

## Fixing Healthcare Episode 11 Transcript:

### Interview with Lindsey Fitzharris

- J. Corr: Hello and welcome to the fifth episode of season two. This is the Fixing Healthcare podcast with Dr. Robert Pearl and Jeremy Corr. I am one of your hosts, Jeremy Corr. I am also the host of the Popular New Books in Medicine podcast and with me is Dr. Robert Pearl. For 18 years, Robert was the CEO of the Permanente Group, the nation's largest physician group. He is currently a Forbes contributor, a professor at both the Stanford University School of Medicine and Business, and author of the bestselling book, "Mistreated: Why We think We're Getting Good Healthcare--and Why We're Usually Wrong."
- R. Pearl: Hello and welcome our monthly podcast, aimed at addressing the failures of the American healthcare system and finding solutions to make it once again the best in the world. As listeners know, our guests in season one were chosen for their expertise within the current healthcare system. Their bold plans drew over 10,000 listeners and sparked a national debate. The best and boldest of their ideas were part of the first every Fixing Healthcare survey, which you can visit on my website [robertpearlmd.com](http://robertpearlmd.com). Please go there to check out the survey results and add your own comments.
- R. Pearl: In season two, Jeremy and I have been welcoming guests from outside of the medical mainstream, looking for new, unconventional ideas along with surprising insights on the current state of American medicine.
- J. Corr: Our guest today has an unusual background and an expert outlook on the past. Lindsey Fitzharris earned her PhD. from Oxford and is one of the world's leading scholars on medical history. She is the author of the bestselling book, "The Butchering Art: Joseph Lister's Quest to Transform the Grizzly World of Victorian Medicine." She also created the popular blog, the Chirurgeon's Apprentice and hosts the YouTube series, Under the Knife, which takes a humorous look back at our medical past.
- R. Pearl: Welcome Lindsey. Both Jeremy and I have read and loved your book. Historians tell us that we can learn much about the future by looking at the past. The American healthcare system has much to learn. We were both surprised in reading "The Butchering Art" not for how distant Victorian medical care was from today but how many similarities there are. Please tell the audience some of your favorite stories from medicine's past.
- L. Fitzharris: There's so many stories. Robert, you and I were sort of talking back and forth via email about some of the stories that might bear relevancy to today and I was thinking about maybe I should try to give you some stories, and see if you could actually link it to today because there's so many crazy stories.
- R. Pearl: Well give it a shot.

- L. Fitzharris: Yeah, I'll give it a good shot.
- L. Fitzharris: And also I think it's really important to note that medicine isn't progressing linearly. There's a lot of things that people used to believe in the past that, of course, we don't believe today and didn't even inform what we think today. There's a lot of different kinds of paradigms of the past that seem so strange to us.
- L. Fitzharris: One of my favorite stories that I like to tell people is that doctors in the medieval period actually used to taste urine, and they had this thing called to medieval urine wheel, and it had many different colors. So, they would diagnose you according to the color of your urine and they would also taste it. And they did this fun thing where they would also take the urine and they would cast your future using a divination bowl. I think that we should bring this back into medical practice. You go and you see your GP and then you get your future told by taking that urine and casting your future.
- R. Pearl: Strange as that sounds, we actually do that today in medicine. We don't exactly taste the urine, don't get me wrong. But we do smell it.
- L. Fitzharris: Oh really?
- R. Pearl: And some of the things like glucose has an aroma to it that is predictive of diabetes, as an example, or ammonia that's a product of our metabolism when our liver is not functioning well.
- L. Fitzharris: Oh that's interesting.
- R. Pearl: Practitioners, into almost the current time period actually have used the odor of the urine as a major diagnostic part and today we replace that with what we call a dipstick, a little piece of paper that we drop in that has chemicals on it but the same concept is there and it does foretell your future.
- L. Fitzharris: That's really interesting. I didn't think you were going to be able to make that one relevant. Actually, in the medieval period, doctors, sorry, not in the medieval period but in the 16th century and the 17th century, they were tasting the urine and they were able to diagnose diabetes as well because of the sweet taste. Obviously that smell, that you can still smell something, you say that indicates that diabetes is there or is onset, is apparently also there in the taste of the urine.
- R. Pearl: Absolutely. Yeah, that's what they're smelling for. The sweet odor versus the tasting odor and as I said, the ammonia which obviously a lot of household products have, is a very pungent smell that can be detected in the later stages. Until the introduction of penicillin in the 20th century, the early part, actually doctors did more negative things as a consequence of their intervention, as I'm sure you'll tell us very soon. Up until that point, really there was little that

healthcare could do that medicine could do, physicians could do, outside of some minor surgical pieces that I'm sure you'll tell us about soon, as well. Being able to smell ammonia, you could actually foretell to a patient, you're likely to die very soon.

L. Fitzharris: They used to actually call these doctors piss prophets. I don't know if you want to bring that back into it. Call yourself piss prophets.

R. Pearl: Well, we now know however, is the ideology and we can do things to minimize diabetes, the type II, the adult onset, and do things to protect our liver. Very specifically minimizing the alcohol intake which we consume.

R. Pearl: How about another story?

L. Fitzharris: Well I could tell you, I wrote this book called "The Butchering Art" which is all about Joseph Lister who is the father of antiseptic surgery and before Lister comes along, surgeons rarely washed their hands or their instruments. They carry with them a cadaverous smell of rotting flesh which they called, good old hospital stink. And actually, you wanted your surgeon to have as much blood on his apron as possible because it meant that he was very experienced. It's difficult for us to understand why they weren't washing their hands or why they weren't kind of adhering to what we would consider common sense hygiene but you have to remember that until germs were understood and that's where Lister comes into it. Before, there was this concept of germ theory, surgeons don't wash their hands or their instruments because they're just going to get dirty with the next patient.

