

CULTURE, EPIDEMIOLOGY, PRACTICE

A Tale of Vaccination in Two Cities

A TOWN IN OREGON AND THE CITY OF HOUSTON HAVE BOTH STRUGGLED TO IMMUNIZE THEIR CHILDREN. THAT'S WHERE THE SIMILARITIES END.

by Elaine Meyer

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When in 1955 the polio vaccine was introduced to the public, it was in such high demand that there was an immediate [shortage](#). At the time, a polio epidemic was gripping the U.S. Considered the biggest public health problem in the nation, the viral illness affected 30,000 to 50,000 children per year, spreading to towns with little warning and sometimes rendering an infected child paralyzed for life. In a show of mass solidarity that mirrored the World War II effort at home, millions of Americans contributed money to help find a vaccine. Just a few years after it became available, rates of polio had declined by 50 percent. By 1994, health authorities considered the virus eradicated from the Western Hemisphere.

To understand just how much the culture around vaccines has changed since then in certain parts of the country, one might visit Ashland, Ore., a picturesque mountain town with a well-educated population of around 20,000, an annual Shakespeare festival, a slew of vegetarian restaurants, and well-preserved historical structures. Ashland also [has earned the title of](#) "least vaccinated city in the U.S.," for

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Elaine Meyer has worked as a journalist covering education and legal news. She graduated in 2009 with an M.S. from Columbia School of Journalism and is currently the associate director of communications for Columbia's Department of Epidemiology, where she carries out the department's mission of translating public health science to the larger public. Follow her [@emeyer5](#).

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the strong stance of a sizable number of parents against vaccinating their children against diseases such as polio, measles, mumps, rubella, rotavirus, Hepatitis A and B, and influenza.

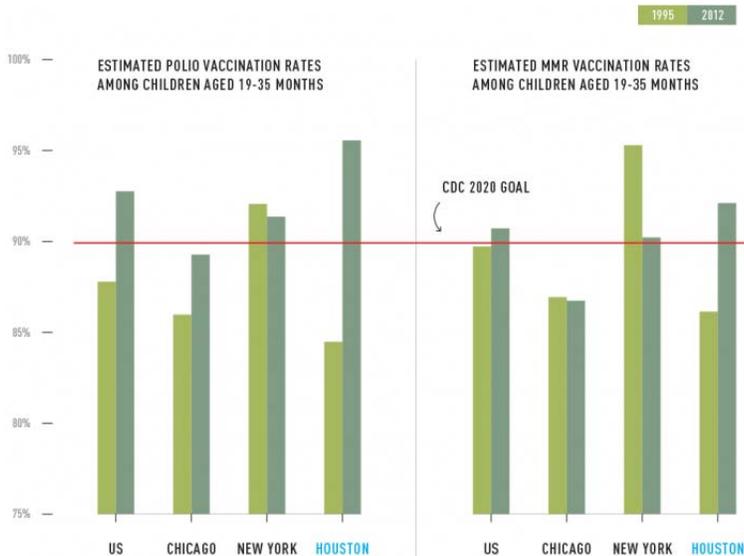
Ashland's vaccine "refusers" have drawn national attention, including a [visit](#) from the Centers for Disease Control and Prevention (CDC) in 2008 and a prominent role in a 2010 Frontline documentary called "[the Vaccine War](#)."

The town is not an anomaly. In the U.S. today, there are a growing number of places like it: middle and upper-middle class suburban enclaves with a large number of parents who refuse vaccines for their children. Epidemiologic [studies have](#) found that families who refuse to vaccinate their children are more likely to live in well-educated, higher income areas than those who do not refuse.

"Its constituents are part of what you might call the suburban counterculture — parenthood and affluence mixed with creative aspirations, a crunchy-chewy lifestyle, and an inclination to question authority," says journalist Nina Shapiro [in a 2011 article](#) in the *Seattle Weekly*.

A contrasting story has taken place in Houston where in the early 1990s the vaccination coverage rate was an

abysmal 10 percent. In 1995, even as Houston started to improve, its coverage rates for children ages 19-35 months for the polio and the measles, mumps, rubella vaccine, or MMR, lagged well behind the rest of the country and two other major cities Chicago and New York, according to an analysis by Columbia Mailman School's [Global Research Analytics for Population Health](#) (GRAPH) project using CDC data (see accompanying graph). By 2012, Houston had shot well ahead of everyone.



Yet on the whole, Houston's vaccine coverage is not drastically better than Ashland's. From 2009 to 2011 in Houston 68 percent of children ages 19 to 35 months had received all of the recommended vaccinations, while during the same period in Ashland 59 percent did.

