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POLICY DIALOGUE

School Vaccination: Past, Present, Future

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Abstract
The arrival of COVID-19 in the US during the spring of 2020 cast a spotlight on the issue of vaccinations and their efficacy. School closures and school vaccination policies were among the most contentious arenas of debate as parents, teachers, and policymakers wrestled with how best to respond to the pandemic. Disease in school is not a new topic—our nation has previously faced outbreaks of influenza, polio, measles, and more. A look at the past can teach us much about how to understand the passionate, and sometimes partisan, views about school vaccination. Outside of schools, the anti-vax movement has enjoyed greater visibility and support even as public health officials emphasize the importance of herd immunity and broad vaccinations. The confirmation of Robert F. Kennedy Jr. as Health and Human Services secretary in February of this year makes it likely that the issues of school vaccination and immunization policy will continue to be vigorously debated.

For this policy dialogue, the *HEQ* editors asked Kim Tolley and Dorit Reiss to discuss the history of school vaccination and its impact upon society. Kim Tolley is Professor Emerita in the School of Education at Notre Dame de Namur University and served as president of the History of Education Society in 2018. She is the author of *The Science Education of American Girls: A Historical Perspective* (2003) and served as coeditor (with Nancy Beadie) of *Chartered Schools: Two Hundred Years of Independent Academies in the United States, 1727-1925* (2002). Her most recent book, *Vaccine Wars: The Two-Hundred-Year Fight for School Vaccinations* (2023), won the History of Education Society's Outstanding Book Award in 2024. Dorit Reiss is Professor of Law at the University of California San Francisco, College of Law, where she teaches torts, public health law, and administrative law. Her current research focuses on legal and policy issues related to vaccines, including the anti-vaccine movement and vaccine mandates. She has published extensively in recent years on school mandates and those who oppose them, as well as on the issues of childhood immunization, quarantines, religious exemptions, and COVID policy.

HEQ policy dialogues are, by design, intended to promote an informal, free exchange of ideas between scholars. The transcript of this dialogue has been lightly edited for clarity and consistency.

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Kim Tolley: Hi, Dorit, it is great to meet you! I enjoyed reading some of your papers, learned a great deal, and saw you were very involved in that seminal moment in California when the legislation passed to eliminate exemptions. I'm curious. I'd love to know how you got interested in the topic of vaccination.

Dorit Reiss: First of all, Kim, it's wonderful to meet you. I've looked at some of your work too, and I appreciate this question. I got into vaccines as a parent on social media. My dissertation was about agency accountability in telecommunication and electricity. Then I had my son, who's now fourteen, and I started reading about parenting, and I came across an anti-vaccine comment and it surprised me. I never thought there was an anti-vaccine movement, so I started reading about it, and one of my former students recommended the *Panic Virus* book, which I expect you're familiar with. I read it, and my take-home was that pro-vaccine parents should speak up more. So I went online and started commenting, and then I met one of my colleagues who specializes in health law, and he said, "You know, I teach vaccines routinely. Why don't we do a panel?" And then I started to move into a more professional direction on this topic. Since, I think it was about 2014, all of my writing has been about vaccine issues. How about you? How did you get into this?

Kim Tolley: I was vaccinated against polio during the Salk vaccine rollout, and I had a classmate who was struck with polio and lost the use of a leg. So I always remember that era, and the fear, and just how grateful all of us kids were to get the shot when it became available. So for me, it was more recent. In 2015, when you were in the midst of battles in California over the elimination of non-medical exemptions to school vaccination, I was reading all these irate letters to the editor of the *San Jose Mercury News*. Some people were furious that the state would take such a strong pro-vaccine stance. And I just wanted to understand the anti-vaccine arguments. So I got on Google, and pretty soon Google's algorithm decided I was an anti-vaccinationist. So, I landed on all these anti-vaccine websites, where I noticed that they were pushing books that had been published in the late nineteenth century, but that had been repackaged with bright, colorful colors. These books were using statistics that were 150 years old, that would no longer be considered valid today, and it seemed like such an interesting, long-lived shelf life for what is now misinformation. I study the history of education, and so here was a topic that was definitely related to education; and the more that I looked, I couldn't find that any other historians had written specifically about school vaccination or the history of the policies, especially the struggles over school vaccination. So that's how I got started.

