

Erin Welsh

Hi, I'm Erin Welsh and this is This Podcast Will Kill You. Welcome back to this season's miniseries of bonus episodes, the TPWKY Book Club, where we get to read the best, most interesting, most impactful, most hilarious, most relevant, most everything popular science books and then chat with the authors of these books. It has been such a fun and fascinating ride exploring topics such as pandemic prediction, menstruation myths, wildlife wrangling, perspiration perspectives, infections and inequalities, and so much more. We've got just a couple more of these Book Club episodes coming out this season after this one and we'd really love to hear from you all about how you liked this Book Club, whether you'd like it to come back next year, any books you'd want to have featured, we've gotten some excellent recommendations so far, so thank you to everyone who has written in, your favorite book of the season, just send us all your thoughts.

Today's episode weaves its way through discussions of unequal access to healthcare, debates over safety and regulation of immunization, the formation and subsequent erosion of socialized medical services, the rampant spread of mis and disinformation, and public sentiment driving policy change. Sounds pretty familiar I'm guessing. But in fact the focus of today's episode is not the COVID pandemic but rather another significant period in us history that would have lasting impact on healthcare and public health policy in this country. The American Revolution and the rise of smallpox inoculation. War and infectious disease, it's a theme that often comes up on this podcast and the American Revolutionary War is certainly no exception.

During the early years of the war, a smallpox epidemic raged through the colonies and found its way into the continental army, threatening catastrophic loss of life for many and a tremendous defeat at the hands of the British forces. In response, George Washington ordered that all continental soldiers who had not previously been infected with smallpox be inoculated against the disease, a practice similar to but riskier than vaccination which had not yet been developed. Inoculation involve transferring a bit of smallpox material from an infected person under the skin of someone else, resulting in a mild though sometimes severe smallpox infection. After recovering, the inoculated person had lifetime immunity against the disease. Some historians suggest that the resulting drop in smallpox outbreaks and deaths paved the way for ultimate victory for the continental army or at least played a role.

What often gets left out of the story though is that this was by no means an easy decision for Washington to make, nor was it a universally popular one. Even though smallpox inoculation, also called variolation, had been introduced to the colonies over 50 years before the Revolutionary War by an enslaved African man named Onesimus, the practice was hotly debated. One major driver of the skepticism surrounding inoculation was that it was far from risk-free. Unlike smallpox vaccination which wasn't developed until 1796 after the Revolutionary War, inoculation could on occasion lead to full infection or even death and you could spread the virus to others until you recovered. Because of this, soon after inoculation was introduced to the colonies, regulations restricting the practice were put into place and punishment for violating those restrictions could be extreme.

As a result, access to inoculation was often restricted to the wealthy elite, leaving everyone else to take their chances with a natural infection which had a case fatality rate of around 30%. As the American Revolutionary War approached, a series of smallpox outbreaks across the colonies incited another revolution, the fight for universal affordable access to smallpox inoculation. In 'The Contagion of Liberty: The Politics of Smallpox in the American Revolution', Author Dr. Andrew Wehrman explores the fascinating history of smallpox inoculation and the popular movement for equal rights to healthcare against the backdrop of the American Revolutionary War. Dr. Wehrman, who is an Associate Professor of History at Central Michigan University, presents a gripping and enlightening account of the interplay between politics and disease, community and individual rights, and government action and inaction during the American War of Independence.

The Contagion of Liberty' not only offers a fresh perspective on this period of history, but it is also an incredibly timely book, drawing parallels between government response, universal healthcare and vaccination during the COVID pandemic, and the drive for inoculation for all during the Revolutionary War. I am so thrilled to get to chat with Dr. Wehrman today about inoculation riots, the rise and fall of socialized medicine for smallpox prevention, and an overlooked aspect of George Washington's legacy, that being able to change your mind when presented with new information shows great strength, a lesson I think we can all learn from. We've got so much to talk about and I'm excited to get this interview started, so let's just take a quick break here and dive in.

TPWKY

(transition theme)

Erin Welsh

Dr. Wehrman, thank you so very much for joining me today. I am really excited to chat with you about your fantastic book 'The Contagion of Liberty' and all of the aspects of public health and individual rights that were at the center of this discussion over who should or could get inoculated against smallpox during the American Revolutionary War. And then of course how things changed once the smallpox vaccine became available. It's such a fascinating history that I didn't really know anything about. But before we get into what's in the book, I wanted to ask you what your inspiration was for writing it. Where does the title come from?

