The Collators Podcast - Shownotes

Episode 5 - Trust is everything - Interview with Dr James Wilson

Overview

Dr Wilson takes us through his journey from medical school in the shadow of Ebola outbreaks, to rainforest fieldwork, to NASA satellite projects that caught the attention of the intelligence community, and later, front-line pandemic response.

Mark and Howard welcome Dr. James Wilson, a practicing pediatrician and one of the world’s leading experts in operational health security and biosurveillance. Wilson has built systems used to anticipate and detect infectious disease crises, served as the first operations chief of the U.S. Department of Homeland Security’s National Biosurveillance Integration Center, and has decades of experience in epidemic forecasting and intelligence analysis.

This is not just a story about pandemics. It’s a story about information, uncertainty, and the resilience of societies when confronted with the unknown.

External Links or References:

James Wilson MD, **https://www.linkedin.com/in/jamesmwilsonv**

The use of intelligence to determine attribution of the 2010 Haiti cholera disaster
https://www.tandfonline.com/doi/abs/10.1080/02684527.2018.1464430

Transcript

Mark

Hello everyone, welcome back to the pod. It's a very special episode of the collators today. We have another guest for you all. He is a friend of mine and former colleague.

Dr. Wilson is a board certified practicing pediatrician who specialises in operational health security intelligence with a focus on the anticipation, detection and warning of infectious disease crises. He has led the creation of several of the most powerful systems in the world used for anticipation and detection of infectious disease, crises and disasters.

He was the first operations chief of the Department of Homeland Security's National Biosurveillance Integration Center and has worked within the intelligence community since the early 2000s.

He's also a great guy to know and I'll explain how I came to know Jim. So basically I'll take our audience back to 2017 I'd been out of the police for a good while and I was in a public health role for a little while.

I was still adjusting to the very different culture, a very different way of managing and using information and a very different way of reacting to kind of distant threats or potential threats.

I felt a little bit of frustration that there was a lack of certain systems and processes out there as I saw it from my personal opinion from a former law enforcement perspective.

However, I was also aware that I was new to the organisation. I was new to public health. I certainly didn't have a clinical background and perhaps I was overestimating things. So I did some research and looked into people who had a clinical background, who also had a threat detection background and who were also involved in intelligence analysis.

That's how I became aware of Dr. Wilson and his work. He's written many papers on various subjects; intelligence and early threat detection regarding public health. And so, hi Jim, welcome to the show.

Dr James Wilson

Thank you, Mark. It's a pleasure.

Mark

So what I would like to start with is I'd like to ask you, if you don't mind, is to basically tell us about your journey, how, because you've had a very interesting path, right? You are still a practicing pediatrician. You have a day job where you're treating kids and working with their families, but you also have a global spanning kind of background in an intel career. I'm guessing, yeah, I'd just like to know more about how you started out life and maybe hear a little bit along the way of how, you know, maybe your ways of approaching, but how they changed over time, if that makes sense.

Dr James Wilson

Yes, So, yeah, I started off, actually is an interesting story. When I was coming up through college, right, I was trying, I actually started off as a nuclear engineer and discovered that I just really, the market wasn't there. You know, this is post Three Mile Island, right, in the 70s, right?

There was a lot of public apprehension over the use of nuclear power. And I just, I don't know, just, was in the midst of sort of a lot of career challenging questions, right? Like, where am I going with this, right? So I was shifting over to molecular biology, molecular genetics, and then

medical school, right?

While I was in graduate school,sort of redirecting my career, if you will, and taking classes and so forth. Newspaper articles had come out about the Ebola-Kikwit outbreak, now known as the Democratic Republic of the Congo, back then known as Zaire.

I was reading about these French physicians who had deployed in there, and these extreme stories of frightening disease, causing high mortality, causing social disintegration, people fleeing villages, people going into villages and finding just everyone is dead, Hollywood kind of stuff, right? And so we're reading this day to day. I was working in a coffee shop, believe it not, at the time.

Then I got accepted to med school and that period just never left me. just, was very inspired to look at these kinds of risks that are just, you know, the average person would say, what are you nuts?