Dorit Reiss: Wow. I really need to read your work, because one of the things I always tell students is many of the struggles around vaccines really focused on mandates. School mandates have been an area of contention, at least since the nineteenth century. I suspect you're going to tell me that I'm probably missing some things.

Kim Tolley: No. School mandates of all kinds, such as school mandates to require readings in the Bible, for example, have long been a flashpoint for lawsuits that parents bring. Parents have a great deal invested in their children. They care about their children. They have fears around vaccines in both directions. Fear has driven the arguments and actions on both sides. Those hesitant to vaccinate their kids distrust the safety and effectiveness of vaccines. They often argue on the basis of risk and freedom, claiming that they should have the freedom to refuse vaccines because of the risk of rare

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side effects. On the other hand, those who support vaccination fear that their children may come down with some horrible contagion in school. Supporters often argue that all children have a right to safety in their schools, including the right to be safe from contagious disease. The mandates drive controversy and always have to some extent. That was one of the first questions in my research. What have been, and continue to be, the critical points of controversy?

Dorit Reiss: Yes! As you pointed out, parents are really invested. One of the things I've seen in all the battles over mandates is that they bring in parents that normally would just not vaccinate and go on their way. But the moment a mandate is threatened, they feel they have to act, so it draws them more into activism and more into the anti-vaccine movement. Right? I agree with you that mandates are a big thing. Safety concerns are always important, as you highlighted. Parents are concerned both ways. Part of the issue is that vaccine science is really complicated. And like most sciences, it can be messy, and it's nuanced. It's complex. And most of us just don't have the background to assess either the data or the vaccine itself.

Kim Tolley: Yes, and many don't fully understand the controversies, either. For example, take the doubts over the diphtheria, pertussis, and tetanus (DPT) vaccine in the '70s. As part of the "messy" process of the scientific method, a 1973 study by John Wilson, a British neurologist, raised questions about the relation between autism and the DPT vaccine. When first the question was raised, it was a legitimate scientific question that required more research, and as always happens, that research took a lot of time. Over the next several decades, large-scale studies found no correlation between the vaccine and autism, but the idea of some sort of connection continued to circulate. In 1998, Andrew Wakefield published a study claiming a link between autism and the measles, mumps, and rubella (MMR) vaccine. Wakefield's study was later found to be fraudulent.[1] But at the time, it was highly influential. Over the years, study after study conducted on thousands of individuals in Europe and in the US and in Canada have shown no link whatsoever between autism and vaccines. And yet the initial narrative still lives on. And now that we have the internet, those long-ago TV shows, books, and blogs that came out in the 70's and later—they're *still* out there, pushing a false narrative. It's become an ongoing source of misinformation that worried parents may encounter and then believe.

Dorit Reiss: I think you're exactly right. Part of what really surprises me is the pushback I always get from anti-vaccine people. They say, "You just don't want us to ask questions." But as you're highlighting, it's not about asking questions. It's legitimate and it's correct to ask questions, and things will come up that we're not sure about, as you're pointing out. If you're going to give a vaccine to your child, you should be asking a lot of questions. As you're saying, the problem with anti-vaccine misinformation is that it keeps repeating even after the question has been answered the other way. As

[1] Clare Dyer, "Lancet retracts MMR paper after GMC finds Andrew Wakefield guilty of dishonesty," *BMJ* 340 (Feb. 6, 2000), 281; Richard Horton, "A Statement by the Editors of *The Lancet*," *The Lancet* 363, no. 9411 (Mar. 6, 2004), https://doi.org/10.1016/S0140-6736(04)15699-7; Fiona Godlee, Jane Smith, Harvey Marcovitch,"Wakefield's Article Linking MMR Vaccine and Autism was Fraudulent," *The BMJ* 342 (March 15, 2011), https://doi.org/10.1136/bmj.d1678.

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you probably know, there's a spectrum of vaccine attitudes, from very confident to very rejecting of vaccines, and a lot of parents aren't on one of the extremes.

Kim Tolley: That is true.