L. Fitzharris: There's probably people who are listening and whenever I go around the world talking about this book, inevitably there's a question about a guy named Semmelweis. Semmelweis was an Austrian physician, or he was a physician working in Austria, he put together this idea that if you wash your hands, mortality rates go down on the wards. This is in the mid-19th century.

L. Fitzharris: His colleagues thought he was crazy and they called him the hand washer. He actually ended up being ridiculed and he ended up being put into an insane asylum and he dies this kind of isolated, estranged death. Only later was sort of vindicated. The difference though between Semmelweis and Joseph Lister who ultimately comes up with antiseptics is that Lister is championing germ theory and until we understand that germs exist, there's no way to systematically implement any kind of change.

L. Fitzharris: As I understand it, hand washing is still a problem in hospitals today.

R. Pearl: Absolutely. One in three times, when physicians go from one inpatient room to another, they don't wash their hands and the particular bacterium which is *C. difficile*, *Clostridioides difficile*, only travels on hands. Unlike measles virus that goes through the air, this one has to be carried and somehow physicians see

themselves as being sterile in this environment. I think similar, wasn't there an idea that somehow this air would waft through into the hospitals, carrying some kind of vector of some sort that was impacting patients back in the Victorian era?

L. Fitzharris: That's right. It was called miasma theory. It actually dates back even further from there. It's this idea that miasma were seen to be little particles in the air. They were associated with bad smells and they caused disease. In fact, the plague mask, which is really iconic, to conjure up that image for people who don't know what the plague mask looks like, it's a beaked mask and so you see people wearing this in Venice during the carnival but it's this big beaked mask, it looks like a bird's beak and it was invented in the 17th century by a physician to protect himself from bubonic plague because he felt that it would protect him from the miasma or the bad smells that were causing the plague.

L. Fitzharris: What he would do is he would wear this frightening looking bird mask and he would stuff sweet smelling herbs in the bottom of it to protect himself from those awful smells. You get this idea that these bad odors are creating disease, which kind of makes sense a little bit. If you think about it logically because of course in Victorian London, if you fast forward, a lot of the slums would have smelled awful and of course the slums would have been riddled with disease. There was this association that disease was somehow attached to these smells in the air.

L. Fitzharris: But it's not really, there's a few things that happened during the Victorian period that start to call into question miasma theory. For instance, the cholera outbreak in London and there's a guy named John Snow who maps the cholera epidemic to a water pump. Now we know it's not the smells in the air, it's actually attached to something in the water coming out of this pump.

L. Fitzharris: And then you get Louis Pasteur coming up with his germ theory and Joseph Lister is ultimately the medical person to take that theory and apply it to medicine.

L. Fitzharris: I like to say that The Butchering Art is a love story between science and medicine because it's the first time ever that a scientific principle is applied to medical practice. But yes, the idea that bad smells were linked to disease. Are you saying that in hospitals today, doctors feel that they don't have to wash their hands between patients because it's already a sterile environment?

R. Pearl: No, it's a fascinating concept and why I think having a medical historian like yourself on this show is so important. Our minds tell us things that are not true but once we've been told that, we continue to hold onto it. You have physicians who are in the context of being late for their office or having extra patients to see who are simply in a rush. And they tell themselves, "Well, I didn't actually touch the wound for very long." It's like dropping the bread on the floor, the five second rule. They tell themselves things to justify it even though intellectually they know it. That's what a little bit different now than in the past as you say.

- R. Pearl: Before the science, no one quite knew it although as you've also pointed out, both Semmelweis, who was able to demonstrate in his clinical work the far lower incidence of infection in women delivering birth, for the physicians who cleaned their hands prior to doing the deliveries and similar Lister who had a similar type of positive intervention. That becomes the dismissed because it's inconvenient and that's the biggest piece that sits in play.
- L. Fitzharris: Yeah, and I think with Lister, when he comes out with this idea, there are sort of two things that are happening. Firstly, he's this young guy and he's going around and telling these physicians, these older physicians and surgeons, that there are these invisible little creatures and they exist and I can see them with this strange instrument called a microscope and you have to believe me that is what's killing your patients.
- L. Fitzharris: The microscope is seen as very suspect in medicine at this time or at the very least, it's a completely useless instrument because it doesn't, whatever surgeons are seeing through the microscope isn't actually informing whatever they're going to do with their therapy. The microscope is sort of really dismissed. But Lister, for various reasons, learned how to use the microscope as a young boy and he brings it to medical school. He's very well placed to be open to the idea of germ theory when he reads about it in Louis Pasteur's work.
- L. Fitzharris: Again, invisible little creatures, they're killing your patients. It all seems very, it's a leap of faith and I think the other part of that is that he was essentially telling these older surgeons that what they had been doing all along was actually killing their patients. There are some funny stories, I'll tell you some stories in a minute that are almost verging on comical about the way that these surgeons would operate. But as comical as they were, they were in the business of saving lives and it would have been very frustrating to go into an operating theater and to lose your patient time and again. And so for Lister to come along and say, "Actually you've been contributing to that problem." I think that was a hard pill for them to swallow.
- R. Pearl: You're absolutely right. That's the theme of why medicine advances slowly. It's still 17 years between a really great idea coming along and it happening. I think of Barry Marshall. Here's a pathologist in the 1990s, we're not talking about the Victorian era, we're talking about very much the modern era, who sees these bacteria, very similar to under the microscope, he's seeing them around the ulcers in the stomach and the duodenum. He publishes an article as an 80 or 90% association, proven beyond any doubt the cause of ulcers is not stress, it's not spicy food, it's actually these bacterium and no one believes him. No one follows it because the surgical procedure, the gastrectomy paid very well and prescribing antibiotics did not pay particularly well and so they couldn't see this happening until 15 years later when he wins the Nobel prize in medicine, almost never given to a physician, that finally people take it seriously. It's exactly the same thing. There's no way these little bacteria, we now have a name for it, can be the etiology of disease.

