was particularly deadly, but the conditions in which it spread. Malnourishment, poor hygiene and overcrowding in military camps and hospitals promoted the spread of influenza alongside secondary bacterial infections, which combined to kill. The flu, then, essentially weakened those healthy young adults enough for them to come down with something else that helped kill them.

While that may have been a factor, it's not thought to be the complete picture.

A doctor stationed at Camp Devens in Massachusetts described the onset of the epidemic in a letter to a friend.

"These men start with what appears to be an attack of la grippe or influenza, and when brought to the hospital they very rapidly develop the most [vicious] type of pneumonia that has ever been seen. Two hours after admission they have the mahogany spots over the cheek bones, and a few hours later you can begin to see the

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cyanosis extending from their ears and spreading all over the face... It is only a matter of a few hours then until death comes, and it is simply a struggle for air until they suffocate. It is horrible. One can stand it to see one, two or twenty men die, but to see these poor devils dropping like flies sort of gets on your nerves. We have been averaging about 100 deaths per day, and still keeping it up. There is no doubt in my mind that there is a new mixed infection here, but what I don't know."

Modern research has suggested that the virus may have triggered a cytokine storm in sufferers. This is a kind of immune system overreaction, a feedback loop which gets worse and worse. In a healthy young adult, with a strong immune system, the resulting overreaction is accordingly strong, and it ravages the body, whereas a weaker immune system causes a weaker reaction which is survivable.

Medical experts were asked for answers - and for a cure - and had neither. A wide range of tactics were suggested, from lying flat on your back until you were completely well again, to eating plenty of porridge and keeping the feet dry. Some recommended drinking alcohol; others recommended abstaining. In some areas, churches and schools were closed, and people were told not to gather in large numbers. Other places imposed quarantines, with varying levels of success. One American town is said to have banned handshakes. Many people fell back on old home remedies, but the disease kept spreading and kept killing.

Dedicated medical professionals put their lives literally on the line, risking infection to care for the sick. One example was New Zealand's first woman to be registered as a doctor, Margaret Cruickshank.

Born in 1873 in Palmerston on the South Island of New Zealand, in 1897 she became the second woman in the country to complete medical school, graduating after Emily Siedeberg, but preceding her in going into general practice in Waimate. During the First World War she took over the caseload of her partner, as he had enlisted and gone abroad to serve. When the influenza broke out, she worked around the clock, not only providing medical care for her patients but also cooking meals for them, caring for children whose parents were sick, and even milking the cow for one family where everybody was stricken. She worked like this until she fell ill herself, and died on the 28th November 1918 at the age of 45. A statue now stands in her honour in Waimate; it was the first in New Zealand to be erected to any woman other than Queen Victoria, and is inscribed, "The Beloved Physician - Faithful Unto Death."

In the end, it's difficult to know exactly how many people were killed in the 1918 flu epidemic. At the time the death toll was estimated at 21 million, a figure which you'll still see widely cited today, but modern studies have revised the number upwards considerably. Frank Macfarlane Burnet, a Nobel prize winner who spent most of his life studying the flu, estimated that the death

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toll was probably 50 million, perhaps even as high as 100 million, figures which were echoed by an epidemiologic study in 2002. Just to put that into perspective even more, if you adjust the numbers for global population, that would be equivalent to between 175 and 350 million people today. The current population of the USA is something over 320 million. If you're having difficulty comprehending that, I don't blame you. These numbers are beyond horrific.

By comparison, the 2009 H1N1 Flu pandemic - which was related to the Spanish flu and also impacted a younger population than average - is estimated to have killed between 151,700 and 575,400 people worldwide.

Death was not a certainty for everyone struck down with the flu, though. Many survived, although the experience might affect them forever.

Edvard Munch, the Norwegian artist most famous for his work *The Scream*, was one such. Illness had already been a subject of his many times before, with paintings such as *The Sick Child* which drew upon his childhood, losing his mother and sister to tuberculosis and suffering serious cases of fever himself as a child. He once said, "Sickness, insanity and death were the angels that surrounded my cradle and they have followed me throughout my life." Now, as an adult and a recognised artist, he was one of the millions struck with the Spanish Flu. Unlike most of the others, he immortalised his experience in oil on canvas; painting self-portraits both with and after the Spanish Flu to chronicle his own suffering.

Walt Disney was another survivor of the Spanish flu. At around the same time, the great animator had forged his own birth certificate in order to sign up for the army whilst still underage. By the time he shipped out, the armistice had been signed. Some argue that this means the flu saved Mickey Mouse from a war grave, but this is debatable.

One of the odd things about the Spanish Flu pandemic is the way that it seemingly slipped out of the public consciousness for decades. Until the bird flu and swine flu outbreaks of the 1990s and 2000s revived old memories, it was regarded as a forgotten pandemic - despite being the deadliest outbreak of disease in modern history. It was there in books, of course, if you looked for it, but it was often treated as a kind of trivia tidbit rather than general knowledge.

This seems bizarre; how could something kill so many people and then just be forgotten?

Its close connection to the war may play a large part in this. Families first lost brothers, sons, and fathers on the battlefield, and then, while the grief was still raw, the flu hit those who remained. In my own family, my great-great-grandmother lost four sons to the war, and then lost her husband to the flu. It's hard to

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imagine how you'd cope with that kind of loss, but it wasn't an unusual story.

One survivor put it simply enough; when asked why so many graves in that part of the cemetery, where two of his sons lay, lacked headstones, he said, "We wanted to forget."

An outbreak of the flu today doesn't carry quite the same risk as it did in 1918. With medical advances, we now know what causes it, and we have developed vaccinations to help people ward off the infection and antibiotics to fight it when it hits. That's not to say that it's without risk, of course. As the virus evolves, a new vaccination is required every time, and the over-prescription of antibiotics can lead to resistance, but we've also got scientists dedicated to studying the field, keeping a watchful eye on the virus and making sure that we're prepared when flu season rolls in.

Great Disasters is written, researched and produced by me, Kari Fay. For more information, sources and further reading, check out the Great Disasters blog at greatdisasterspodcast.wordpress.com, or if you'd like to start a conversation, you can find the Great Disasters Podcast on Twitter @great_disasters and on Facebook. If you'd like to support the Great Disasters Podcast, you can become a patreon and earn unique rewards at patreon.com/greatdisasters.

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