Dorit Reiss: One of the questions that often comes up is this: Who is "anti-vaccine"? Because those are the people that probably create the misinformation that misleads others. Not always. But, as you're saying, it's not asking the questions that makes someone anti-vaccine. And it's not the question that even creates the controversy. It's when someone insists on rejecting the valid answers. I generally think that "anti-vaccine" is someone who has four features. One, they think vaccines are more dangerous than the data shows. Two, they think that vaccines are less necessary than the data shows; they downplay the risk of the diseases or the effectiveness of vaccine. Three, they justify rejecting science with conspiracy theory. And fourth, they think there are alternatives to established vaccines. So one of the things we haven't touched on yet is the link between the anti-vaccine movement and alternatives to medicine.

Kim Tolley: Right! That goes way, way back to the nineteenth century as well. Both medical belief and religious belief can have the same kind of fervor. There are people committed to alternative forms of medicine, who believe that scientific medicine is not the proper way. In the nineteenth century, the people who became leaders of the anti-vaccination movement often had that kind of deep commitment.

In my own research, what I saw is that once a person was leading an anti-vaccination movement, that person was never going to change their mind, because the anti-vaccine activism became part of their identity, part of their role. In their view, "This is who I am. This is what I do." And their role formed a critical part of their social network and their community. And this is not to judge such people as "bad," but to simply acknowledge that it's almost impossible to break out of that identity. And then economics also factors in. Once a group is an anti-vaccine organization with a large group of followers, it may have corporate sponsors. As happened in the past, some of the groups that are operating today have corporate sponsors in the alternative medicine field. And so there can be a money aspect to this, too, where there's some financial gain for gathering adherents.

Dorit Reiss: I agree with you: one of the issues is that being anti-vax or believing in alternate medicine becomes part of your identity. As you note, it's also your social network, and there can be a financial interest. This is something we've been discussing that we refer to in the online discussions as "audience capture." Once you've billed yourself as having an audience of people who are looking for anti-vaccine content, these presenters, even if they say something more moderate, get bad feedback from their audience. Thus, at some point, wanting to give your audience what they want also becomes a goal.

Kim Tolley: Yeah. And yet things are never set in stone. Sometimes when I talk to people, we'll have a conversation like this, and they'll ask, "So do you think it's hopeless?" My answer is no, I don't, because of what happened in California and other states. Let me tell you about Marin County, which was one of the most staunchly anti-vaccine counties in California back in 2013. After a series of pertussis and measles outbreaks, the "Vaccinate California" movement took off, a movement led by parents. They reframed the issue around the need to ensure safety in the schools, and they highlighted the importance of protecting students who, for medical reasons, can't be vaccinated. Their argument was that we each have a social responsibility to be vaccinated. Once that argument took off, it was amazing. Some of the public health officials

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were shocked at how quickly people just started lining up outside the local pharmacy stores to get vaccines. And years later, during the COVID rollout, I was shocked to see that the most vaccinated county in California was Marin County. I had friends in that area who were just vehemently, not ever going to get a shot. It was part of their back-to-nature, naturalist, organic lifestyle—but they were able to reconsider their position on vaccines.

Dorit Reiss: I also think you're right that people do change. It comes kind of in waves; for example, anti-vaccine activism had somewhat of a peak in the late 1990s, and the early 2000s, followed by a decline in the later part of 2005 to 2010. I think you're right. People do change. Parties changed in response to external circumstances. If a really aggressive virus comes into the community, people react.

Kim Tolley: Oh, parents will change in a minute, in a heartbeat, just like, "How scary is this! What is this? What can I do to keep my child safe?"

Dorit Reiss: Exactly, that's why one of my concerns right now is connecting vaccines to a political view. I think that's really, really dangerous, because our political identity is a really important part of our identity. And rightly so. And when our political, trusted sources of information take a position, we want to believe them. We hopefully won't blindly accept everything they say, but we want to believe our trusted sources. So it's an effort. I'm really worried about the increasing link between vaccine misinformation and political identity. I don't have good answers to that. One answer is, we need to work with people across the political board, and get the trusted messengers for each community that can address their communities' questions. We need to stop thinking that we academics, or even political leaders, etcetera, can say things and have them accepted. We need to work with people on the ground and remember that a lot of public health is local. I'm not saying there aren't answers, but I am a little worried that, right now, we're at the point that, if we're talking about the rise and fall, peaks and valleys, we're at the point where it's going to take time.