- L. Fitzharris: That's an interesting story too because I remember learning about that and when I was an undergrad, that would have been in the early 2000s, I cited this as an example of exactly what you're talking about in a psychology class but it was still such a new discovery really and it hadn't really trickled into sort of lay society or public knowledge I guess, as much, and my psych professor thought I was insane because I said, "Ulcers aren't caused by stress. This is an example of this." And he just laughed it off.
- L. Fitzharris: It takes even longer to change the public's opinion about these things. One example of this might be bloodletting. In the past, bloodletting was seen as a legitimate therapeutic method. People believed in this thing called humoral theory. They believed they had four humors and when the humors got imbalanced in the body, it caused sickness. Especially if you started to produce too much blood.
- L. Fitzharris: Bloodletting could be done as sort of a maintenance checkup. You might do it the same way that you get your teeth cleaned. You would go to your barber surgeon. Your barber surgeon, in fact the barber's pole, which probably a lot of people listening know this story but the barber's pole is red and white because your barber used to blood let. That pole would be put outside his shop and he would tie his bloody rags around it to indicate that he blood-lets and they would whip around this pole creating the red and white stripes that we know today.
- L. Fitzharris: Bloodletting was done by your physician, your surgeon, your barber and it was very much seen as a treatment for sickness. George Washington actually died as a result of being bled too much. He had an upper respiratory illness and he probably would have died but he was bled so much that they think that that hastened his death really in the end.
- L. Fitzharris: This was done all the time even though it was dangerous and it clearly wasn't working. When it starts to get phased out, you're looking at the late 19th century, this starts to be replaced by germ theory and different ideas of sickness and health, but people still would go to their doctor and request to be blood let and there is this fascinating photo from the Wellcome collection in London. That's Wellcome with two L's. It's an amazing medical history collection here in the UK and it's a picture from 1920 of an older couple being bled. That's 1920.
- L. Fitzharris: I like to think of this almost as people come into the doctor's office today and they request antibiotics regardless of what they have, don't they?
- R. Pearl: Absolutely. It's a great analogy. Despite the fact that one third of the time it's not indicated and often the consequences of an allergic reaction and increasingly, actually, a worldwide epidemic of resistance could threaten millions of lives for absolutely no gain.
- L. Fitzharris: Yeah, and so it takes a while not even just for medicine to change but for the public opinion about these things to change. You certainly see that in Lister's

story. A lot of the things that are happening in the Victorian period regarding surgery, it's very scary. You don't want to go to your surgeon. It's sort of a last-ditch approach. You do get these kinds of examples of really extreme cases.

- L. Fitzharris: For instance, there's a guy who has this enormous face tumor and it's been growing for the past eight years. His name's Robert Penman and this is in 1828. He goes to this very famous surgeon in London named Robert Liston. Robert Liston at this time is known as the fastest knife in the West End. He could hold you down with his left arm and he could take your leg off in under four minutes which is exactly what you want in a preanesthetic era.
- L. Fitzharris: Robert Liston in 1828 was very famous because he had just recently removed a 45 pound scrotal tumor in about two minutes. That's not four to five pounds, it's 45 pounds, it was enormous.
- L. Fitzharris: Mr. Penman decides, this is my guy. I'm going to go to Robert Liston and have him remove this huge tumor on his face. But Robert Liston looks at this and he instantly refuses to do it which is tantamount to a death sentence at this time. But Penman doesn't give up, he goes up to Scotland to a man named James Syme. Syme is a very important person in the book "The Butchering Art" because he becomes Joseph Lister's father-in-law.
- L. Fitzharris: Anyway, Syme agrees to do this and he sits Penman up in a chair because before anesthesia, patients were sat in chairs so that their feet would dangle so that they couldn't push off and brace against the knife. He's restrained and for 24 minutes, this tumor is cut from his face bit by bit and dropped into a bucket at his feet. When I wrote this story, I cringed. I can't even get my teeth cleaned without any kind of, some kind of anesthetic so it's so hard for us to imagine back then.
- L. Fitzharris: People really didn't go to their surgeon unless they absolutely needed to and if they were sort of knocking on death's door. It takes a long time too for people's image of the surgeon to change. The surgeon after the dawn of anesthesia of course, becomes something different. He's no longer having to work against the clock. He can slow his process down.
- L. Fitzharris: And then when Lister comes along with antiseptics, that process slows way down because suddenly there's a whole method. Everything has to be sterilized and cleaned. Everything's very slow and thoughtful unlike the preanesthetic days when speed was king.
- R. Pearl: Based on your looking at history, do you have a hypothesis about why it takes physicians and the medical profession so long and why it takes patients and society even longer to embrace new ideas and change in healthcare?
- L. Fitzharris: That's an interesting question. There's a very famous historian of science who's now dead but he really shaped my field and my discipline. His name's Thomas

Coon and he wrote a book which he talks about this very thing. He calls them paradigm shifts. What we see with Lister and germ theory's a paradigm shift. Suddenly everything changes and the way that we understand the body is completely different from the last paradigm.

L. Fitzharris: In that book, it's essentially what he's saying is that science and medicine are conservative, deeply conservative and that doctors, practitioners, scientists, that they solve problems according to the rules of a puzzle. But anything that sort of shatters the existing rules is very difficult to grasp. It's okay to be innovative but only within the set rules that are in front of you and it really takes someone almost from the outside or someone who has a very sort of creative and analytical brain to come in and see something that no one else is seeing and to shatter that paradigm.

L. Fitzharris: But it does take a while to convince people because again, it's hard to accept something so radically out of your comfort zone. I think that what we're seeing right now with medicine today with the antibiotic resistance, where something's probably going to happen in the future that is again going to shift the paradigm and shift our understanding of how we treat illness. But how the medical community and how the public are going to react to that, nobody knows.