You know, that's not something you want to get anywhere near, right? Let's let other people do that. Right. And, and my dad certainly thought I was crazy. He is a cardiac surgeon, so he was very old school in his mind about, no, if you want to go into medicine, these are the steps you do and that is the only focus you have in your life, right? And so he very much disagreed with this, but I really kind of obsessed about it.

So I got in the first quarter of my first year of med school. I wasn't even really in med school fully yet. I was there for a couple months and I just couldn't let it go. I just started doing some digging on the internet and figured out that the World Health Organisation had internships for students, right? But they seem to be more geared towards public health people, public health students, than they were medical students.

But I was like, well, you know what? I'm going to take a summer off and I'm going to go to Geneva and just hang out on my own dime, you know, with the Ebola response group.

I mean, it totally changed my life. The people at the med school were like, you're going to go do what? You know, they, they completely didn't. So right out of the gate, I went and zigged when I should have zagged and my dad was horrified.

He thought, well, here it goes. You're just going to throw your career away right out of the gate. Right. And so I spent a summer hanging out with that group and got to know some of the senior folks at WHO.

And they inspired me, frankly. This work was like, if you want your life to have meaning as a professional, what greater thing could we do than to try to save people from this horrific disease, right? It was massively inspiring. And I was so excited to be a part of that. However, how do you be a part of that when you're a student, really? And so I just tried to absorb as much information

as I could and then I had to go back to school

It was a huge letdown to go back to school because everything else in my life was boring after that. I couldn't focus. I mean it's just like, holy cow, this is my life here. I want to go back and do that, know, kind of thing. Well, fast forward, I couldn't let the dog lie, right? I had to go, I kept picking at it and started networking and networking and networking and I wouldn't leave these poor people alone.

Finally they introduced me to a lot of different people. Some of whom were at NASA and some of whom were at the US Army Medical Research Institute for Infectious Disease. So, the famous scientists who actually worked with this deadly disease in their labs, right?

But I wasn't a lab guy, right? And I wasn't really an epidemiologist either. It was intriguing, but I kind of liked that, you know, being in the field a little bit. So I kept bugging WHO and that same group said, well, you know, Jim, if you really, really, really, really want to do this, you could take a year off from med school, you know, after your clinicals and hang out in Cote d'Ivoire and study with a famous French veterinarian who very graciously, I might add, allowed me to hang out with him in the rainforest.

This man deserves his own medal, frankly, for putting up with me, but we basically spent weeks hanging out in the rainforest trying to collect samples from animals, for which we didn't actually, we weren't entirely sure what the species names were of some of these animals.

Some of these animals had never been described before by science. And we're trying to collect these samples and send them back to Yosemite for testing, for this BL4 lab for testing, to see if we could figure out the reservoir, okay? And this whole thing, this whole purpose was, if we could figure out where this virus comes from, we might be able to help these poor people prevent exposure, right? which was very infrequent.

But while we were sitting in the rainforest, we figured out that these Ebola outbreaks at that point in history clustered. There was a cluster period in the mid 70s, and then it disappeared for about 16 years. And then all of a sudden, we had multiple Ebola outbreaks all over Africa, again, in the mid 90s. And nobody could explain it. Is this just a random artifact of data and human reporting bias going on here and that was CJ Peters thought when I spoke to him about this.

But we also, we were looking at anticipatory information basically. That was the beginning of all of this is we were trying to anticipate the occurrence of Ebola in people that would wipe out entire villages, right? And that was the beginning.

Mark

It must be so difficult. It must be so difficult because I'm just thinking about that. Was it John

Snow who tried to identify Cholera and tracked it back to a well, but that's in a small town. You're in the middle of the jungle, right? With species that have not been classified and it's like literally a blank piece of paper and no infrastructure around you at all. I can't imagine how you would even begin to start an exercise like that.

Dr James Wilson

Yeah, I mean, and the researcher that I was working with, you know, he was an expert in that domain. Like this was his show, right? This was his work. And please, for the audience to know, I was basically a tourist, right? I'm just a student there, you know? But he very graciously sort of provided me that umbrella of knowledge.

He was the giant upon whose shoulders I was standing to try to take a peek and maybe figure out one tiny piece, one tiny line of evidence that might give us a hint towards anticipation, right? And I think by that point, the South African research community, Bob Swanepoel had already taken bats in the lab and deliberately infected them in the lab to see if they could hold virus for a period of time. Could bats basically be the reservoir?