Kim Tolley: It will take time. And right now, the political climate is shifting quite quickly. AJ [Angulo] had asked us to discuss this question: "How do schools, children, compulsory education as well as universities, factor into those controversies?" School vaccinations are part of entrance requirements to public schools. And that policy has been really important in helping schools maintain high levels of immunity against contagious disease. And now, in some areas that might become a little more fractured because of the response to what happened during COVID-19.

It's often claimed that Americans generally hate public health mandates, but I don't think that's true. It all depends on context. I was giving a paper on school vaccination history recently and someone asked, "Wasn't the polio vaccine rollout really an outlier with all that massive public support for the vaccine?" I asked the audience to remember the massive support for the COVID vaccines, in the beginning. If you remember, the development of the vaccines was record-breaking, and compliance was also record-breaking, compared to the polio outbreak or the great influenza outbreak, or anything that came before.

Dorit Reiss: Yes. The 70 percent of the nation who got the primary series. That's really high.

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Kim Tolley: Yes! The CDC recommended that all schools shut down. During the great influenza epidemic, not all schools shut down. Most states didn't follow the recommendation. But this time, people complied, and every state shut down its schools. As I was talking with the audience, it occurred to me that none of us remembered that very clearly. It was only four or five years ago, but it's forgotten already.

Dorit Reiss: In the beginning, all but six states had stay-at-home orders. It was nonpartisan. Public health is always political. But it was nonpartisan. It was across the board.

Kim Tolley: It was nonpartisan. The problem is that the quarantine was not like other quarantines in history. The word's original meaning is "forty days," which was more or less the length of quarantines in previous eras. But during COVID, the stay-at-home orders were renewed over and over, and as businesses shut down and people lost their jobs, pretty soon that feeling of "We're all in this together" shifted to "Oh, my God! The government is screwing us."

Dorit Reiss: I think that was part of it, but I think the misinformation was also a big part. The fact that we pretty quickly started seeing misinformation, saying, "This is not a dangerous virus. We don't really need this." This has also hurt compliance.

Kim Tolley: I agree. There recently was an article in *Nature Communications*. It looked back at the first outbreaks in Italy, and the authors calculated that the case fatality rate was close to 10 percent.[2]

Dorit Reiss: Wow!

Kim Tolley: Ten percent! If you had a school with five hundred students, which is a pretty average-size school for California, that would mean that fifty children would be dead. And that's what people believed.

Dorit Reiss: Fifty kids! That's just dead and that doesn't include long-term harms.

Kim Tolley: It doesn't include harms. And then the virus, of course, morphed and changed, and that happened really quickly, too, which confused people. People would say: "Is it still that dangerous? Is it less dangerous now? Why do I need to? I don't know." It's the context—the reaction to what happened in the COVID pandemic—that has made the issue of vaccines so controversial now, although partisanship was accelerating in the late twentieth century, too.

Dorit Reiss: Yes, that's true, I mean the California change with all its benefits did also. Although SB 277 [California's state law that removed the non-medical exemption to school mandates] wasn't completely on partisan lines, it was largely on partisan lines. I think it'll get worse before it'll get better. Again, states respond to the realities. If we have—and I hope we don't—a virus that's like Ebola but more contagious, there will be a reaction. And that will cover more than one state. But as long as or until we see the bad consequences, it's going to be an uphill battle. It's still a battle worth fighting, but it's going to be an uphill battle.

I do want to pick up on something you said about people not liking mandates, and I actually want to qualify that by saying two things. One, people don't like *new* mandates. People internalize mandates after a while. So one of the things is a long-term versus

[2]Chirag Modi, Vanessa Böhm, Simone Ferraro, George Stein & Uroš Seljak, "Estimating COVID-19 Mortality in Italy Early in the COVID-19 Pandemic, *Nature Communications,* https://www.nature.com/articles/s41467-021-22944-0.

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short-term view. My mom didn't understand why seatbelts or car seats were important. Now she does. But to me, it's automatic. People internalize mandates after a while. The other thing is people's reaction to mandates in part depends on the information behind the mandate. "How important do they think this vaccine is for us?" "How dangerous do they think it will be to my kids? If there isn't a mandate, was I going to vaccinate anyway?" I think mandates work best when you have general acceptance of a vaccine, and the mandate is kind of to push the last 5 percent, not the extreme 5 percent that really hate vaccines.