R. Pearl: There are two exceptions that I can think of to the timeframe you've describe. One you talk about in your book in great detail which is the introduction of ether and the other one is the introduction of erectile dysfunction medication into the U.S. Urologic practice. What is it about those two that are so different than all the other ones that you've described?

L. Fitzharris: That's a really good question. "The Butchering Art" actually opens as you say, with the historical operation under ether. I wanted to start there because I think that if anybody has really thought about the history of medicine, they tend to think of that moment because it is such a big moment in the history of medicine. But actually surgery becomes much more dangerous after the advent of anesthesia because the surgeon is more willing to pick up the knife. He's more willing to go deeper in the body but he doesn't yet understand germs. These operations become nothing more than slow moving executions.

L. Fitzharris: I started this book with the first ever operation under ether in Britain in 1846, and the great Robert Liston, who was the fastest knife in the West End, did this operation. What was so amazing about that moment is that a 17-year-old Joseph Lister was in the audience that day. It was this sort of brilliant moment in the history of medicine.

L. Fitzharris: But with anesthesia, I don't know if it's necessarily a paradigm shift. I guess I would need to think about this. Is it a paradigm shift as much as it is something that eases and makes the surgery easier to do? If you see what I mean. It's not necessarily changing fundamentally the knowledge about the body or about health or about disease in the way that Lister's was with the application of germ

theory. We're looking more at something that happens that is making the surgeon's job easier.

L. Fitzharris: The other thing is that you're absolutely right, when ether is first discovered, it just kind of spreads like wildfire. It's discovered in America and they call it the Yankee Dodge over here in Britain. From the moment that is experimented with in America, to the moment it is first trialed in Britain, I think it's just a matter of days or maybe a week. There wasn't that much regulation at that time, so doctors are experimenting with it. They're also sniffing ether themselves. They're drinking it in something called ether cocktails. There's ether maniacs, they call themselves in London. The medical students are experimenting with this drug. They're having ethereal experiences. It's this kind of crazy, hedonistic time in medicine where everybody's trying all these kinds of newly discovered drugs.

L. Fitzharris: I don't know what you think about that but I think that anesthesia isn't quite a paradigm shift as much as it is something that comes about that helps the surgeon operate better but doesn't fundamentally change the way he understands the body and disease.

R. Pearl: To me, it's the fact that the things that we can see with our own eyes, we tend to accept as truths but the things that are, as you say, are theoretical applications, things that require physicians to practice differently, in a way that assumes that they have not been doing it well in the past, those are the ones that I've observed the difficulty in getting people to accept. As I say it takes about 17 years.

R. Pearl: Let me move onto another question because you did such a great job in the book of talking about what's now called the social determinants of health. The fact that people in certain living conditions, certain living circumstances often socioeconomic in origin, experience disease at a far higher rate and greater intensity. This sounds to me like something that has been there historically. Do you have thoughts over a much longer time period?

L. Fitzharris: Yeah, that's a great question. Hospitals at this time were very much places for the poor. If you're wealthy or if you're middle class you were treated at home. You had your operation on your own dining room table or your kitchen table. And it was actually seen to be a lot safer because of course if you went into these hospitals, they were crawling with all kinds of diseases.

L. Fitzharris: In fact, the situation in these early Victorian hospitals was so bad that it was seriously suggested that the only way to control the rates of infection was to burn the hospitals down from time to time and start anew, which I absolutely love the kind of image of just, let's just burn the hospital down. I'm actually trying to get this book made into a movie and I've been out in Hollywood trying to convince Hollywood that this Quaker surgeon, Joseph Lister, deserves this cinematic release but there are some incredible moments and incredible suggestions in the Victorian period about how to handle these problems.

- L. Fitzharris: But you're right to say that a lot science and a lot of medicine advances on the backs of the poor at this time because they are the ones in these hospitals. A lot of times when they die in these hospitals, their bodies go unclaimed because it's very expensive to bury a person at this time so they're the ones who end up on that dissection table. Or they end up on dissection table because their bodies are easily stolen from graveyards at this time.
- L. Fitzharris: The other part of that is, too, that of course in an industrializing city like London, there was a lot of accidents with workers and so these people also end up in the hospital. When Lister starts to experiment with carbolic acid, which is what he uses as an antiseptic, he's not only able to save lives but he's able to save people's limbs and so therefore save their livelihood because a lot of these people would have had to have some kind of mobility in order to work. This is huge step forward for them.
- L. Fitzharris: But yes, you do see, I wouldn't go so far as to say in Victorian London that the wealthier classes were susceptible to things like syphilis. You see this in all the way across the board in certain kinds of injuries, in certain kinds of diseases but certainly the poorer classes were experiencing this at a higher rate.
- R. Pearl: Interestingly, one of the piece I'm about to write for Forbes is about the question of whether people should be allowed to sell organs. I think it's been one that's been debated in great detail around this notion of whether you're forcing people from a socioeconomic standpoint to receive more problematic and potentially dangerous care. I'm going to point out some reasons in the piece why that's no longer true but it's going to be the same question that has existed for a long time, which is how does medicine treat issues of social and economic differences? Ones that are certainly becoming bigger factors in the United States today?
- L. Fitzharris: You ask the hard questions. It's like medicine hardball right here. Actually, when you said that, for people who are listening, I have this Chicago accent but I've lived in the UK now for 15 years so I'm coming from a different viewpoint to some extent where we have socialized medicine over here.
- L. Fitzharris: One of the things that that reminded me of is that UK has very low rates of organ donation. I think some of the lowest rates in Europe. They've been trying to fix this situation and so for a while they discussed an incentive where if you donated your loved one's organs and body, they would, the government would pay for funeral expenses. It's kind of a similar thing because of course, people who come lower incomes are going to be more vulnerable to that and we needed to ask ourselves how we felt about that.
- L. Fitzharris: Ultimately that the government decided to against that measure. Now I think they're looking at something called an opt-out organ donation list. That means that you're automatically enrolled unless you opt out. And they have that in Spain and some other European countries and it works very well.