So we already had some hints that it was probably in bats, right? But we didn't have an explanation for this periodicity, right? You would see multiple serotypes of Ebola show up together across a vast geography. We're talking like, hundreds of kilometers, thousands of kilometers in some cases, this clustering, this temporal clustering was not explained.

So that's why we went to NASA and said, hey, you guys are trying to forecast Rift Valley fever in East Africa and cholera in East Africa using satellite imagery. Can we look at that same database and start taking a look at Ebola?

Well, if you do that, You're gonna get tagged and sure enough I had a couple interesting folks show up at my office door at NASA saying “hi there are you the UN doctor?” I wasn't UN but “are you the UN doctor? requesting the entire archive of satellite imagery that the United States has produced for Africa in the last X number of years?”

“Who are you? What are you doing?” You know, like what what what are you up to here? You know and that was how I was introduced to the intelligence community…

Mark
who for some reason took a very strong interest in you at that point.

Dr James Wilson

Oh yeah, I'm not gonna lie. They scared the living hell out of me., I about had an accident right there in my seat. You know, and I was just there by myself on my own. So that's how this kind of started. But then they started introducing me to lots of different disciplines. Cause I think, I think

we all had a shared interest, right? As a government community, right?

I'm not talking about the intelligence community. I'm talking everybody was kind of interested in mitigating these very scary threats, right? And we really didn't know what the meaning of Ebola, right? There were lots of people who worried it would become a quote unquote, “super pandemic of death”, right?

At a 90% case fatality rate, Cause back then you got to remember, uur data was telling us this was one of the most lethal diseases we knew of. And you would die a horrible death, right? And not only you, but your entire family, right?

So this was a maximally scary disease, right, for everybody. And that was dovetailing with the bioterrorism concerns, you know? And so there's just a lot of fear.

I think Howard knows this, he was certainly hinting to this in the first podcast episode. When you've got emotions sort of overlying these assessments, boy, does that really mess with your bias, you know? And you gotta be really careful about that, right? Because you need a grounded, ground truth perspective somehow.

Because if you let fear drive you it will eventually start to contaminate your trust relationships. It will start to contaminate your assessments. It will start to contaminate your ability to continue to function as a professional because that fear can't be validated, right? Not easily, not with these kinds of, you know, difficult to anticipate risks, right? So that was kind of how I got started, right?

I wrote a paper about it and here's, here is what happened actually, Mark. This kind of speaks back to what we talked about earlier, you know, about, you know, does the Emperor have any clothes, right?

I was wandering around the government basically saying, look, we've got this interesting forecast model, operational model, right? Where we want to try to use satellite imagery to anticipate risk. Where's the watch center that watches for this stuff? Where's the group that actually keeps an eye on this stuff? And that was the beginning.

Mark

I'm imagining like a Hollywood CDC control room with monitors around the world and like some sort of active monitoring all the time, but you're going to tell me I guess it was something very, very different,

Dr James Wilson

It did not exist at that time. What existed was basically an informal human network of specialists. So if you were the world's expert in this disease, you are connected to other world experts of

that disease. And therefore, each individual is plugged into their networks of reporting because they often go to the field to do their investigative academic study.

So that is basically a human network of reporting. Okay. And then that was backed up at the same time. So I, when I went to WHO, that was during the birth of ProMed. That was during the birth of the global public health intelligence network from Canada, right? The GFIN. That was the, really the birth of the marrying of open source intelligence to public health, right?

It was a cool time because basically you're leveraging the internet now to collect all this global information for you. I think the problem with those systems and the problem that WHO found out very quickly and parenthetically CDC, right, is that if you look at the entire planet, right, all day long, every day, it is a massive fire hose of information.

And then you get to sit there and say, what do I pay attention to? Like what's the priority? Really? Really? Okay. I don't, I mean, so from my perspective, it was like, well, the vast majority this is noise. This is public health stuff. They can deal with this. These are known routine diseases. I don't care about malaria. I don't care about cholera. I mean, I do care as a physician, of course, right? And they are the lead. I mean, let's be clear, clear, clear. These are leading causes of morbidity and mortality worldwide, right? But that's not what my focus was.