Andrew Wehrman

Thank you so much for having me. I've enjoyed listening to your podcast. It's a thrill to be on it and talk about it and finally have the book out to be able to answer some of these questions and to do it. The origins of the book, the research for it started a long time ago as I was a graduate student in American History at Northwestern University in the mid 2000s, late 2000s. And I was a student studying the American Revolution. I really wanted to understand how ordinary Americans experience the American Revolution. What did it feel like to be in town debates? How did they make choices that they needed to in joining the war effort or deciding to be a loyalist or a patriot? And how did that work out? And so I went to look at the sources, what historians do.

So I was reading through town records and diaries of people who were living through the period and was kind of coming up with a lot of the same kinds of things that other people have talked about until I realized and I found some sources from a town called Marblehead, Massachusetts where everybody was talking about smallpox. They were talking about epidemic smallpox, who had it, what to do about it, whether to inoculate or not. And this was at the same time as people in Boston were talking about what to do about the tea and the Boston Tea Party. And I thought this is interesting. And the more I kept pulling on that thread, the more I found more instances of people in communities having discussions over what to do about smallpox. And I realized that the American Revolution really broke out during an epidemic of smallpox.

All the anger of the Revolution I argue in my book to some degree or another was accelerated or made louder by debates over smallpox, inoculation, ideas of liberty. It all comes out during an epidemic as we know, we start to question our government's responses, we start to think about what an ideal government might look like. And all of those debates kind of got mixed up together during the Revolution. You asked me where the title of the book came from, I should mention that. So it's called 'The Contagion of Liberty' and that phrase itself was used by another historian, a famous historian at Harvard of the American Revolution named Bernard Bailyn. And he was talking about the kind of infectious spirit of the Revolution, that Americans have a zeal for democracy and overthrowing monarchy and making government more responsive to the people.

And then after the American Revolution that spreads to France and the French Revolution or the Haitian Revolution. So Bailyn was talking about that spirit of revolution. I'm doing it more literally and I'm talking about the contagion of liberty as inoculation which was a contagion, it was the intentional spreading of a contagious disease. But after someone gets inoculated, they feel a sense of liberty. If they survive it and get through the the ordeal, they can never experience smallpox again, that's the only good thing about smallpox is once you've had it once, you're immune for the rest of your life. So after being inoculated, people felt the sense of liberty. And they also wanted to share that sense with family members and neighbors and inoculate whole communities to protect themselves from smallpox. So that's where that title comes from.

Erin Welsh

It's such an interesting lens through which to view the American Revolution that like I said is new to me, even though on the podcast we've talked about inoculation. And inoculation is a much older practice than vaccination and differs from vaccination in some key ways that have these potential health consequences for a non immune community. And as you discussed, this led to a great deal of debate or conflict over unregulated inoculation. So let's start at the beginning though, how was inoculation first introduced to the colonies and by whom?

Andrew Wehrman

Inoculation, the discovery that intentionally inserting the smallpox matter, the pus, into the skin, usually in the arm via an incision, that had been known about for centuries in other parts of the world. There's debates if it was Africa or the Middle East or China, but Europe was the last to know about it. And Europe doesn't like to be the last to know about things but they were. And so gradually letters started appearing getting sent to the royal society in London from people who were in the Middle East, in Turkey especially, but there were reports from China as well about this thing called inoculation.

But in the colonies, a reverend in Boston named Cotton Mather read about some of these accounts, he was a member of the Royal Society. And he wrote a letter back to them in the 17-teens, like 1716, saying these reports coming out of Asia are not the first time I've heard of inoculation. And he tells the story about how he learned it from an enslaved man named Onesimus that his parishioners at the church gave to him as a gift, some gift. But anyway, Onesimus must have been incredibly smart and kind of brave to come forward with this. And Cotton Mather asked him, have you ever had smallpox before? And Onesimus said well yes and no and described the process how he was purposely infected, he survived a mild case, and said that this was common in the part of Africa where he was from. Mather thought this was curious.

In 1721 when smallpox started breaking out in Boston, Mather wrote a letter to all the doctors in Boston saying now's the time to do it, let's inoculate, let's take advantage of this knowledge that we have, time's short, let's inoculate the public. And that's where it became really controversial. Can we trust what this enslaved person knows? Mather had been associated with the Salem Witch Trials, does this guy understand science? There was a doctor in Boston named William Douglas who had studied in Europe and he said look, we have to put this to more of a scientific test, we can't just start inoculating people without knowing if it's safe. He has a point. He was against it, called it a wicked practice. Other ministers called it playing god, right. God should decide who infects us with disease and who gets well of disease, that we shouldn't meddle with god's work.

