S2E11 Transcript

What is the history of anti-vaccination beliefs?

Ask a Historian

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[Intro music]

Emily Tran: From the University of Wisconsin-Madison, this is Ask a Historian. I'm Emily Tran. Today on the show: what is the history of anti-vaccination beliefs? I'll talk to Professor Sue Lederer and Professor Judy Houck about the history of vaccine hesitancy in the United States and how vaccine skepticism has influenced the way we fight disease.

As we'll learn, vaccine hesitancy and resistance have a long history. As long as we've had vaccinations, we've had vaccination skeptics and refusers. Sue and Judy explained that the vaccine hesitancy movement has always been diverse and heterogeneous, and they talk about how compulsory vaccinations have long raised issues concerning the state's authority over individuals' bodies.

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The question guiding today's episode was submitted by our listener Jill, who asks, "what's the history of anti-vaccination beliefs and how have they affected the way we fight disease and epidemics?" To answer Jill's question, I spoke to Professor Sue Lederer and Professor Judy Houck. We recorded this conversation on April 20th.

Sue Lederer: My name is Sue Lederer. I am the Chair of the Department of Medical History and Bioethics in the School of Medicine and Public Health and a member of the History Department. And I'm a historian of American medicine and public health, mostly in the late 19th and 20th century with a particular interest in the history of research involving humans and animals.

Judy Houck: Hi, my name is Judy Houck and I'm a historian of women's health in the United States. I presently focus on 20th-century women's health.

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Emily Tran: Sue and Judy, welcome to Ask a Historian. And thank you for talking with me today to discuss this question that Jill has sent in. So for as long as we've had vaccines, we've had vaccination skeptics and vaccination refusers. But before we talk about the skeptics, can you say something about the development of vaccines in this country?

Sue Lederer: I'd like to take a start, although I'm going to change the question a little bit and talk about sort of the first vaccine and vaccination, which was actually developed in England in 1796 and Edward Jenner, that English physician, is the one who coined the word "vaccine" because he was using cowpox to try to prevent smallpox in human beings.

The idea that you could gain immunity from a disease by using infectious matter has a longer history, and there have been skeptics as early as that – going back in what were the American colonies to 1721, when there was a terrible outbreak of smallpox in Boston. And a local minister – a very influential minister, Cotton Mather, had learned about the technique of actually giving somebody smallpox pus in order to prevent a worse case of smallpox, a process called "variolation."

He also learned about this practice from an enslaved man who had been gifted to Mather by his congregation. And he persuaded a local physician to try this great experiment of actually spreading smallpox to people in the interest of preventing a worse epidemic.

Judy Houck: So this example about smallpox variolization in Boston raises so many interesting questions that I think we're still wrestling with. So as Sue suggested, one of the most important boosters of variolization was a minister, right? Was a *minister*. And he tried to recruit physicians to participate in this experiment and by and large - by and large, they didn't *want* to, right? And in fact, there was a group of physicians dead set against this. They thought it was completely reckless for a minister to be recommending to people in Boston that they inject this pus or, you know, rub this pus onto their scarified skin, right? So this raises all sorts of interesting questions about who should be making these decisions for a community and when physicians are resistant - and you can just imagine why they would be resistant in this case; it actually gave people smallpox – who has the authority to say, yes, you can do this, or no, you can't do this.

Emily Tran: So in addition to these physicians who are resistant to this idea posed by Cotton Mather, a minister, what were some of the other objections to vaccines in these early years?

Sue Lederer: Well, I think there were a number of objections. One of the most important was the idea that it was natural to avoid disease. It was completely unnatural to *give* yourself a disease, to prevent yourself from developing a worse disease. Some people thought, despite the support of Cotton Mather, that it was against God's will to actually give a person...to deliberately infect somebody with a horrendous disease. I mean, it was God's place, God's Providence, to send disease on to sinners. It was usurping God's place by actually spreading the disease.

I think there was also resistance because it was an unproven, and as Judy said, a completely reckless undertaking. There's good reason to think that it actually spread smallpox in the community and it threatened the neighbors, if not the people who were undergoing the procedure of variolation. So I think that there were...there were good grounds, I think, to be resistant to this innovation in dread disease.

Judy Houck: Absolutely. And I would just point out also that this sets the stage also for concerns about compulsion. Most of the people who went to Boylston and said, "I'll do this" were volunteers, but physicians variolated their children; Boylston used the variolization on his son.