My focus was the difficult to predict, high consequence stuff where there's a pattern, right? That I need to identify in all of this noise, right? And not overcall it, but not undercall it either. It was a huge challenge, right?

So that's kind of how this whole thing started is we recognise, I recognise pretty quickly, very young time in my career that folks were very good at identifying routine infectious disease, not so good at identifying some of these rare events. And it was okay at the time. So this is the other piece. It was okay at the time because our air traffic grid was not as robust as it is now. We are way more connected globally now than we were back in the 90s.

But it's funny, if you had asked me back in the 90s how connected we were, I would have said, whoa, we are way more connected in the 90s than we were in the 50s. So things have really, really, really, really become interconnected.

So the way you want to look at the air traffic side of this, is it's a question of volume of human beings in the air, right? But also the number of cities that are interconnected. So both of those parameters have changed over time.

That means that it collapses your delta for communicating the warning, right? And therefore collapses the delta to get everybody moving for emergency response or whatever, whatever the response decision point is, right? And yeah, so it was kind of, I was kind of on the front end of all of that evolution.

Mark

I'll be curious to see your take on this. My perception is when I got into public health is that because I came from a background where I dealt with real time threats, so real time people involved in real time crime or intel, you were dealing with tactical real time intel and there was a mechanism for an organisation to deal with real time threat.

Separately, there was a kind of strategic piece, wasn't there? So in intelligence ways, we may look at like kind of national intel, we may look at national militaries, we might look at kind of tank buildup or army numbers, but that seems a strategic slow burn.

I think one of the issues for public health is, I think what I experienced back then in my tiny pocket of it was almost this idea that disease was always a slow burn, almost strategic issue. You've tried to use a very kind of strategic sensor, like the satellite network to actually pick up on something real time and or short time and quite localised.

Right. And I think there's that disconnect there sometimes because you're actually, I think when you talk to most people who have been in these roles for decades, they have that kind of two track mindset. Actually it's either real time or it's not, it's either now or it's not.

And I think, but what you're saying is actually, we've got this hyper-connected society. We've got all sorts of reasons why this thing might go real-time very quickly and beyond your scope to control and manage it. So actually, you need to treat this like a real-time threat surveillance situation, even though, back to your earlier point, it's incredibly labour-intensive, right? You've got to be monitoring those sensors all the time.

Dr James Wilson

Yeah, it's interesting. Over time, I learned that there were alternate ways to get that information without having to leverage extremely expensive technology. So the other thing that was going on as the years went by is we learned that I could get that same indicator that I'm looking for, through other ways that were a heck of a lot cheaper, right?

I didn't need the level of specificity. So over time for me, for the purpose I was using it for, I felt like satellite imagery was basically over gunning it. It was sort of making my work very sexy, very exciting. Oh, that physician's using satellite imagery. know, that is super. But at the end of the day, we wound up actually falling back on open source information. We didn't need to.

Mark

The novelty kind of outpaced the necessity. I get you.

Dr James Wilson

Yeah, so I don't know. As you learn over time, you learn the economic efficiency behind the process too, and you're able to improve that over time. But yeah, that's kind of a tangential thing. But yeah.

Mark

So do you find, so you've taken us to the point where, abandoned nuclear career, went into medicine, obviously went to tropical medicine, then tropical medicine to kind of like disease awareness. You essentially ping NASA for, can I have every satellite photo ever?

You set off a few alarms and people come knock at your door, right? And then they introduce you to this new world. And then you're into the threat detection space in a clinical context. So what's, and then you've described almost like essentially, rather than my poor example of the Hollywood control room monitoring 24/7, you describe essentially like a human network, right?

Basically an extended network of individuals with varying degrees of coverage who just kind of keep each other in the loop. Which, and that's not to suggest that network isn't a useful way of doing it. It could be one of the most useful ways of doing it. Probably one of most sensitive and quick ways of doing it. Was that sufficient or was there a hole there or is that something you can talk about?