But unlike Ashland, Houston's exemption rate is very low: for kindergartners in the 2012-13 school year it was 0.9 percent, [according to the CDC](#). In Ashland, 28 percent of the town's youth population has been exempted from at least some vaccines, according to the Oregon State Department of Health. Half of those children have not received a single vaccination, according to Rebekah Sherman, the coordinator and spokesperson for the Ashland Immunization Team.

In the U.S., all children entering elementary school are required to have a standard vaccination schedule. Parents who do not want their children vaccinated for some or all of the diseases can request a "personal belief exemption" from their school citing religious or philosophical reasons. Some states are more lenient about allowing personal belief exemptions than others.

Parents who refuse immunization for their children often argue that vaccines are full of toxins that pose health risks. One of the most predominant fears among this group is that the MMR vaccination causes autism, a theory that was put forward by British researcher Andrew Wakefield in the late 1990s and early 2000s in two studies that scientists later discovered were [flawed](#) and could not be replicated, as well as [fraudulent](#).

Vaccine skeptics often subscribe to a natural health lifestyle, believing that exposure to certain illnesses like the measles and chicken pox is better for their children than immunization. In Ashland, many parents take their children to naturopaths who do not recommend vaccinations for children under two, the age which kids are most vulnerable to preventable infectious disease, according to Sherman.

"Some of these normal viruses are part of the natural maturation of the immune system," herbalist and family physician Dr. Howard W. Morningstar [told Ashland's local paper](#), expressing a common view among vaccine refusers. "I wonder if it is wise to try to stop every mild childhood disease."

Sherman is not aware of any disease outbreak as a result of Ashland's high exemption rate, but she adds



Photo credit: Jennifer P

that the naturopaths in town do not always report if their patients have come down with a disease for which there is a vaccine.

Two thousand miles away in Houston, the picture is very different. In the fifth largest city in the U.S., medical professionals do not struggle with the unvaccinated—children in places like Ashland whose parents voluntarily exempt their kids from immunization. They struggle with the under-vaccinated—economically disadvantaged minorities who do not get all recommend vaccinations because of barriers like cost or a low-resourced health system.

Amidst a national measles outbreak, [a 1992 CDC report](#) showed that the proportion of Houston's children who were up-to-date on the recommended vaccine doses by their second birthday was a paltry 10 percent.

"It was really hurting Houston's reputation to have such low rates," says Anna Dragsbaek, president and CEO of Immunization Partnership, an organization dedicated to raising vaccine awareness.

"Texas has always been horrible, and Houston was the worst in Texas," says Kathy Barton, the chief of public affairs at Houston's Department of Health & Human Services. "When you're at the bottom of the barrel, you look at what's going on," she adds.

A prideful city, various Houston hospital systems, nonprofits, schools, clinics, and the department of health coordinated in order to raise the numbers, helped by funding from the federal government through the CDC's Vaccine for Children program.

"Houston is a pretty good community for coming together. We've demonstrated it in lots of different ways. This is one of those episodes where it happened. We all love our hometown," says Draegsbak.

She, Barton, and other people involved in the immunization effort in Houston say there were many changes. The department of health and Texas Children's Hospital started a vaccination registry to consolidate and track every child's immunization status. They focused on boosting immunization services in clinics serving low-income families. Two of the city's large hospital corporations, Texas Children's and Baylor Medicine began an ambitious education effort. Organizations like Dragsbaek's came into local clinics to help them with a "reminder-recall program" that would contact families to tell them they needed to bring their children in for immunizations.

Unlike Ashland, Houston did not have to struggle against a large and vocal population of vaccine refusers.

"[Vaccine exemption is] really not our issue. It's encouraging families to go to the locations where vaccines for children are readily available, just getting them to come in to those locations, and understanding that they don't need insurance to come in, that they can come for free," says Dr. Julie Boom, director of Texas Children's Hospital's Immunization Project. "It's sort of the same difficulties of any preventive care. It's that same demographic that struggles with getting routine pediatric care. Immunizations are obviously one of the most important pieces of that."

The "large Hispanic population and large African-American population are not typically your exempters," says Dr. Boom.

Vaccine outreach efforts in Ashland have been more difficult.

"We tried having parent meetings. People don't want to be seen talking about vaccinations. They don't want to publicly grab information. Two weeks ago at a school open house with the school nurse and had vaccination and head lice stuff out. Everyone came out and grabbed the head lice information but nobody wants the vaccine information," says Sherman.