These folks also variolated enslaved people in the community. So the stage is set for parents making decisions for their children, people who didn't have the ability to say no, to be forcibly – in some ways – treated.

Sue Lederer: And I would add Native Americans were also variolated by Boylston and it's clear that they didn't have a choice in the manner.

And again, it was, it was very risky. You could die from the effort to produce protection against smallpox. So there was a lot at stake.

Emily Tran: Today, people who oppose vaccination altogether, and those who refuse to submit their bodies or their children's bodies to a particular vaccination, these two groups are often lumped together and discussed as "anti-vaxxers." Is that a useful way for us to understand vaccination hesitancy?

Judy Houck: The term "anti-vaxxer" – it's a dismissive term, it's a derisive term. It's meant to suggest people who are misguided – they're spreading misinformation. At least that's what I hear when I hear people being called "anti-vaxxers." It's a dismissive term. And yet both historically and in our current

moment, I think it's useful for us to think about people who are saying yes to one vaccine and saying no to another – that some of these folks who get dismissed as anti-vaxxers are doing what they consider research. They are reading about these different vaccines and they're making decisions. So I just think it's useful to be more respectful, to try to understand why people resist or hesitate around vaccination and to try to understand what their concerns are, right? Because those folks who are interested in recruiting people to vaccination need to understand people's reservations.

Sue Lederer: I agree completely with what Judy just said. I think that – in the 19th century, they didn't call them "anti-vaxxers" but they called them "anti-vaccinationists." It was a rhetorical strategy to place them in a category of the irrational, the superstitious, the ignorant, and the uninformed. And lumping, you know, served the interests of the medical profession. And, as I think we've both tried to suggest, is that there might have been valid reasons, a different understanding of risk, you know, a resistance to compulsion that made people skeptical about some of the claims that members of the medical profession and the public health establishment made about just how fabulous these vaccines were. And I think even today, you know, sometimes – this is my own understanding – sometimes in order to get people to do things, public health authorities may oversell or may overemphasize the benefit without recognizing and making transparent that there are some downsides, there are some risks associated. But the important point is that there's a risk-benefit calculation, and we think that vaccination is going to be a much better strategy for both individuals and the community.

Judy Houck: Sometimes we talk about vaccination and the diseases we are vaccinating against as all the same, but I would certainly argue that the risk of smallpox, the risk of polio, the risk of diptheria are quite different than the risk of measles maybe, or pertussis or mumps, right. And so some folks might have been quite enthusiastic about submitting to the polio vaccine and very resistant – or at least hesitant – to submit to an influenza vaccine or mumps. Right? So again, seeing vaccines as separate things rather than just one social good, right?

And, those distinctions are important when we think about risks. Because as we're seeing now with the Johnson and Johnson vaccine, these vaccinations are not risk-free. They're very safe, but it seems like they're not risk-free – at least maybe likely not. And so what are we preventing and how do we understand the risks of that? It's all part of the calculus.

Emily Tran: So in the 20th century, particularly in the late 20th century, the number of vaccines available, the number of different vaccines available, has really proliferated. And medical and public health experts, they overwhelmingly insist that these vaccines they're safe and they're valuable for the public's health.

But at the same time, the anti-vaccination movement seems to have only grown. Where has the anti-vaccination impulse of the last 50 years or so come from?

Judy Houck: Well, one, I think the shift comes from the very proliferation of vaccinations that, at the second half of the 20th century, sort of the last third of the 20th century into the 21st century, the number of vaccines has risen steeply. And so, when we're thinking about vaccinating children, then the number of vaccinations that are recommended has given people pause. So there's that, it's just the sheer numbers of vaccines that are available. And then what I was talking about earlier that there seems to be a shift from vaccinations for major diseases to at least arguably less dangerous diseases. And I'm not saying that measles is without any risk, but it's not smallpox. And so this changes people's reactions to the request or the recommendation that they submit to these vaccinations. So that's, that's part of it, I think. And then there's also social movements afoot that help provide some context in the 1970s about the increased resistance – for example, a more generalized distrust of what became called in, the 1970s, the "medical industrial complex," right? This idea that medicine was something always to be trusted, always had

altruistic motives, right? A fuller picture of medicine, a more skeptical view of medicine, developed in the 1970s, a more broader distrust of technology in general emerged in the 1970s, and with it came what we call a sort of "back to the land movement" and effort to live off the grid – before we talked about it, like get "living off the grid," a quest for us, simpler less technologically burdened life emerged. There was also changing movements within the cultural understandings of motherhood that influenced this pushback, I think, to vaccines. So in the 1970s there arises something we call "natural motherhood" – this idea that mothers should be less dependent upon science and medical expertise for their child rearing decisions and that they should trust their instincts more and, again, be less dependent upon technology and science.