Dr James Wilson

Yeah, so I think it was sufficient until our air traffic grid became too robust. If we were able to go back in time to maybe the 1970s, then a human network would have been thoroughly, nine times out of 10 is probably fine, right? I think the exceptions to that, however, are the respiratory diseases, right? So if you're dealing with a special pathogen that is poorly adapted to humans, and just kind of rumbles along in its locality like Ebola.

I mean, it can have a high lethality, be a very scary disease, right? And certainly be robustly reported because it's a highly lethal disease, right? Even by the most impoverished countries on earth with the least infrastructure to report or no public health presence at all, they're still going to talk about death, right? So we'll get that signal, right?

But the hardest problem actually, and it took a little while to figure this out, right? So my bias and what was drawing, so it was kind of funny that the things that I was reacting to as a human being, as a brand new tourist, if you will, through all these different disciplines was actually death. That was what drew me in. But the irony here is as I wound up doing my work over the years, watching the planet, it is what all of humanity biases towards. They focus on death, right?

And the problem with that psychology, that reporting psychology is that behaviour, if you will, is it tends to steer you towards this risk when if you get a sudden inundation of a hospital

somewhere in the world, of a respiratory disease that's been previously unidentified or worse, buried within the milieu of all the other routine respiratory disease, right?

Which means it's gonna smolder there for a little bit before somebody says, hey, wait a minute, this hospital got completely overwhelmed and now the doctors and nurses are dying. That is actually a maximum priority signature, right? So from our standpoint, we are going to move on that immediately. And I will get ahead of verification and the reason why is because respiratory disease transmits much more efficiently. That's the worry, right? And indeed may already be inside of our nation or anyone or your nation by the time we start talking about it, right?

And we have actually seen that before with other novel respiratory pathogens. As the years went by, we actually wound up redirecting our priorities towards respiratory pathogens. And I do know that the UK now sees that point as well. That's now in your policy documents as your health security agency.

So I think that's wise. The key when you detect these signals is you need to kind of assume a little bit of a worst case scenario on the front end from a communication perspective so that you don't get surprised with a mass inundation event that could actually destabilise your urban infrastructure, right? So what we look at is we're actually monitoring cities as though they're megalopolitan organisms.

So the way that I treat the world is the world is a macro organism and it has nodes, it has organs, if you will. And I'm looking at cities as though they're living organisms and I'm tracking their vital signs basically.

So when I see that city now struggling, you know, people are no longer excited to participate in protective behaviours. Right? That is an indicator. Right? If they riot, that is an indicator.

If they file editorials, that is an indicator, right? If the head of state now is talking a lot about this disease issue, that's an indicator, right? So these are all, if you look at the activities of daily living of a city, right? That pattern of communication associated with that is markedly different than if that city has come into contact with one of these types of risks.

Over the years, we now know what that pattern looks like. We've known what that fingerprint looks like for many years now. It's just, we don't, you don't see it often. And you also can be surprised with a false alarm.

I wouldn't even, for us, it's not a surprise, it's routine. We see plenty of false alarms. And so if you actually pay attention too to how people communicate when they see these signals, right?

Typically the current response, and this has been a problem for many years now, for decades actually, is the rise of social media, the rise of hyperbole, right? And how the algorithms drive your audience and eyeballs to a particular piece of information that plays a strong role in our

domain because people go right to apocalypse every time they see an unusual looking outbreak or even a routine outbreak associated with some pop mortality. They go right to disease X or they go right to “we're all gonna die” and that's just not the way this works

Okay it can go that way certainly right but it's the analogy I would give you is if I were a pediatrician sitting in a clinic and somebody brings me their child the child has a fever if I tell them that child has cancer right out of the gate I'm gonna get fired as their pediatrician right “you sir are incompetent” and that's fair because we see fever all day long, right? That's a non-specific, very common indicator.

It certainly does start the process of communication and investigation, but it's like somebody telling you, hey, we had a break-in at the local pub. Well, okay, how many times do you hear that? Well, you probably hear it fairly often. Break-ins happen, right? It doesn't mean that the Russian mafia has moved into that neighborhood and now control the entire district.

And so we've got a serious problem right now in this world and really for your audience of hyperbole. I think that nature abhors a vacuum, of course, but that vacuum currently in my mind has been filled by a lot of academics and a lot of people claiming expertise who have never actually done this work before, never been burned, most importantly, right, for over calling something, right?