So it's just fascinating, you could do a whole episode on 1721 Boston with these conflicts over science and religion and expertise. But eventually one doctor does inoculate, his name is Zabdiel Boylston, and he inoculates almost 300 people. The disease spreads, almost 6000 people in Boston which was nearly half the population, gets infected. About 15% of the people in Boston in 1721 who are infected die, it's about 1000 people. Really high mortality rate, about 15%. The people that Boylston inoculates, less than 3% die, 2.5%. 6 of 287, if you want to do the math of his patients, die. Which is a better return. Inoculation does kill some but it's more survivable. So the numbers start to prove it.

Erin Welsh

Were the numbers sort of the underlying driver for this change in public perception of inoculation? Or was it a combination of numbers? I mean who was fighting for and who was fighting against inoculation?

Andrew Wehrman

It was the numbers but it was also some of the arguments. So Cotton Mather and later Benjamin Franklin in Philadelphia would start to really push back against those religious arguments. Mather said god has given us this preventative, he's given us inoculation. Why do we take any medicine? Why do we ever go to a doctor? Isn't that also playing god, right? So he would push back on some of those religious concerns. Franklin did as well. But a lot of it was the statistical evidence. So after Boston in 1721, there were epidemics in Boston again in 1730, more people tried inoculation, it had a lower fatality rate every time it was tried, when more people understood the process doctors got better at it. And it moved. So there were inoculation experiments in Philadelphia in 1736, Charleston in 1738. And I talk about these episodes in the book. And it's creating a kind of momentum. People are reporting it in newspapers, Franklin's reporting the numbers and his almanacs. And it was in the North American colonies that the popularity of inoculation really grew faster than it did in Great Britain itself. And this starts driving demand. People are reading about it and saying hey, I might might wanna try that if ever smallpox breaks out here.

Erin Welsh

So there's this general trend towards acceptance or towards wanting smallpox inoculation but public opinion across the colonies at least was not necessarily uniform. Did it vary across class or religious or political lines?

Andrew Wehrman

Yes, the short answer. So it did. The big problem with inoculation was that inoculated patients were still infectious, they could spread smallpox to other people. They had to be quarantined usually for about three weeks to be safe, some places mandated that inoculated patients had to be quarantined for 30 days. That's hard. It's hard to pull that off because not very many people can afford to take off work for 30 days, to be away from their families for 30 days. Some people would try to cheat and escape, leave quarantine early and that would make people's neighbors very angry. As demand was growing in the 1750s, 1760s, it was largely wealthy people who could afford to get inoculated. They would build inoculation hospitals usually in isolated areas, sometimes on islands or away from population centers. And people who could afford it, because doctors charged a lot, but the bigger part of the expense was just that time that it took to get fully recovered.

So Thomas Jefferson from Virginia in his 20s in 1766 went to Philadelphia to be inoculated. But ordinary people, poor people, working class people couldn't afford to do it. So there's this rising demand for it, people know about it, people know that rich people are getting it but average colonists still don't usually have access to it. There's one big exception that happens and that is it starts in Boston but other smaller communities do this too, and people start saying well what if we inoculate everybody at once, right? Let's do a general inoculation. That way everybody gets off of work, we shut down the whole town, all the businesses are gonna be closed, but we'll all get through it together. And then in a couple months time things will reopen and our whole community will be immune from smallpox for decades.

So Boston does this 40 years after that initial trial in 1721, in 1764 Boston does a general inoculation. And this time they pay for the care of the poor, they reimburse doctors who inoculate the poor, they subsidize food for people during the inoculations. It's very expensive but ultimately extremely successful. Thousands of people go through with it, 5000 people inoculate in Boston, around 1% die from it, there is a mortality rate from inoculation. It tends to be people who are very young children, babies under six months old, or older people, people who were not very well nourished to begin with. Sometimes it's just random though.

And then by the end of these, it takes several months but after it's over and people in Boston cheer the news, they've recovered, they've gone through this event together successfully. And that's at the same time that parliament over in Great Britain, for those of you that know your US history, is starting to change the relationship that they have with the colonies because they have to pay for that previous French and Indian War. So Boston gets told that they'll have to pay a new sugar tax and that there's also a stamp tax that's coming. Right as they're recovering from this epidemic, there are these new taxes. And that hasn't really been talked about before my book. But I think now that we've gone through a pandemic, can you imagine if after experiencing two years of COVID, the government says now we're gonna raise everyone's taxes on top of it, how angry people would get. That's kind of what happens.