Kim Tolley: Right.

Dorit Reiss: The ones that are hesitant and reluctant, but not deeply opposed. And that's when the mandate can work. If you have 30 percent that have issues with the vaccine, those will join forces with the 20 percent that don't mind the vaccine, but don't like being told what to do. And then you have a problem. In other words, mandates should be after you've used the other tools, such as education, incentives, and easy access. The United States is much quicker to reach for punitive measures than it is to reach for enabling and solving access problems. Maybe that is because our infrastructure is limited, and we don't have the right incentives. It's a lot harder to say, "Let's bring a vaccine clinic to every church, to every school, not force anyone but give parents that want to an easy way to get the children vaccinated without having to take time off work." Or, "Let's give parents a right to paid leave to get children vaccinated." We do a lot less of that than what we do with mandates. California did do the paid leave for COVID, but not for routine vaccines, for example.

Kim Tolley: Right. So let's shift and talk about schools a bit. One question we had was, What policies have been effective in strengthening school vaccination rates? One that you mentioned, and that has been really effective, has been used at various times against diphtheria and against polio. That is the idea of offering vaccination on school grounds. Access is so important to families who have a hard time leaving work to take their kids to the doctor or are afraid that they'd have to pay for the vaccine. Access in terms of cost is important too: parents can get access to free vaccines, but they're not always aware of how that works. So opportunities to talk to parents when they're registering their children about what's involved and how they can do it easily and inexpensively, would help a lot.

Dorit Reiss: A vaccine clinic next to the school when you come for the first day to drop off your materials.

Kim Tolley: Have a pop-up clinic. We can do pop-up stores at malls easily. We should be able to do a pop-up vaccination clinic, so that children can be vaccinated in order to enroll in school when parents bring the paperwork; that would help enormously.

Also, just listening to parents who are expressing concerns and not jumping straight to: "Well, this is the law. You have to do it." We must listen to parents respectfully, because they can always make the decision to just not enroll their child in the public schools. In California and other states, they can avoid vaccination mandates by homeschooling their children. And in California, parents who choose to homeschool can take advantage of taxpayer-supported programs in the public schools. So to some extent, California taxpayers are funding some of the programs homeschooled children receive.

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I think every state should ensure that homeschooled children supported by public funds are getting a curriculum that includes some information about public health and the process of vaccination. Other states do that. California does not. California's SB 277, the law that eliminated non-medical exemptions, gave parents the option to avoid vaccination by homeschooling their children. They can opt out and homeschool. And that's their decision. That's their choice. But since they are taking advantage of taxpayer-supported programs, I do think the state should require that their children receive an adequate education about vaccination, one that would allow them to make an informed decision of their own about vaccines when they come of age. But they're not going to be able to make an informed decision of their own unless they have access to good information.

Dorit Reiss: Yeah, I've said that for a long time. I will tell you honestly that SB 277 was a surprise for me, and I still think it is not the ideal approach. But policymakers tell me my ideal is not very practical. In my view, the ideal approach would be to have an exemption, but have an exemption process that requires the parents to go through a weeklong course and then an exam at the end. In other words, make the exemption inconvenient, but keep the option. You're correctly saying some of the parents are a lost cause, but we need to make sure the children get this information. And, as you're saying, if you're going to homeschool, at public expense, we can legitimately impose some requirements.

Kim Tolley: Absolutely. I think we need to understand what's being taught in publicly-funded schools. This has been done at various points in history. Important surveys of schoolbooks were conducted using during the big anti-vaccination movements of the Progressive Era. In 1905, the American Academy of Medicine analyzed over seventy of the most popular schoolbooks published during the previous decade, and they discovered vaccination wasn't really covered in K-12 schoolbooks. The focus was mostly on sanitation, which was also underlying some of the misunderstandings about smallpox. At the time, people believed that you just needed to keep your body clean and you'd never get smallpox. And in 1910, California's Department of Public Health did an informal survey of people who were anti-vaccine and didn't want their children to be vaccinated, and they learned most parents were citing this kind of misinformation. So they began requiring textbook authors who wanted to be on the state-approved list to include content to debunk and address misinformation. I quoted some of the passages of those texts in my book, and it's really interesting. You have some authors saying things like, "If anyone tells you that a vaccine will poison your blood, just don't believe that."[3] And then they explained why. I don't think we have anything like that going on in the schools today. It's been a hundred years since anyone did that kind of survey of textbooks and came up with any kind of recommendations. Right now, classroom teachers often have to come up with their own lessons to address misinformation about vaccines. We shouldn't place such a burden on classroom teachers, especially given how controversial the topic is. But it wouldn't be burdensome if teachers knew that their curriculum materials had been approved by their state and included valid information.

