

STEM@Home: Once Upon a Time, People Died From That

In the last one hundred years, humankind's ability to prevent and treat disease has changed a lot. There were two tremendous advances in medical science that made this possible. The first was the discovery of how to harness and train the human immune system to prevent diseases through the use of vaccines. The second was the discovery of antibiotics—"miracle" drugs that made it possible to cure common bacterial infections—which have saved millions of lives. Most families have stories from their parents' or grandparents' generation of someone in their family getting very sick, or even dying, because of a disease that is now either preventable by vaccines or treatable with antibiotics. 826LA's Julius Diaz Panorinḡan shares his family's story with us here:

As a child in the early 1900s, my grandmother lived with her family in Chicago. She had an older sister named Min. One day, Min's elementary school teacher asked her to bring schoolwork over to a neighbor who was out sick from school. Min dutifully did as she was asked, and had the vivid memory of noticing, when her friend's mother opened the kitchen door, that her sick friend was sitting in the kitchen with her feet in the open oven (this part still doesn't make sense to me).

A couple of days later, the teacher realized that the sick child had diphtheria—a dangerous bacterial infection that can now be prevented by a vaccine—and that by sending Min over with the schoolwork, the teacher had put Min at risk of contracting the disease. Because the disease was so contagious and the risk of death from this disease so high, the teacher called the city public health department and reported the potential exposure. Doctors from the local hospital came out and insisted on taking Min to the hospital (my great-grandfather did not send her willingly; there is a whole story here too), even though she was not yet displaying any symptoms. Min ended up getting diphtheria and survived. The girl next door did not. That Min survived was very possibly because she was in the hospital and received early treatment.

When my great-aunt Min was a child, nearly one in five children under age five with diphtheria died, and nearly one in ten older children with diphtheria died. An antitoxin to diphtheria was first discovered in the late 1890s, but although it counteracted the diphtheria toxin, it was itself toxic, and many children died in the early days of this treatment.

Vaccines that prevent diphtheria were introduced in the 1920s and are so effective that in the four-year period from 2004 to 2008, no children in the United States were diagnosed with the disease.*

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Aunt Min told me this story herself when she was in her early nineties, and her sharing it gave me a window into a time when families did not assume that their children would survive to adulthood. Because we live in a time with both vaccines and antibiotics, few families in the United States suffer through the death of a child from these preventable infections.

Most families have a story (or many stories) similar to Great-Aunt Min's, about a family member's experience with a childhood disease that is now either preventable or treatable. Julius's family was lucky—Min survived. What about yours?

Talk with your parents and grandparents to ask them about your family's history with such childhood diseases as scarlet fever, diphtheria, measles, whooping cough, or polio. Do they know of anyone who was sickened by these diseases when they were children? What happened? Do they know anyone whose life was saved by antibiotics?

*"History of Diphtheria," <http://www.historyofvaccines.org/content/timelines/diphtheria>.