Erin Welsh

Wow. Yeah. And it's such an interesting comparison with COVID or just thinking about the American healthcare system today where COVID and other things are often framed as public health vs the economy. And there's this, I really don't like that sort of framing because like you said, although inoculation of an entire town like Boston would have been very expensive at the offset, over time that would have paid off, it was an investment in people, not to mention just the non-economic benefits that you're achieving. But it's interesting to see that comparison or sort of the echoes of that today and a lot of what people were talking about during especially the early months of COVID.

Andrew Wehrman

They were making some very similar arguments about that kind of cost benefit. It's going to cost our businesses in the short term. But so many people were demanding it, these average sailors and working class people who said we can't afford to go to the hospital otherwise. But once we're inoculated, then we're willing to sail to other towns, we're willing to do the business that's required. We'll be safe and have liberty, we'll be secure against the disease. And ultimately it was that kind of bottom up pressure from people and they're advocating, they're writing letters in the newspapers, they're demanding to be inoculated, sometimes violently threatening to be inoculated. The violence that I describe in my book is pro inoculation, people who are demanding it, they're not opposed to it. There's nobody who was against it by the time of the Revolution, at least not in significant numbers. It's all people who are demanding these public solutions. And the best way to do it is have the whole community organize it together.

Erin Welsh

It's interesting because I think we can look back now and say well of course people should be protected against this, of course your income shouldn't determine whether or not you get the healthcare that you need. But as you point out, inoculation could still be considered a dangerous practice if you are the only person getting inoculated, you're not following procedure correctly, and you escape quarantine or something like that. And so because of the potential dangers of inoculation, there were a lot of laws or regulations that sprung up really quickly after its introduction it seems. What did some of these laws entail?

Andrew Wehrman

Yes. Well it makes total sense. So at the establishment of these colonies in America, there were laws created to protect people against incoming diseases. These colonies were usually port cities. Smallpox was not endemic there, I think there's a misconception that colonial Americans were constantly experiencing smallpox, it was something they experienced all the time. But it really wasn't, it was episodic, it would come from a foreign port and they were on the lookout for it. So there were quarantine laws in place, ships would get inspected when they came into port, sailors had were required to report any illnesses that they were feeling.

Places like Boston, Philadelphia, all these port cities had quarantine hospitals or pest houses. And so if anyone was feeling sick, they'd be taken to these isolated quarantine hospitals to protect the community. And those quarantines worked really well. It kept smallpox out sometimes decades at a time. The officials in these cities would work to stop any outbreaks. It was a requirement by law that if smallpox especially, this was the one that they were really looking out for, if smallpox symptoms broke out on someone in your family, it was required that you had to report it to a Justice of the Peace or a city official.

If you didn't, there were heavy fines that could be used against you if you were found to be, they would say wickedly or wantonly, if you're doing it on purpose or even accidentally spreading smallpox, you'd be subject to serious fines, sometimes whipping for doing it. They were really careful with this. And so if you reported that your child had smallpox symptoms, they would send the doctor over to inspect them, the doctor would say yeah, that's smallpox, and you'd have a couple of options. Either that child would be taken to the pest house, the quarantine hospital until they recovered, hopefully recovered. Or if the child was too young, the parents kind of said no, we don't want to send the kid away all by themselves, they would build a fence around that person's home and restrict anyone from coming or going for that quarantine period, for three or four weeks.

And this system of quarantine and these laws worked really well to keep smallpox out. There's kind of episode after episode of town officials working in my book to keep out smallpox. So city officials didn't want people just inoculating on their own because that had the potential to spread the disease, they wanted to make sure there was an actual need for it. If you did inoculate, they wanted the doctors who were performing it to be licensed, they wanted them to be operating under certain regulations and certain watches, to have guards available, and all of that kind of stuff. So if you were to just decide to inoculate your family and not tell anybody, that was a heinous crime.