L. Fitzharris: But yeah, how do we address those issues going forward? I think that's always going to be a struggle. There's some amazing books out there that really look at the socioeconomic diversity between different kinds of patients and how they've helped medicine progress. I'm thinking the "Immortal Life of Henrietta Lacks," which really draws upon those distinctions.

L. Fitzharris: I have no solution though. I don't know, what do you think?

R. Pearl: Well, again, I think we've worried about it and it should be worried about but I think that we sometimes come up with ideas that actually harm people as a consequence. The one you've just discussed is a great example, which is that if people need help with funeral expenses, and the person's already died, so it's not as though in some way you're compromising someone's life, why not consider that a social good? Particularly because organ transplantation is a better fit for the recipient. It's a better fit for the payer, in England being the government because it's far less expensive than dialysis and here for the donor family it sits in place.

R. Pearl: Let me move onto another question if I could though, Lindsey. Which is, I'm very fascinated by the actual pioneers themselves and this is what you do for your livelihood, tremendous amount of PhD research, academic research. Is there a common set of insights you have about the various pioneers you've studied across medical history's past that differentiate them from the individuals who resisted it? Or is it just somewhat random based upon your reading, writing and experience?

L. Fitzharris: That's such an interesting question. I always think that it's a combination of many things. It's the person, of course. They're able to for whatever reason, think outside the box. They're able to withstand the criticism. They believe passionately about whatever they're doing enough to follow through with the change. You have sort of that kind of personality.

L. Fitzharris: But also, it's of course the times that they're born into. If you take Lister, again as an example, would he have been able to do what he did 50 years earlier? Well of course not because Pasteur wouldn't have existed. You have to be born into the right time, the moment. Lister is very much a man thrust into his own fate and one of my favorite movie moments, which is fictional movie moment, but it's from the movie Lincoln. Lincoln is sitting with this boy who's sending a telegraph on his behalf and he says to the boy, "Do you think that we're fitted for the times?" The boy answers, "Well I don't know about that but if anybody was fitted for the times it would be you."

L. Fitzharris: I think that was a great moment in that Spielberg movie because, of course, when we look at Abraham Lincoln you think, thank goodness it was him because if it had been X or Y or Z, how different would that outcome have been? We always tend to do that when we look back in the past. We think, well that was the right person at the right time.

- L. Fitzharris: I think it's a combination of times that they're born into. Lister has an incredible background with the microscope as I mentioned. His father used the microscope. He was a Quaker so he was scientifically minded because that was the only form of entertainment they were able to partake in that time. There's so many factors that sort of play into it that he is the right person at that right time.
- L. Fitzharris: It's funny though because I did my PhD. at Oxford and my tutor, we're taught in a tutorial system, which means that every week you have a primary tutorial and your tutor will give you a list of 30 books and you go and read those books. You don't really read all of them but it guides your reading for the week and then you write a 2,000-word essay and then at the end of that week you have a discussion with your tutor about the question that was assigned. It's a really different kind of method of education.
- L. Fitzharris: My tutor was talking about this very idea that if we could attract more creative-minded people into science, into the sciences, into medicine, how would it change the discipline? And then of course the question is, if someone is very artistic or very creative, would they have the analytical skills required to be successful in science and medicine?
- L. Fitzharris: I think that the people who are quote, the pioneers, they think fundamentally differently. Maybe they're a good combination of both analytical and creative and again, they can think outside the box.
- R. Pearl: I know your research now is focusing on a physician that I know since I'm a plastic surgeon too, named Sir Harold Gillies.
- L. Fitzharris: That's right.
- R. Pearl: Want to put him into the context that you just described?
- L. Fitzharris: Harold Gillies is so, this book, I actually was intending to write this as my third book but for various reasons my publisher wanted me to write it as my second because they got excited when they heard his story.
- L. Fitzharris: Harold Gillies is this eccentric surgeon who is today known by some as the father of modern plastic surgery and he's helping to rebuild soldiers' faces during World War I and it's an incredible thing that he does because this is a time when losing a limb makes you a hero but losing your face makes you a monster. What he's able to do is give these men back their identity, which is really, really important of course.
- L. Fitzharris: He doesn't, there's not precedence for this. He's really just teaching himself. He builds this teams of artists, dentists, all kinds of practitioners around him and there's a lot of hard lessons he learns along the way.

L. Fitzharris: Yeah, he is absolutely, even much more so than Lister, sort of the creative meets the science. He even enrolls in art classes during the war in order to teach himself how to draw so that he could keep pictorial record what he's doing. He's just incredibly talented. It was said that anything that he kind of set his mind to, he was able to do. He was a great sportsman, a great musician, a good, capable artist certainly. I'm really sort of delighting in telling these stories. It's very emotionally different than telling Lister's story, which happened so long ago that we kind of put a barrier between ourselves.

L. Fitzharris: But when you're reading these stories of these men whose faces were blown off in war and you're looking at their photos, it's just, it's really quite harrowing and quite depressing but it is an incredible story. There are some amazing characters, as well, in there. There's a dentist who had this Rolls Royce, who's very wealthy and he would drive this Rolls Royce right up to the front and it would get hit by bullets and he taught a lot of what Gillies ultimately ended up knowing about dentistry. It's a really fun story. I'm still really deep into the research of it but I can't wait to tell people more about it.

R. Pearl: The other thing that came from my mind was the fact that 200,000 people die every year from medical error and they can't, the physicians who are responsible, can't see it. Or they don't see it. Whether they could or not. Some of it is the hand washing, some of it is the failure to follow the best approaches to minimize infection when putting in central lines. A lot of it is keeping in things like urinary catheters which are more convenient for the medical team but more dangerous to the patient. You can go on down the list of opportunities. In some ways to me, it reminds me of some of these historical stories. Where else can we learn? If we're going to try to solve this problem. By the way, 1998 the Institute of Medicine comes out with this plane crash every day, 200,000 people dying and Johns Hopkins repeats the study last year and the numbers haven't changed. Two decades later, we're still harming as many people from our unwillingness to do the things that seem to make sense. Where do you see that historically?