Sherman's organization recently lost funding for a vaccine education site they were working on.

She worries that Ashland's days are numbered, that one of its residents could bring back a virus like the unvaccinated preteen children who went to Kenya last summer when that nation was gripped by a polio outbreak or the school football team which visited Japan while there was a rubella outbreak.

Outbreaks have occurred in other parts of the country with high concentrations of "[intentionally undervaccinated children](#)," including a 2008 measles outbreak and a 2010 [whooping cough outbreak](#) in San Diego; [a measles outbreak this year in a town near Fort Worth, Texas](#), linked to an evangelical church; [and another measles outbreak, this one in an Orthodox Jewish](#) community in Brooklyn, New York. If one child gets sick, scientists say that outbreaks are preventable if most children around that kid are vaccinated—because the disease is not likely to spread. This is known as [herd immunity](#). However, when a critical number of people are not vaccinated against the illness, herd immunity goes down, and populations are much more vulnerable.



Photo credit: Sanofi-Pasteur

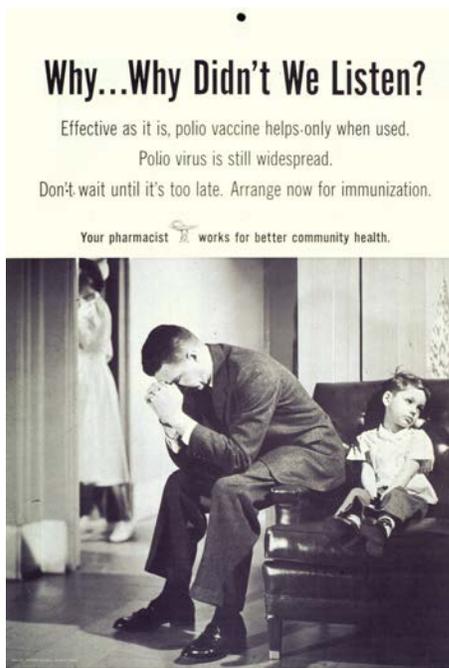


Photo credit: National Institutes of Health

The

principle behind herd immunity mirrors liberal ideals about government: that individuals should sacrifice for the greater good, that we have a responsibility not just to ourselves and our immediate families but to our communities.

Ironically, the liberal refuser parents of Ashland and similar communities can sound like conservatives and libertarians when defending themselves.

"It's my responsibility as a parent to keep my child safe, I think, and I don't think it's your responsibility to take a vaccine because I might be at the same party with you and you might cough on her. Honestly, I think your job is to protect your own health," says Jennifer Margulis, an Ashland parent [featured in the "Vaccine Wars."](#)

Sherman acknowledges the irony: "These are educated people. If you were to question any of these people about the science behind climate change, they would look at you like you were crazy."

They think "because we wash our hands, because we eat organic foods, because all our friends' children are happy, because they go to these Waldorf schools that are really environmentally conscious, that they're protected. They have the sense that I can control every encounter my child has. They don't think about the fact that kids are leaving Ashland going to places with outbreaks and coming back," says Sherman.

Ironically the success of campaigns for polio and other nearly eradicated diseases has paved the way for the anti-vaccine movement of today.

"The period of time during which disease prevalence remains low enough to escape public notice corresponds to a spike of vaccine refusal as vaccine-preventable diseases fall out of public notice and post-vaccine adverse events gain more attention," according to [an article](#) from June in the journal *Biological Sciences* by Drs. Diane Saint-Victor and Saad B. Omer at the Rollins School of Public Health at Emory University.

In Ashland, Sherman says that people she knows who are fully vaccinated "all know somebody that had polio or meningitis or pertussis and had some life-altering event because of those diseases."

This is true for Lorie Anderson, a mother in Ashland who has vaccinated her own children and who runs a blog called [Thinking it Out](#), which covers the immunization controversy in Ashland from a pro-vaccination perspective.

Says Anderson: "I guess if you go back into my personal history, I did have a grandmother who died early because of her polio injuries. And I remember seeing images of iron lungs and just being terrified, and I remember being terrified of getting my first shot and meeting people in school who were refusing the first shot. But I also remember thinking 'I'm a pioneer doing this.'"

Edited by Barbara Aaron.

Feature photo and graph credit: Jon Kalish

ONE RESPONSE TO "A TALE OF VACCINATION IN TWO CITIES"



DECEMBER 16, 2013 AT 7:30 PM, [LORIE ANDERSON](#) SAID:

I'm flattered to have been included in this article. I linked and posted about it on my blog. Thanks!

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