And so this also led to a push against the vaccines that were seen as technological, as not natural. So those are, those are some of the reasons why there becomes some pushback against vaccinations at the very same time that, actually, there's a proliferation of the number of vaccines and an increased use of compulsion, right? This is in the 1960s and 1970s. We really see an increase in vaccine compulsion requiring, in particular, school children to be vaccinated in order to go to school. So that sort of resistance comes in the wake of increasing compulsion.

Sue Lederer: I think this is also important to understand: that being resistant to vaccination could make for kind of strange fellow travelers, because, just as there's a movement of skepticism about the medical industrial complex and distrust of elites, you also have within some Christian fundamentalist groups a revulsion toward the decriminalization of abortion and the concern about scientific use of fetal cells and how fetal cells are being used to create vaccine lines. And so these are people who occupy very different parts of an ideological spectrum, but they find themselves united in a resistance to, again, this massive proliferation in the number of vaccines that are available, recommended and required for entry into the public schools. And so you have, for example, a, you know, a preference for getting chickenpox naturally, you know, if your child gets chickenpox, you invite the friends over because it's better to get chickenpox that way than through, you know, one of these injections that comes from material that is tainted by other associations.

Emily Tran: When I've seen in the news or podcasts discussions of the anti-vaccination movement, a lot of journalists will start the story in, I think it's the late 1990s – that article that is published in a British medical journal, later retracted, connecting vaccines to autism. Would you say that that article builds on decades of growing skepticism of vaccines that had started as you've just explained in the 1970s?

Sue Lederer: I think absolutely. The article was by a British physician who's since, I think, has been delicensed – Andrew Wakefield – published it an extraordinarily influential British medical journal, *The Lancet.* And it collides with another great fear of the 1990s that it's associated with autism with the addition of a particular preservative to the measles-mumps-rubella vaccine. And I think a lot of commentators have seen this as an important spur to the growth of anti-vaccination, and the availability of something like the internet to reach broadly dispersed populations, mothers, celebrities, others who remain critical or skeptical about the medical establishment.

Emily Tran: I want to take us now back to something that Judy said in her last response about compulsory vaccination. So these days there's a lot of talk about compulsory health measures in the context of COVID-19 for instance, mandatory mask measures, prohibitions against private and public gatherings, which we've all experienced over the past year. And now colleges and workplaces – they're considering mandatory COVID vaccinations are compulsory vaccinations, new?

Judy Houck: Well, the short answer is of course, no. So let me just provide one example. So before we had vaccination and we're still talking about smallpox variolization: George Washington, Revolutionary War, there was a smallpox epidemic during the Revolutionary War. And George Washington decided that

the only way he could deal with this or the best way to protect his troops against smallpox was to compel them, to force them, to undergo a smallpox variolization, which is again, giving them mild cases of smallpox. So this is not the first case of compulsory vaccination, but we can see that the roots of this are very deep.

This happens early and often, particularly with smallpox because smallpox is deadly, it's highly contagious, and even when it doesn't kill, it's often disfiguring. So the horror of smallpox was really great on many levels. And so smallpox provides the occasion for many of these initial uses of compulsion. And in the United States, we had spikes of very localized smallpox epidemics, particularly in the late 19th and early 20th century – sort of 1898 to 1903 or so. We had lots of very local smallpox epidemics, and these are places and moments when compulsory vaccination really emerged as fairly common on the local level. Local health boards put in place compulsory vaccination and so when local authorities use this tactic to keep the public safe, people resisted that. So as long as we've had vaccination compulsion, we've also had vaccination resistance.

Emily Tran: And have there been legal cases, challenging the state's ability to require compulsory vaccination?

Judy Houck: Hundreds!

Sue Lederer: Yes. And I think one of the earliest and perhaps most influential public health legal decisions occurs in one of these localized outbreaks that Judy was describing when there's a smallpox outbreak in Boston. And the civil health authorities require everyone to get vaccinated to stem the spread of the disease. A local minister named Henning Jacobson refuses to be vaccinated; he refuses to pay his fine. He takes his case to the local authorities, to the state authorities and in 1905, it makes it to the Supreme Court of the United States, in which the justices rule that in the interests of public health, it is legitimate to require people to undergo vaccination in the interests of the greater public health. That, as I say, is a very influential Supreme Court precedent. It's actually used in the 1920s to support the involuntary sexual sterilization of people deemed genetically questionable – the decision of Buck v. Bell – and it has never been overturned by the Supreme Court. So remains something to reckon with.