L. Fitzharris: Of course it's really difficult to know exactly how many people we are harming in the past because medical statistics don't really start to take off until the sort of mid to late 19th century. In fact Lister is again, I'm always banging on about Lister but he is one of the pioneers in sort of what we could call the scientific method because he's showing his experiments. He's recording his failures as much as he's recording his successes which was unusual at a time when doctors and surgeons wrote boastful accounts of their practices. In fact, surgeons got into debates and disputes and they would actually get into sword fights and duels over these things. It was very different of course, to how we resolve our disputes today. Hopefully, people aren't having duels on the wards.

L. Fitzharris: It is hard to know exactly how many people were being harmed because of various practices and of course, keep in mind that it's not even just people that were being harmed by not adhering to certain guidelines that were known at the time but also just because they were harming people because they didn't

understand basic things that we understand today. I always ask people, what will historians say about medicine 50 to a 100 years to 200 years because of course what we know today isn't what we're going to know tomorrow.

L. Fitzharris: I think that we today are in the best situation we can possibly be in, in the sense that we are much more connected. There's a system in place that never was in place in the 19th century so hospitals were sort of autonomous machines what didn't have any real guidelines or regulations. And that's all very different today. We are in a position where we can get together as a global community and share our data and hopefully try to educate and train our medical practitioners to make it safer.

L. Fitzharris: But will it ever be a 100% safe? No, obviously not.

R. Pearl: Let me push you a little further by asking you to talk about some of the, I'll call it the quackery of going around in wagons and selling various liquids and other treatments that didn't provide much value to the patient.

L. Fitzharris: I love the quacks. The term quack, we're not quite sure where that term comes from but there's a couple of theories and I think the one that's probably most valid is that quacks were itinerant medical practitioners. As you say, they would go from village to village selling different things, offering different services. And you have to remember that the majority of people in earlier periods, especially when you're looking at the 17th and 18th centuries, they didn't have money to see a physician or they didn't have money to see a surgeon.

L. Fitzharris: The surgeons and physicians were very different, as well. Surgeons were seen as craftsmen, men who worked with their hands and not therefore as respected as a physician who worked with his mind.

L. Fitzharris: These itinerant traveling practitioners filled a gap in care. As did the barber surgeon. More people were likely to have interactions with the quacks or with the barber surgeon than they were with the surgeon or with the physician. Just purely due to income level. The quacks could offer some services. They pulled teeth, they did things like that. They picked lice out of the hair. There were some beneficial things they could do but yes, one of the things that they loved to do was to sell these sort of elixirs that claimed to cure everything and they were very famous for their potions.

L. Fitzharris: This idea, this word quack, they think comes from this idea that these travelers when they would come into the town, they had these little mouthpieces that made a sound to announce that they had come. It kind of made this quacking sound. That's one of the theories that this kind of term quack comes about.

L. Fitzharris: I remind people again that today we have similar practices. I look at the diet industry. You just have to go into one of those diet stores, what do you call them in America, it's GNS or something. That's like, it's all these sort of cure-alls

that are going to make you thin or make your hair look better and nothing that's really scientifically proven. We have our own form of quackery today.

- R. Pearl: I think it's a very common, I'm a little loathe to use the word quackery because you're speaking about some very respected physicians and institutions but I think your idea and I never thought about 'til this moment of filling a gap. A gap today is one of being able to admit that there's little we can do, believe or not, 30% of what physicians do in the United States today, according to the New England Journal of Medicine, adds no value. A good example is we inject this viscoelastic stuff into people's knees when they have arthritic pain because we don't really know how to take care of the problem. It adds no value. A lot of cost sitting in place. And the newest one is stem cells. Again, no evidence yet that it works. We do these things because the ability of the physician today to say, "There's nothing we can do for you," is not in the lexicon and certainly not in the culture of American medicine.
- L. Fitzharris: It's very difficult, I think, anything that deals with chronic pain. I have hyper-mobility, I have constant problems with my joints and there's always people that are offering advice. You should go see the guy down the road that's got the magical gems that can help you. Honestly, these are things that are suggested and I've never seen the magical wand guy needless to say. But it is, it's that filling of the gap. When western medicine can't do anything, people tend to turn to alternatives and that's exactly what's happening in the past as well.
- L. Fitzharris: But it's also quackery in the 17th, 18th and certainly the 19th centuries, coincides with this explosion of commercialization, as well. Printing becomes cheaper and as that becomes cheaper, it's easier to make labels to put onto these jars. It becomes easier to make elixirs and to sell them to larger portions of society. Who's to say in the past that the quacks weren't doing some good to some extent, at least for mental relief of people that were sick who couldn't afford any kind of mainstream medicine at the time?
- R. Pearl: And there's a huge amount of data on giving people something that adds no value, the so-called placebo effect in a very supportive, sympathetic way and actually the data says that it's as good as many, many, many of the things that we accomplish that we believe. Not the ones that add no value but we believe add significant value. It's not certainly clear that the placebo effect, well done.
- R. Pearl: In the United States today, we're seeing a resurgence of measles, a disease that we thought was completely wiped out. So far, a lot of people have suffered from it, no one yet has died. Someone will die. It's a very contagious, very dangerous disease. My father's sister actually died as a consequence of measles many years ago in the past. What can we learn from history about this notion of vaccination and anti-vaccination?
- L. Fitzharris: I'm really glad that you asked me that because interestingly a couple days ago it was the 270th birthday of a man named Edward Jenner who came up with the first ever vaccination for smallpox. There's a wonderful museum in the UK called

the Jenner House. It was actually Edward Jenner's house and it's very important historical site. They wrote me and they said, "You know, we're seeing National Pizza Day trending on Twitter right now, would you mind sharing a story about Edward Jenner, we can see if we can get some attention?"