[3] Kim Tolley, *Vaccine Wars*, 133-34.

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Dorit Reiss: I mean, it could fit with some other classes pretty easily, if the concern is that there's limited time. There's always more to do than you have time to do. But you could connect vaccines with areas in biology, to promote critical thinking, and so forth. My kids are now in public school, but they were in private school for a while. In the private school, they had classes in critical thinking, where the kids were asked, "How do you identify if these articles are true? What are the warning signs? How do you verify online and things like that?" I'm pretty sure the public school doesn't do that.

Kim Tolley: There are some programs. But I'm not sure anyone has looked at the modern curriculum to say, "Vaccination would be a prime topic for this. Have you considered folding it into the curriculum and then revamping it?" Revamping has to be done at the state level. The state department of education would need to make a requirement for approved texts that public schools could adopt. But it's not impossible to do.

Dorit Reiss: Yes. Finland has a program, I think, for combating misinformation. I don't know if they specifically address vaccines. They definitely address health misinformation. They have a program to teach middle schoolers these issues, and empirical studies suggest that it works. It helps the children. It apparently makes the children better, more careful consumers of information.

Kim Tolley: That would be great. The other thing I found out in the course of my research is that at various points in history—and it's probably been continuous—public schools have not enforced the state's vaccination laws. They didn't do that in the nineteenth century, when it was just inconvenient sometimes. At various times throughout the twentieth century, there were stories about schools or districts that weren't enforcing the laws, and this happened in the twenty-first century as well. We only learn about it when the CDC releases its annual report showing each state's school vaccination and exemption rates. When a state finds itself at the very bottom of the list, with really low vaccination rates, usually some local effort will be undertaken to look at the kids who are unvaccinated. Often this process reveals districts that have not actually excluded the unvaccinated students from the schools like they're supposed to. And for educators, that happens for several reasons. The exclusion can be tied to a loss of school funding. The exclusion can also just interfere with the educator's mission: "You know the kids are here to learn, and if I exclude these children from school who've had attendance issues all along, they will never learn to read." I think that those kinds of feelings exist. So, to strengthen its policy, each state should revisit and do an audit of compliance with the laws. I think that would be really useful.

Dorit Reiss: Yes, and that's a lot of ground to cover. The other issue that we've seen come up in California is the "conditional enrollment" kids. Those are students that started the vaccination series once their parents realized that it was required, but you need to follow up to see if they completed the vaccination series, and schools often don't bother. It's not a priority for schools. To be clear, this is not an accusation, even if it sounds that way. Schools have a lot to do, but they need to follow up to make sure the students finish it, and schools often don't do that. As you said, their mission is not necessarily to vaccinate kids. It's to make sure that the kids are educated. So conditional enrollment is another area where we can close gaps.

Kim Tolley: That's true. And what the records show, is that once a district begins to require compliance, families do step up and have their children vaccinated. It would

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help if everyone really understood how a classroom can be a prime site for contagion to spread. I was a schoolteacher for several years early in my career, and every almost every child and teacher in the school was constantly catching the flu and other contagious diseases.

Dorit Reiss: Kids in and out the door, and some with contagious diseases. I wonder if homeschooling is a separate issue from non-vaccination. But, as you pointed out, there's a connection, because it gives parents an option. We know that anti-vaccination can get into homeschooling. But do you know, if there's anything the other way—if there's any research on whether homeschooling or private schooling contributes to vaccine hesitancy? Let me put it another way: We know that there are parents who choose homeschooling because they want to avoid vaccination laws. Is the opposite also true? In other words, do the parents who are homeschoolers, but not vaccine-hesitant, get influenced by vaccine hesitancy through homeschooling? Is there any research on that? Is that something that has been studied?