This is a nasty tricky balance you have to strike and you can be wrong on either end of that pendulum, right? You can either over call it or under call it and I've got plenty of stories over my life on either end of that, right? But you need that kind of seasoned process, which we go through as physicians, by the way, right? Things happen where you say, gee, could we have identified that disease earlier?

Maybe you could have, maybe you couldn't have, right? And the same is true in this domain. And so there needs to be a little bit of tolerance to, as well of, error or just limitations in our ability to see things clearly. And you guys talked about that robustly in the first episode. Same is true here. So yeah, I've kind of been riffing here for a while, but I mean, I could talk for days about these experiences.

Howard

Jim it's really interesting watching your journey that you've gone on both as a human being in terms of your personal / professional development into sort of bringing in new fields to your professional workplace scenario but also your journey in terms of intelligence

I noticed early on that for me a really good working definition of what intelligence operatives should do is we ‘speak truth to power’ but we don't dictate policy. Now in our field that usually means we provide the best guess information in our intelligence products for other decision makers to make a decision about action.

It's kind of like you collecting data as the physician for an individual patient where you are a very senior decision maker versus you providing data into a local or regional or national health network where there are hundreds, thousands, millions of similar data entry points and your ability to influence that as a practitioner, as a pediatrician in this case, but like us in our fields, we influence our own organisations very strongly.

But beyond that, there's a kind of a descaling of our impact. We have to work very hard or have a group activity to make the same impact. So that was interesting to me because on the one hand you have this ‘speak truth to power’ but I really what struck a chord was you explaining how and you talked about hyperbole people's rush to judgement and to go towards some kind of systemic bias or humanistic bias, in this case worried about death or the most serious disease.

It's kind of like when you take your car to the service station and they say there's a fault on the dash and you immediately think heck I need a new engine. Actually no there may be other diagnostic tests you know you have to rein them in but you're actually on one hand you're managing the risk straight away but you're also trying to manage their expectation and also collect data to help you make a more informed decision whether it be that you yourself are going to be the the action provider the decision maker in your case for medical intervention or where you are yourself going to refer them somewhere else for further testing or further specialist expertise if it's something that's maybe some you know where you are not the expert and we do that all the time

And one of things I've always found through intel and what I find interesting is that you've gone on that same journey. As you start out working with a kind of, you this is my day job. I'm focused very much on the tactical situations that are presented to me as a professional. But over time, as you develop and gain experience, you almost develop a sixth sense for information at one in the same time is dealing with that moment but you're also picking up on there are patterns here this is not just relevant to this case, there's a strategic or a know a multiplier here across multiple cases it has significance and I think that's one of the true identifiers of a good intelligence operative and I'm not using that in law enforcement I'm using it in the broadest possible sense.

Where people are able to look at data and patterns and straight away think “hmm, there may be multiple interpretations here from tactical through to strategic” I always used to get very annoyed with imagine the first pedal cycle it has one gear you you pedal one wheel and the back wheel or the front wheel go around and it's a single speed

The idea of multiple gears, well suddenly for the same input you can go high speed, fast acceleration or slow speed, slow acceleration. And I think with strategic and tactical approaches, organisations tend to go in these gear steps, local, regional, national, tactical, strategic, short term, medium term, long term. Where in actual fact it should be a fluid dynamic through each of these stages.

So at one and the same time you may have to deal with, in your case, a medical emergency that's presented right there, it means immediate intervention may be on very limited information because it's risk versus reward here. There's a kind of a compromise that has to be made. But at the same time, you're also trying to push it into the long game in terms of what are the midterm, what are the long term issues here? What can I take from this to actually develop understanding or awareness elsewhere just as you were talking about with the Ebola and then COVID.

What also struck me when you talking particularly about the Ebola and again I love this you're a thief, just like me, you will steal any good idea or any data set that helps you try and do your particular job better or just because you're interested in it.

There's that curiosity something we've talked about on other sessions and I love that but one of the things that always strikes me is we often one of your countrymen many years ago and I'm sure you'll know him better than me Donald Rumsfeld, for all his flaws came up with quite a good perspective on knowledge there are things we know things we don't know and some of those things we know we know and some of those things we, don't know, we don't know. It's kind of, four options with those two words.