So when I say people were advocating for inoculation, they were wanting their city governments to either have a general inoculation or just make more sites available, more hospitals, make hospitals that are available to the poor, lower cost hospitals, and arguing for that. I think there's a misconception when people talk about history during the colonial period or during the olden days, if you couldn't afford medicine well then you just had to go sick. And that's not true. People always cared for each other. And then more than that, people demanded these things, they would riot if they were withheld from... I mean imagine what you would do if you were withheld from something that could save your family. And there were constantly these debates about how to provide access. And after smallpox inoculation was proven to be so effective, the big problem for everyone was how do we get this to the most people possible safely?

Erin Welsh

It does present a huge logistical challenge. And before I get to some of how those challenges were dealt with, I want to talk about the mechanism behind this. So you talk about how over the 18th century people began to gradually warm to the idea of inoculation as they saw the numbers, as they saw just how much it protected you from dying of smallpox. But this was before germ theory could provide an explanation as to why it worked. What was the widely accepted explanation for this protective mechanism of inoculation?

Andrew Wehrman

Yeah, it was, they didn't know viruses existed, they didn't have a great sense of how smallpox spread. They generally understood it to be infectious. If you were hanging around taking care of somebody who was sick with smallpox, you were likely to break out with it yourself. They also understood that if you had smallpox as a kid, you were probably safe to work in a hospital or nurse someone who was sick. So they understood that much but they didn't really understand how smallpox spread from person to person, they usually thought it had to spread on a surface, like on a piece of paper or on a blanket or on clothing, something like on dogs' fur, they were worried about dogs going between houses and things. They didn't really understand that it comes out of your exhalations, out of your breath.

Inoculation itself and the mechanism of it, I think sort of like most people today probably couldn't explain how an mRNA vaccine actually works yet they do it anyway because they're convinced of it because experts are telling them because of the success that it's been having. That's the way most colonial Americans thought of it. I don't think they thought too hard about how it actually worked. But there were some theories that were around. One of the most convincing ones to most people was a medical theory called the innate seed theory, which was the idea that all of us are born with disease-causing agents within us. So we all have the potential to have smallpox, we're all sort of born with smallpox and that it takes some outside agent, some spark to set it off. And that spark might be being near someone who's infectious or that spark might be some kind of environmental cause. It doesn't matter but at some point you might encounter that causative agent and that's going to set off the smallpox that's already within you.

And so if you have that idea that you already have smallpox within you and at some point you'll set it off, inoculation made more sense because now we can pick when that happens, we can make sure that we're introducing smallpox on purpose when we're at our healthiest, we can do it at a time of year when the weather is cool, not the height of summer when it's gonna be really miserable to have those pustules on your body. Maybe not the dead of winter either. You can pick the season, you can choose your diet in advance. Smallpox won't come on you suddenly, that's way worse. So that was one idea that was common.

Erin Welsh

We'll take a quick break here. And when we get back, there's so much more inoculation in the American Revolution to talk about.

TPWKY

(transition theme)

Erin Welsh

Welcome back, everyone. Let's get back into it. Skipping ahead now to the American Revolution, you talk about how this kind of represented this shift from reactive inoculation policies where if enough smallpox is spreading within a community, then we can decide to inoculate, to hey, let's not wait for smallpox to get here, let's inoculate everyone right here and then be done with it. How did this coincide with the sentiment that was also kind of underlying this revolution? And did this spread beyond Boston into other places? Like how did it spread throughout the colonies at this time?

Andrew Wehrman

Yeah. So Boston had a rule that once smallpox infected 20 houses, and they would try to keep it out, they tried to keep that number down, but once it infected 20 households, that's when inoculation could be practiced. And so the newspapers reported it's in 11 households, next day now it's 13. Well a couple of people have gotten better, now it's 9. And people are watching how many households it's in, they're trying to anticipate when the city will announce that inoculation can or will take place. They usually have a town meeting where they would announce it, they'd publish it in the newspapers. The newspapers are absolutely crucial here in getting this information to the people.

And at the same time as people were looking at those numbers, who has smallpox, what street do they live on? Sometimes it would name who they were, the privacy laws not being the same. But it could be really effective because you could know I went to church with that person, I need to be really careful myself, or I was on Fish Street the other day, that's where the smallpox had broken out. Anyway, people were reading the newspaper to be really aware of the outbreak, if it's increasing or decreasing, who's getting it. And at the same time on the other parts of the newspaper, they're reading about problems with Great Britain, they're reading about tea taxes, they're reading about protests that are happening on other issues.