L. Fitzharris: And actually, the thread that I did has just blown up on Twitter and I've gotten a lot of people to share it. There's a lot of people responding to it. There are some people who are responding in it in a negative way. As you said, the anti-vaxxers. But Jenner, he comes up with this smallpox vaccination at a time of course when a lot of people were dying of smallpox. It was an incredibly dangerous virus. We certainly don't want to see it come back. It was eradicated in 1980 from the world. We're no longer vaccinated against it unless you're a troop that's deployed to a certain part of the world. The reason that they're doing that now is that they're afraid that smallpox could be weaponized in a laboratory, which would be a nightmare scenario.

L. Fitzharris: It's Jenner who comes up with the first ever vaccination and Jenner himself deals with anti-vaxxer movements in the 18th and early 19th centuries. In fact, one of the biggest anti-vaxxer marches happened in the early 19th century when all of these people descended upon a town called Leicester here in the UK and they burned effigies of Jenner and a lot of parents were thrown in jail for not vaccinating their children.

L. Fitzharris: It's something, the fears around vaccination back then was that their children were going to turn into cows because Jenner was using cowpox in order to confer immunity for smallpox. And he was doing this very successfully. But people were afraid that the animal matter was somehow going to contaminate their children and so you get all these cartoons of people sort of turning into cows or half cows.

L. Fitzharris: The fear over vaccination and the misunderstanding of vaccination is very old, although the reasons why people fear it today are different from the reasons why people feared them in the past. But I think that the problem especially in the United States is, that is not a freedom of choice issue, this is a public health issue. When you don't vaccinate your children, you are potentially harming a larger population and that's the part that people, a lot of people, don't seem to understand is the concept of herd immunity.

L. Fitzharris: It's very disheartening to see this happening around the world and whenever I post things on my Instagram or Twitter accounts, I get more and more anti-vaxxer arguments on my page. Some of these concerns from anti-vaxxers that vaccinations, we should strive for them of course, to always be safer. We should scrutinize what goes into vaccines but the idea that there is somehow doing more harm than good, there's no scientific evidence to suggest this.

L. Fitzharris: I don't know how we're going to stop this trend but it is very frightening and I think that we're going to see the return of very old diseases, as you say, measles. And as a medical historian, I can't tell people enough, how many

diaries and letters I read of parents from the early 19th century who lost children to these diseases that we've eradicated today. And how devastating that was to constantly be losing children. In childhood, it was a very dangerous time in these earlier periods.

- L. Fitzharris: I hope that we're not going to see a return of that but I don't know how the message is going to out there because it seems that this is a movement that's growing and growing.
- J. Corr: One of the things I'm very interested in is if you look at a lot of the things that are commonly held folk beliefs or old wives tales, such as the blood of an execution victim having magical properties or things like that are, or the magical properties of dried mummy as medicine. What are some of things that are from old wives tales that once new information comes out, how do people convince a gullible public against kind of long term commonly held beliefs?
- L. Fitzharris: Yeah, and I think one of the things I love to talk about on my YouTube or on social media is this thing called corpse medicine. There's this idea that certain, consuming parts of the body could cure a person of certain ailments. You do get for instance, people who have epilepsy, lining up at the scaffold of someone who's going to lose their head because this idea that if they drink the blood of a life cut short, it was very powerful and it would cure them of this disease or this condition that was very misunderstood at the time. Very scary as well because it was associated with things like witchcraft. People were very desperate to cure themselves of epilepsy.
- L. Fitzharris: You get, as you say, touching the hand of an executed criminal could bestow long life. And these kinds of folklores. Corpse medicine isn't just the purview of sort of white witches and the public. There are actual medical practitioners who partake in these kinds of different cures and stuff. I always remind everybody that today we practice a form of corpse medicine with organ transplantation. We're not consuming the body but we are taking parts of the dead body into our own to cure us.
- L. Fitzharris: Again, I think it goes back to what Robert and I were talking about, it takes a while to break down, especially something that is connected with superstitions or something that just sort of becomes part of folklore, especially when dealing with executed criminals. That takes a long time. At this time in the 18th and 19th century, the medical community isn't that strong in the sense that it is today. It's not as respected and so these kinds of beliefs persist for quite a long time. Well into the 20th century.
- J. Corr: What are some of the worst and most interesting cases of quackery, of medical quackery that you've seen throughout history? And again, the story of Special K is absolutely fascinating.
- L. Fitzharris: Oh my God. You mean Kellogg's?

J. Corr: Yeah, yeah.

L. Fitzharris: Oh gosh, I know Kellogg's.

J. Corr: Special K. Was it Special K or cornflakes?

L. Fitzharris: It's Kellogg's Cornflakes. There's going to undoubtedly be people out there that know this story but it's definitely worth repeating. In the 19th century, medical practitioners became obsessed with masturbation or preventing masturbation. They felt that it was dangerous to the patient and that the patient was, you get all these sort of caricatures of the patient languishing on the couch and he's masturbated too much and his life force is gone. Dr. Kellogg was one of these doctors who believed that and he had this sanatorium in, I believe it was in Michigan and he wanted to prevent his patients from masturbating because it was detrimental to their health.

L. Fitzharris: He thought that a diet low in taste and high in fiber would prevent or dampen the fire in their belly and prevent them from masturbating and so he creates this thing that eventually becomes known as Kellogg's Cornflakes. Reverend Graham also creates something which later becomes the Graham Cracker. Everybody listening to that, I'm glad that I can ruin those two things for you. You can think about that next time you pour yourself a bowl of Kellogg's Cornflakes.