And you start off from the known, known. Like you say, low scale, your daily job, dealing with the normal routine, things that present through patients. But you're always looking for the, like with the Ebola, the unknown, unknown.

It's not just that we know we don't know. We have this false confidence that we know everything. We don't know we don't know until something happens. But the really scary ones are the unknown unknowns. We don't even know what we don't know. Like we've talked about, we assume that there's this kind of parental or parochial oversight of things when in truth it's probably because we know the data's there and we think somebody must be managing this and often they're not. That's kind of the con of human society these days. But what we also get is this idea of when the data comes up, you have data, but you're forced to deal with the data that you can get.

If it's not in the data, you're not going to see that pattern. But when you realise there's potentially a pattern there, just like we do, you starburst and look for other data sources, in your case the satellite imagery, that might help inform your hypothesis, your theory in this case around a disease.

But the problem is global variation in data. It's not just across different fields. Globally, the way that we collect data regardless of field varies between nations, between societies, between systems. And I wonder how much you found it a problem or not maybe in collecting data from some of what you might call the developing countries who maybe aren't as sophisticated as we are in terms of their technology but are the source of the data. Does that make sense? Was that

a problem for you?

Dr James Wilson

It makes a lot of sense, actually. And I can give you a couple of examples. And Howard, I hear the decades of seasoned experience coming out and everything you're saying there. I very much appreciate it. It's an honour to speak with you. I love it. just love it.

So standardisation of input, right?

We wound up, hopefully what the audience is hearing in my journey that I'm sharing with folks is not that we had all the answers on the front end. Actually, we didn't even have a discipline in the front end, right? And there were a lot of folks trying to figure out how to build systems to collect data, right? I was actually more focusing on how do we build the discipline?

I really want to understand the discipline, the analytic. If I were to treat this like I'm going to go train a new cadre of physicians, how would I teach people how to do this? That was more of what I was focused on. You know, you'll see me, you'll see blips of me online talking about disease forecasting and this and that. And it almost comes across like I'm selling a product. That's not really that was never really the purpose.

The purpose was more so if I start using a technology that can forecast disease, for instance, so what? What material difference does that make in my warning to emergency response nexus, right? If it doesn't make a difference, then that's an academic, interesting, public radio kind of podcast.

Fine, go have fun with that. That doesn't have meaning in my real world. And so you'll see me from time to time, even on LinkedIn, kind of really flick an academic and say, give me ground truth on the so what, right? I wanna know what difference that really makes at the end of the day, aside from a very interesting conversation over coffee. And so you'll hear me be that hard-nosed individual. And some of that, I got infected by some of the curmudgeonly folks who were the world's experts for some of these diseases who would pick at me as the enthusiastic young man trying to do something without that standardised data.

So what we discovered, right, to answer your question is there is a commonality of psychology across the planet, if you will.

We noticed that it didn't matter what culture you came from, didn't matter what language you spoke, didn't matter what type of government you had, human beings respond to certain risks in a certain way. And there is a tendency, there's no 100%, 0% here, there's a tendency, right, to react a certain way and to report.

And this is really, there's two things going on here. There's what the disease is actually doing

versus how people are describing what the disease is doing. And those are two very different things. And you need to understand that before you engage. That understanding leads you to be aware of the biases in reporting and a recognition of, you need to expect the following gaps in reporting, because this is simply not the facet of the event that's going to attract human perception, right?

So you have to understand that. So once you get grounded with that, then that actually, gives you a baseline from which to operate from. That gives you a common framework, applicable to all cultures, all nations. And that was the approach that we took going all the way back during the time of the emergence of H5N1 as it really took off in Asia in the mid 2000s.

That was our realisation, the beginning, I should say the beginning of our realisation of the common pattern of human discourse.

So really what I'm looking at is the psychology of communication, right? How do people talk about things, right? And so another, you're right, I'm a pirate. I'm running around and I will steal that one little shiny object that can add to this framework, right, from any discipline, right? And I have actually, here we are talking about intelligence, right? But actually we found the greatest resonance in sociology.

The folks who study disaster sociology, right? You know, I probably had the most ‘aha’ moments where I started just lifting frameworks of understanding from our colleagues in sociology and also the anthropology community as well.