And I think that that's a part of the Revolution that we don't get is how during a revolution we get so agitated and anxious and angry that other issues boil over together. And so if you're wanting your government to be more proactive with public health or also people who are wanting the local government to be more proactive against Great Britain, they kind of weave themselves together. And people were imagining the kinds of government that they wanted. Great Britain, a parliament in London doesn't have any idea what's going on with smallpox in the colonies. It takes so long to get news, to get things back and forth. A government in London cannot manage epidemics in Philadelphia or New York or Boston. But the local governments can do so quite well. But there's a disconnect between them. England handles smallpox differently, smallpox is endemic in London. They're not having these debates in the same way about general inoculations, access to the poor. They're much louder in the colonies.

And that causes friction among the people because you've got Boston experiencing its government is providing really good quarantine, good healthcare, they're looking out for their citizens. At the same time, people are thinking you know what? What's London ever done for us? They're not building hospitals over here with our tax money, they use their taxes on foreign military excursions and it's not really for me or for my life. These episodes, these demands for inoculation start breeding some similar resentments about the British government and what they are and aren't doing for average people. Women especially were talking about it in ways that they weren't necessarily invited into political conversations, they're trying to decide what would be best for their children, their husbands, some of whom are getting ready to go off for war. They hear about rumors, they understand what happens in encampments and military campaigns, that disease can spread.

So some of them start getting worried about that and that starts bringing on some concerns. Should we be inoculating people going off to war? We know that if things get worse, there's more crowded town meetings, more anger, marching of troops, disease is going to spread. So they start wondering what should be done about it. Should we open up inoculation more broadly? And in 1775, 1776 you start seeing governments in towns across the colonies, not just in Massachusetts or New England but elsewhere as well trying to get people inoculated.

Erin Welsh

Things did eventually come to a head and of course war happened and it was a large mobilization of troops. And inoculation initially was dealt with differently at the onset of this but then George Washington changed his mind. So he went from being this opponent of inoculation to then being portrayed as this hero for orchestrating what was at the time the largest inoculation campaign in history. What caused this change of mind?



Andrew Wehrman

That's exactly right. We should give Washington credit for inoculating the troops in the continental army but especially give him credit for changing his mind. That's what I think is so remarkable when people get so set in their views and we see it with COVID and vaccinations and things that somebody actually looks at evidence and says you know what, I was wrong and let's fix it. And that's what Washington does. So Washington is from Virginia. I haven't mentioned Virginia much so far in our conversation. Virginia did not have much of a smallpox problem before the war, very rarely had epidemics there, society was more rural. There were a lot of people there but they didn't really have big cities and smallpox does most of its damage in big cities or urban areas. And so the demand wasn't as high in Virginia. They understood that inoculation worked, they're reading the same kinds of books as I said Thomas Jefferson goes and gets inoculated in the 1760s. But it just isn't the kind of everyday alarm that it is in other port cities.

So Washington thinks that smallpox can be kept out via quarantine. He doesn't really trust inoculators which kind of makes sense, his first uh medical director was Benjamin Church who turned out to be a spy for the British. He kind of thinks that inoculators might go rogue and spread the disease. So he thinks it would be best just to quarantine early on. But he's got soldiers who are inoculating illegally anyway, even though it's contrary to orders. His own medical team, medical directors are saying we can do it, let's inoculate, they're publishing pamphlets and calling for it. Washington has pressure coming on it but he holds fast to his idea that quarantine alone will work. It has disastrous results, thousands of soldiers die in Canada due to smallpox in 1776.

Eventually Washington gets some of the right people around him, medical directors, his wife Martha, Martha Washington gets inoculated in 1776. At the same time as he's making it illegal for troops in the army to inoculate, Martha goes and does it. And after Martha does it especially, Washington starts softening up to it. He starts using the word inoculation in his letters for the first time. And it's kind of a remarkable change of mind. In February 1777, Washington issues the order to inoculate the continental army. The medical directors tell him we can inoculate new recruits who are far from the field as they're getting their uniforms, as they're getting their marching orders, there's plenty of downtime so we can inoculate and take that month for them to recover.

And it only takes a couple of months to cycle in soldiers into inoculation. You didn't want them all incapacitated at once, they would do it in groups. But it was incredibly successful and Washington just looks at it with astonishment of how well his medical service went through with it, how eager the soldiers were. The soldiers during the Revolution protested all sorts of things, low pay and not enough food and not enough blankets. But there were no protests for the inoculation program. They all wanted it, this was expensive, they couldn't get it often ordinarily in their towns. So they were eagerly going into it. And within a few months, Washington is just amazingly proud of it and becomes this kind of evangelical zealot for inoculation saying he wished everyone would inoculate. So there should be laws requiring families to inoculate their children, really becomes commander in chief of public health in that moment.