Judy Houck: Absolutely. It's important because it validates the power of the state to compel vaccination. But what's also important about this case is that it established some lines that the state couldn't cross, which I think is important here. And so, for example, the Court would not allow forcible vaccination, so Henning Jacobson could be forced to pay a fine or be imprisoned if he refused to pay a fine, but the state could not tie him down and inject him with the vaccination. It's an important qualification here. The state could not compel vaccination just anytime, right - that there had to be a pressing health concern at the time. So the state only had this power when there was a present danger. So in epidemic times, for example.

Sue Lederer: At the same time, that was not a right that was given to members of the armed forces. Because if you were a soldier, you could be forcibly compelled to undergo vaccination for smallpox, for typhoid. You could be ordered to undergo surgical intervention. For example, if you were a typhoid carrier at a time when having your gallbladder removed was a serious or a risky operation. So the state does begin to have serious health policing powers and people, I think, you know, had genuine cause for concern about just how far those would extend.

Judy Houck: Sue, I had no idea about that. I mean, it makes perfect sense, right? That in the military, these things are allowed, but I hadn't, I hadn't thought through that, but certainly we see the beginning of this with George Washington. It's very interesting.

Sue Lederer: Right. And I think, you know, even in things like Desert Storm, there was a requirement that the enlisted personnel take an experimental vaccine, one that hadn't even been authorized by the FDA. And they really had no right of refusal as members of the armed services, where refusing it would make you eligible for being thrown out of the military or being incarcerated.

Emily Tran: So what are some of the concerns that animate the current resistance to the COVID-19 vaccine?

Sue Lederer: Well again, I think what we would like to emphasize – or I would like to emphasize – is that vaccine resistance is diverse. There's not just one reason that people might be resistant or skeptical about vaccines, so that there are many different reasons that people may hold on to that may take the form of skepticism or hesitancy.

Judy Houck: Yeah. I have to say when all this was coming a year ago, I thought that there was no way a vaccine could be ready for COVID-19 as quickly as it was. And I think the speed of this vaccine is unprecedented. I don't know if Sue backs me up on that, but as far as I know, this is unprecedented.

Sue Lederer: Absolutely!

Judy Houck: And so before it happened, I knew it couldn't happen this fast and that if it did, I would be nervous about that, right? {laughs} I would be nervous about that. I am completely over that at this point, but just, you know, I think about vaccines a lot, and yet there was something about this one that just, when it was still imaginary, I thought, I wonder if I'll be at the front of the line? And in the end there I was, or I hope to be.

Sue Lederer: I'm really happy that you said that because I had exactly the same response. There wasn't any way possible for there to be one vaccine, let alone three or four that were exceptionally efficacious against COVID-19 in 2020. I just, I couldn't believe it. And I would remind people, we still don't have an effective vaccine against HIV and people were working on it, you know, since the 1980s.

And I, I think calling it "Operation Warp Speed" only intensified my nervousness about what they were going to do to get to warp speed: cut corners, make bad choices, get unlucky, I don't know what. So I have been completely proven wrong and I was happy to get my vaccine when it was offered. And again, you know, let alone that they were 94, 95, 96% effective, I think it's extraordinary.

Judy Houck: Completely extraordinary! In contrast, the flu vaccine every year is something between 40 and 60% efficacious. So that this came so fast and it seems to be so good – and it seems to be overwhelmingly if not totally safe, it's stunning.

Sue Lederer: You know, I think compulsion was on people's mind even before we had an effective vaccine or several vaccines. Wondering if they were going to be faced with the opportunity to say no to this. And again, I mean, I was taking the position where we're not going to have a vaccine, so this is something we really don't need to worry about. {laughs} And I was wrong about that. And I, I think I also underestimated the extent of resistance to things that seemed, I don't know, useful, like masking, or not congregating in crowded places, or taking a test before you fly or, you know, various things like that. So, I mean, I think there was a lot of resistance on the part of the general population to the idea that the state was going to enforce health ways in unprecedented ways.