Kim Tolley: I'm not familiar with any research on that. I think it would be hard to research home schooling, especially on a controversial issue like vaccination. To have any valid results, you'd need to have a large, randomly selected mass of homeschooling families agree to participate. I don't know about vaccination in the homeschooling context. I'm a historian, so most of my research focuses on the past. But you're asking a great question in terms of what research might be done now.

I would like to see more research on cyclical issues and problems. We talked about how schools don't go back and update or necessarily even look at their information about vaccination. Instead, everyone waits until an epidemic breaks out and some kids get sick before anything's done. I'd like to know more about the psychological and sociological factors behind that, because it's a cycle that's been going on for centuries. It would be great if we could learn to plan a little bit better for the next outbreak. I'd also like to know more about how educators and schools could speak more effectively to parents who are hesitant, or who are just opposed to vaccination. What tips and techniques would be good for educators? More research on what really works would be helpful.

Dorit Reiss: Let me pursue that last one. One of the issues is when the educators aren't vaccinated. How do you feel about vaccination mandates for the educators? That's crucial for at least two reasons. One is that educators can infect children. The other is that educators can infect each other. We know from COVID that we've seen really high rates of death among teachers. I think we have quite a big population of teachers with conditions that make them vulnerable, or maybe it's just age issues. A third point is that teachers getting vaccinated may make them more effective messengers.

Kim Tolley: I agree. It would make schools safer if teachers were vaccinated. And not every state requires that. Most don't.

Dorit Reiss: Except for COVID.

Kim Tolley: Right, a number of states came to require that vaccine. COVID was hitting older people more severely, and so vaccinating teachers made a lot of sense.

Dorit Reiss: Yes. Influenza does, too.

Kim Tolley: I think it would be great if teacher vaccination were more widespread. It's going to be harder in the partisan climate that we have now for that to happen.

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But that's definitely something that would make a difference. That would help, because educators, staff, and students are very vulnerable to contagion in the schools.

I think that a whole lot more work needs to be done in schools: with educators, with parents, with school administrators, and above all with encouraging students to be able to recognize misinformation. The next few decades are going to be really interesting.

Dorit Reiss: Yes—not necessarily good, but interesting.

Additional Readings

Klein, Rebecca and Caroline Preston. "How the Science of vaccination is Taught (or not) in US Schools," *The Hechinger Report*, May 23, 2020, https://hechingerreport.org/how-the-science-of-vaccination-is-taught-or-not-in-us-schools/.

Prothero, Arianna. "Many Schools Don't Teach About the Science of Vaccines. Here's Why They Should, *Education Week*, July 2, 2021, https://www.edweek.org/teaching-learning/many-schools-dont-teach-about-the-science-of-vaccines-heres-why-they-should/2021/07.

Reiss, Dorit Rubinstein. "Vaccines, School Mandates, and California's Right to Education," *UCLA L. Rev. Disc*. 98 (2015), 114-15.

Reiss, Dorit Rubinstein. "Rights of the Unvaccinated Child," *Law, Politics, and Society* 73 (2017), 73-108.

Reiss, Dorit Rubinstein. "Anti-Vaccine Misinformation and the Law: Challenges and Pitfalls," *Indiana Health Review* 18, no. 85 (2021), 85-94.

Dorit R. Reiss, "Litigating Alternative Facts: School Vaccine Mandates in the Courts," *U. PA. Journal of Constitutional Law* 21, NO. 1 (2018), 207-66.

Tolley, Kim, "Textbook Health: What Children Learned about Vaccination in the Progressive Era," paper presented at the History of Education Society Annual Meeting Virtual Conference, 2020. Available at ResearchGate. DOI: 10.13140/RG.2.2.23674.57282.

Tolley, Kim. *Vaccine Wars: The Two-Hundred-Year Fight for School Vaccinations* (Johns Hopkins University Press, 2023).

Tolley, Kim, "School Vaccination Wars: The Rise of Anti-Science in the American Anti-Vaccination Societies, 1879-1929," *History of Education Quarterly*, 59, no. 2 (2019), 161-94.

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