Erin Welsh

It's such an incredible transformation. And you're right, I really love that you acknowledge this changing your mind based on evidence and then sort of not hiding the past and how you had changed your mind. But I think that's a really important aspect of that. Today many public health campaigns rightfully frame vaccination as protecting not just yourself but also your community. And it struck me that inoculation was viewed as almost the opposite, especially in its early years. It was done furtively and if proper procedure was not followed, as you mentioned, it could lead to an outbreak of deadly smallpox. Do you think that this reflects a sense of individualism that is still present today in the form especially of people refusing vaccination for quote unquote "individual rights"?

Andrew Wehrman

It's different in a sense because nobody during the 18th century, during the period that I study, used individual rights in quite that way. They wanted to be inoculated, sometimes there were rules against it in their communities, but those rules were to protect the community. Sometimes there would be riots or violence used when people got ahead or jumped in line, so they tried to inoculate before 20 families inoculated. And that was a certainly a problem. But in general, people in colonial America understood that inoculation had to be done carefully, it had to be carefully regulated and was often most successful when all done together, which was something that the the Revolution really proved.

After the Revolution we see these mass immunizations, mass inoculation efforts get more common during smallpox in the 1790s. The difference that I see between inoculation and later vaccination was because inoculation itself was contagious. If I wanted to get inoculated in my home, that's gonna concern my neighbor next door because I might spread smallpox to him. It's gonna concern maybe the next town over but certainly the next neighborhood. And so there would be a town meeting called, can Wehrman inoculate in his house? And the town might say no, there's not enough smallpox present, we're not feeling an emergency, you can't do it, just hold on. We know people want to but we haven't really reached that threshold.

Or the town might say yes, it's time, let's all inoculate together, let's regulate it, let's figure out how we're going to do it. Vaccination, the implantation of cowpox into the skin which provides immunity to smallpox but has the great advantage that the person who receives it is not infectious, you can get your vaccine and return to work right that afternoon and you don't have to worry about spreading smallpox or cowpox to anyone else. And it's great, you can use it without those long quarantine periods. But because of that, it becomes used more individually. Now if I want to get vaccinated against smallpox in my own house, well nobody needs to know, nobody needs to care. The neighbor doesn't care, it doesn't affect them, right. We don't need to have a town meeting because I got vaccinated. It really shatters some of that community regulation.

In some ways that's very good, you don't have to shut down the whole town for people to vaccinate, you don't have to have these town meetings and quarantines and things. But I argue in the book that something's also lost there because instead we can just have people vaccinate whenever they want to or whenever they feel like it, it leaves others behind who can't afford it or can't have access to it and then they are more vulnerable during the epidemic. And often the people who have already vaccinated don't care or will blame them for not getting it. Why didn't you go get vaccinated when you had the chance? So it makes these civic debates over how to provide healthcare for all much less common than they were when the actual inoculation was itself infectious, it forced everyone to come together and make these decisions as a group.

Erin Welsh

Do you feel as though we are still feeling the legacy of this shift from public health for all to you're on your own? Are we still feeling that today in the form of privatization of healthcare, for instance, in the US?

Andrew Wehrman

Yeah. I mean to some extent the people that I study, founding fathers, this revolutionary generation would be really puzzled by the idea of medical freedom, right? That I don't have to get vaccinated because of whatever reason, I don't want to. Because with inoculation, nobody refused it, you'd be crazy. You're gonna get real smallpox and you're gonna infect others with it potentially, that's against all the rules and regulations and it's also really stupid, that idea that there's a sense of freedom in being prone to disease would have really puzzled them, right. Being immune to disease was how they felt liberty, how they felt a sense of freedom. So that part would have been kind of backwards.

But yeah, in the sense that I argue that there's a little bit, when vaccination is introduced to the United States, the people who are selling it and introducing it to the public are saying look, we don't have to do quarantines anymore, we don't have to do these city shutdowns anymore. We can introduce vaccination easily, you can vaccinate people at work, you can vaccinate enslaved people, they're not gonna spread it to other slaves, it's not gonna start an epidemic. Thomas Jefferson says I can vaccinate a smiter at the anvil and he goes right back to work striking that anvil after it's done, they don't have to take a month off.