Judy Houck: Yeah. As a country, people have reacted a variety of ways in terms of being told what to do, right? There's general consensus about certain crimes, right? You can't steal, you can't kill. But there are all sorts of laws that are about telling people what they can and can't do. They can't drink. They can't

buy liquor on Sundays. They can't go to a dance hall on Sundays. They have to wear seat belts. They must wear helmets. They can't smoke in a public building. And these laws – and there are just so many of them – they always create resistance and resentment. And we, at the particular moment when COVID came, the time was ripe, I think, for people to resis being told what to do, particularly with their bodies.

So I think this anti-vaccination moment is just part of this diffuse resistance to being told – particularly being told by Democratic governments – what they should do. So this idea that individual rights are being infringed upon by mask measures. And so that, that generalized resistance to things that were seen as compulsory has bled over, it seems to me, to create resistance to things that are not compulsory.

Sue Lederer: I agree completely. And you know, the idea that selective closing of restaurants and bars and churches, but not other things. I, I think that it's, it's a classic tension in the history of public health. Just how far are we willing to go or able to go to preserve individual rights and at the same time protect the health of the population?

Judy Houck: Yeah, I think that is the question or, you know, one of the most essential questions of public health and there's in terms of vaccines more generally. People, particularly mothers in the 1970s, 1980s also ask in the same kind of vein: must I put my child at risk in order to help protect the community at large? Right? So, what can the state demand of, individuals in their attempt to protect the public? And also do we put individuals at risk to protect the health of a community?

Sue Lederer: This wasn't just academic. We know that in the case of the polio vaccine, there was a certain number of known cases of polio would develop. And, now, it was small, but some people would be against assuming any kind of risk. And one of the ways that Congress solved that was to pass legislation that compensated people who were injured by required vaccinations. And this was a compromise, but at least it decreased litigation of individuals against pharmaceutical companies. And again, it was trying to promote, on a society level, the general health of the population by ensuring one that vaccines would continue to be produced, but that individuals whose lives were materially altered by paralysis for the rest of their lives or at a loss of, uh, being able to walk or even death as a result of the vaccine. And compromises are often, you know, unpopular with everybody, which I think is another sort of lesson.

Emily Tran: Can you help us understand why COVID-19 vaccines have an especially low rate of uptake in some communities of color?

Sue Lederer: Certainly. Um, I think the thing that really sticks out in a huge way to me is the historical record. There are excellent reasons for a legacy of mistrust on the part of communities of color, because of the ways in which they have been treated in the past in times of epidemics or in non-epidemic times that they have been treated with less respect, with fewer resources, less access to medical care. And it's completely understandable to me why you might be leery of having the chance to be the first with a new vaccine like COVID-19, because too often in the past, you were the guinea pig for a trial of a new vaccine before you administered it to the people who mattered. So I think for me, that really is one of the most compelling reasons in my estimation.

Judy Houck: Absolutely. I couldn't agree with you more, Sue. And it's also important, I think, to be aware that this resistance is not inevitable. So for example, on the Navajo Nation, who as a community, was particularly hard hit by COVID, as are communities of color across the country. But the Navajo Nation was especially hard hit by COVID. Rates of uptake of the vaccine last month, were at something like 26% on the Navajo reservation, which is higher than the national average, it's much higher than some of the states in the Southwest. Utah, for example, was at 12% at the same time. And so this resistance is not inevitable, but this resistance is broken through...through conversation, through people going building

relationships, acknowledging distrust, and hearing about communities' concerns. And on the reservation, the idea that people were getting a vaccine in order to help keep their community safe was one of the reasons why the uptake was so strong. That they, they saw their community as being devastated by COVID and they wanted to be part of the solution to this, to this terrible disease.

Sue Lederer: I think many public health authorities would be celebrating the interest in benefiting others because we need, you know, we need to develop herd immunity for our society to flourish in this COVID world.

Judy Houck: Indeed, we do.

Emily Tran: Thank you, Judy and Sue, so much for being on the podcast and talking to me; this was a really fascinating conversation. So thank you so much.

[Music begins]

Judy Houck: Thanks so much, Emily.

Sue Lederer: Thank you, Emily.

Emily Tran: This episode is the final one of the season. And as we work on Season Three, we're looking for questions about the past to bring to the UW-Madison historians. You can send your question for Ask a Historian to outreach@history.wisc.edu. Today's episode of Ask a Historian was produced and edited by me, Emily Tran. Special thanks to Christina Matta. Major funding for Ask a Historian comes from the Department of History Board of Visitors at the University of Wisconsin-Madison. Thanks especially to Jon Leibowitz, Peter Hamburger, and Rick Kalson. Thank you for listening, and take care.