L. Fitzharris: I think that when we're looking at, to go back to your original question, quackery in the past, as a medical historian, I'm very hesitant to call things quackery just because they don't work according to how we understand things today. Of course, a lot of things that for instance, mainstream medicine was doing in Lister's time, would've been respected and practiced quite frequently by the medical community but today have been disproven and so it's difficult to call it quackery because again, going back to what will people say of us in 200 years?

L. Fitzharris: But when you look at the anti-masturbation stuff, you can't help but chuckle and kind of think that that was a bit of quackery right there. And Kellogg was just absolutely insane about it. Some of his practices were very harmful, as well. That was unfortunate. It wasn't just the Kellogg's Cornflakes that he was feeding to people. He was doing some other kind of terrible stuff on the side.

R. Pearl: It would be nice if you could tell the listeners a bit more about your view historically of the intersection of religion and ethics or at least perceived ethics as you're describing a belief that something like masturbation is harmful, which obviously comes out of a social realm. Some of the other things related to abortion, as an example. This intersection of religion, values, ethics, morals and medicine which is theoretically a purely scientific endeavor. How do you see that across time?

- L. Fitzharris: Certainly in earlier periods you do have that intersection and religion informing medicine more fiercely especially when you look back at sort of forbidding for instance, dissection. Only under certain circumstances. Although the idea that the church forbid dissections entirely is a bit of a myth because under certain and right circumstances dissection showed that God's miracle, like if you opened up the body, that this was a miracle and God was behind it.
- L. Fitzharris: In some cases, you even get stories of dissections being performed in the Vatican but these are very ceremonial dissections. They weren't done for educational purposes. But certainly you get that religion informing and guiding medicine for various periods. And even with Lister, his Quaker beliefs guide him in the sense that he feels a duty to humanity and you see this a lot in my book where he actually has a mental breakdown and he leaves medical school at one point and he eventually returns to it. Some of that is pressure from his family who believes that he should return. But there's also that sense of duty that comes from his Quaker background.
- L. Fitzharris: That's not necessarily a bad thing but yeah, as you say, that that still continues, especially when you look at things like abortion and some misinformation around various procedures that we do. But it's one of those, it's an impossible question to answer in such a short time.
- J. Corr: Thank you again Lindsey. Next month, Kevin Pho will be our final guest of season two. He's a board certified internal physician and co-author of the book, "Establishing, Managing and Protecting Your Online Reputation: A Social Media Guide For Physicians and Medical Practices." He's best known as the founder and editor of KevinMD, a website aimed at medical professionals with more than a 150,000 subscribers.
- J. Corr: Our conversation will focus on the role that social and digital media can play in improving American healthcare. We can't wait to learn from his experiences and share his expertise with you.
- J. Corr: Robbie, as we predicted, Lindsey's stories were both engaging and educational. What are some of the key points that stood out to you in today's episode?
- R. Pearl: American healthcare, despite all the advances and technology and science, continues to resemble the Victorian era in so many ways. Too many physicians don't wash their hands between hospitalized patients and doctors. And they don't view themselves accountable when patients develop life-threatening infections as a result. As a profession, we're slow to change medical practice, particularly when positive changes are likely to have a negative impact on the income or lifestyle of the doctor. We continue to undervalue the power of social determinants of health and despite the importance of evidence based medicine, surgeons continue to perform procedures that add no value and can result in death. Eerily similar to the days of bloodletting in the past.

- R. Pearl: I'm hopeful that our listeners, both those providing and receiving medical care, will learn from these powerful lessons and that we all will make better choices in the future.
- J. Corr: Now let's turn to some listener feedback. We asked you for your ideas on how to fix American healthcare and we've received hundreds of responses on [robertpearlmd.com](http://robertpearlmd.com). Today we'll hear from listeners who wrote in about opportunities to improve mental health services.
- J. Corr: Dr. Danielle Armas writes that the future of American healthcare is dependent on access to psychiatric care, counseling services and primary care. She calls for the destigmatization of mental health conditions and mental healthcare.
- J. Corr: Kristin Steurele, MD, told us that our nation should quote, stop waiting until people have true crises of mental health and that we should start addressing basic anxiety, depression and adjustment reactions in youth and young adults. She says, "We must teach resilience and use validated non-prescription approaches to mental health early and often."
- J. Corr: Finally, Heidi Creighton recommends integrating mental healthcare into primary healthcare and pediatrics. She says both forms of healthcare offer a cost-efficient and preventative approach to healthcare overall.
- J. Corr: Robbie, what do you think of our listeners' feedback?
- R. Pearl: I concur. We need to do a better job of integrating mental health services with the rest of medical practice. More and more, researchers are recognizing the impact of mental health on clinical outcomes, chronic disease and overall health and life expectancy. When we fail to address the patient's psychological needs, we are at risk of creating many adverse effects, including poor quality of care and higher costs. Some of the most effective models I've seen are programs that embed healthcare professionals into primary care modules, just as Heidi suggested.
- J. Corr: Thanks to Danielle, Kristin and Heidi and everyone who has participated so far in the survey to fix American healthcare. You can find all the featured comments on our Fixing Healthcare website. We also invite you to leave your own thoughts and recommendations at [robertpearlmd.com](http://robertpearlmd.com). We'll continue to share ideas from our listeners in the future.
- R. Pearl: Please subscribe to Fixing Healthcare on iTunes or other podcast software. If you like the show, please rate it five stars and leave a review. Follow us on LinkedIn and Twitter at [@fixinghcpodcast](https://twitter.com/fixinghcpodcast), that stands for healthcare. For additional information on a variety of healthcare topics, please visit my website [robertpearlmd.com](http://robertpearlmd.com). We hope you enjoyed the podcast and will tell your friends and colleagues about it. Together, we can make American healthcare the best in the world.

J. Corr:

Thank you for listening to Fixing Healthcare with Dr. Robert Pearl and Jeremy Corr. Have a great day.