But what ends up happening is that these general inoculations, these regulations become less common and it turns out that you need some of those to really prevent epidemic, you need some combination of people seeking out vaccinations on their own but you also need some programs for compulsion to require it or to get most people vaccinated over time also. And so you get a few communities that try to do that, to regulate annual vaccination campaigns or to vaccinate children in schools starts happening. But it's always patchwork. Some communities, some towns, some states do it better than others. Some leave people vulnerable, especially enslaved black people in the South were often left out of these campaigns. And when some places would do more strong arm tactics and try to force people to vaccinate, that's when you start seeing an anti vaccination movement spring back up, like a thing that would have been foreign in the 18th century starts happening in the 19th century.

Erin Welsh

Thinking about the timing of the introduction of vaccination, how many people were inoculated that thought well I don't need to get vaccinated because I'm inoculated? Was there sort of this lag in between that? Because inoculation, if you're 20 years old and you just fought in the American Revolutionary War and you've been inoculated so now you have lifelong immunity to smallpox, when would that ever then be an issue for you? Do you think that that plays a role in why vaccination as a practice wasn't as involved as much in these large mass campaigns?

Andrew Wehrman

Yes. So vaccination, especially when it's introduced, so vaccination is publicized by Edward Jenner in 1798, the first people in the United States start vaccinating in the year 1800. So a couple of decades after the Revolution, right. So yeah, if you were 20 fighting in the Revolution, you got inoculated at Valley Forge, you're in your 40s when vaccination is introduced, you don't need to be vaccinated. But it's likely your children or maybe grandchildren at this point need it. So often as it was introduced in the 1800s, the only people that needed to be immunized were young people, people who were not fighting age during the Revolution, some people that were new arrivals, immigrants, some people from different places that didn't get inoculated or vaccinated before. And so it's often harder to advocate for children, to take tax money and do a vaccination campaign for children or for immigrants, that would be the ones that would really need it.

So vaccination gets off to a really rocky start in the United States. It's very popular in Europe, Napoleon helps spread it around France and Italy, huge numbers. But it's really slow to get going in the United States even if it's celebrated, people think it's great. But there are a number of reasons why and a bunch of stories in the book, there are stories of greed, that some doctors in the United States try to make a big profit off of vaccination. There's also another disease that has come about in the 1790s called yellow fever which it has no vaccine, no known cure, and it really scrambles people's brains about what causes disease, what can be done to prevent it. So some people just lose a lot of hope. They just think we can't control epidemics in general, why would I subject myself to a vaccine of any kind because we had these terrible deaths from the last disease? There's some of that going on and there's in general difficulty again uh getting vaccine to poor populations and convincing politicians that it's necessary to do so.

So the tragedy is that vaccination should have made eradicating smallpox possible or certainly easier but it takes decades and decades, over a century, to get smallpox out of the United States. There were people, epidemiologists of their day, generally doctors who were saying if we did regular vaccination campaigns, we vaccinate all the children, all newcomers every year or every other year, we could really immunize our whole country. It wouldn't be that hard to do, it wouldn't be that expensive. Yet that's not what happens. And so there are these continual smallpox outbreaks, a really bad outbreak during the Civil War that keeps happening until the 20th century, until the government really got really serious about stamping it out.

TPWKY

(transition theme)

Erin Welsh

Oh my goodness, that was such a fascinating conversation. Thank you so much Dr Wehrman for taking the time to chat. I feel like that was definitely a conversation and book that will stay with me for a long time. If you all enjoyed this as much as I did and want to learn more, check out our website [thispodcastwillkillyou.com](http://thispodcastwillkillyou.com) where I'll post a link to where you can find 'The Contagion of Liberty: The Politics of Smallpox and the American Revolution' as well as a link to Dr. Wehrman's website. And don't forget, you can check out our website for all sorts of other cool things including but not limited to transcripts, quarantini and placebo recipes, show notes and references for all of our episodes, links to merch, our [bookshop.org](http://bookshop.org) affiliate account, our Goodreads list, a firsthand account form, and music by Bloodmobile.

Speaking of which, thank you to Bloodmobile for providing the music for this episode and all of our episodes. Thank you to Lianna Squillace for our audio mixing. And thanks to you, listeners, for listening. I hope you liked this bonus episode and are loving being part of the TPWKY Book Club. A special thank you as always to our wonderful, fantastic patrons. We appreciate your support so very much. Okay. Until next time, keep washing those hands.