So, you know, there's a lot of thought to that. Now, in terms of unknowns, know, Rumsfeld was right. You know, he really was. You know, in terms of unknowns, we had some examples actually during COVID. So as COVID was emerging and starting to spread around the world, we were very aware that there were some gaps and limitations, right? And so we would wait for signals to appear, for example in communities that were more permissive with reporting, for instance, right?

So if we were worried about one location in the world that we were worried about them not being as transparent as we would like, or maybe not having enough of an infrastructure to actually offer reporting, it didn't really matter the why. was more, if we were worried about, you know, we're missing a piece of information that's critical, there were times where we would very purposefully and strategically wait for that disease to get to this city over here that we actually do trust and we do know they've got a good infrastructure and we would wait to see how it impacted them.

Now, under this framework, then eventually we started developing an impression of impact, right? That in those early days, we're a bit in conflict with some of the some of the folks emphasising a 1918 outcome, for instance, which if you have truly sat down and studied 1918, that was an inappropriate comparison at the time. Now, that statement I just made is worthy of

an entire podcast episode, just to talk about why did we bring up 1918 in the middle of an emergency response?

Was that the right thing to do, the wrong thing? That is worthy of a very robust debate, right? For a lot of different reasons, right? Well, I will tell you that our team has very much studied 1918, and our perspective is very different than a lot of what the public has seen thus far. Was it a disaster? Yes, it was. No question about it. Worst thing we've seen in 20th century, right? From a modern urban perspective, right? No doubt about it, okay? That was awful, okay?

However, the way that we look at that is we are looking at, yes, we recognise what maximum impact looked like. On the other hand, I wanted to know how fast did that city recover? How fast did humanity get on with their activities of daily living despite taking a catastrophic hit of that scale? I'm looking for that positive hope vector.

Because if I don't have that story, what the heck am I going to say to my decision makers? What the heck am I going to say to my responders that I'm expecting to show up at work every day and risking their lives and their family's lives to show up at work and care for these patients?

You know, these are the kinds of very adult conversations that you're going to have to have before you start tapping away on Twitter, right, or on social media, trying to make a name for yourself because you've hyped this, right? There's a ripple effect and an accountability and consequence to communication, right?

Now, can we be wrong? You betcha. You betcha. So when COVID hit Lombardia, okay, we were very focused on certain infrastructures because we were trying to approximate impact to us on the receiving end, the United States. And we were sharing some of this dialogue, by the way, with the UK so that y'all were kind of thinking about the same things we were worried about.

But if you notice, right, there is a big difference in that first wave impact when it hit Singapore, Hong Kong, South Korea, you know, Germany saw a cluster of patients. They didn't even recognise they were they were patients, right? And they did hospitalise that initial cluster of a variant, but they were put they were put under observation, right?

They were hospitalised for observation. They didn't receive the kind of overwhelming 1918 like impact that Lombardia received. And this is an example where a piece of information was actually not at our fingertips in that tactical setting.

What was at our fingertips was that known framework of human communication I mentioned. We did see that Italy was experiencing something, a signal pattern that we were not seeing except outside of Wuhan. We had not really seen it to that effect in a modern medical infrastructure, right?

Now we were aware of Iquitos and Amazonia and other, you know, Iran, yes, but that in our

mind was not, it's different if you see that impact in a country with limited means versus a country supposedly with a very modern, you know, medical infrastructure. And we can debate how close an approximation that infrastructure is to the UK or the US all the day long. But the point is that it got our attention.

And so at the time, Howard, we said to ourselves, either we were dead wrong with our assessments leading into this, right, or something is different about that virus. And then four months later, we had a national lab come out and say, well, we sequenced all these different samples all over the world and it looks like the spike protein had stabilised. Right about then.

Dr James Wilson

And so I was like, well, gee, that's really interesting, guys. Thanks for sharing that. Four months after the fact. And then about a week later, that's when New York got hit and New York really had it had an experience. Right. But there were differences even inside our country in terms of impact. Seattle thought they were going to 1918. They did not. Right. Our Western states did not initially.

Again, we could have multiple podcasts unpacking COVID, but the point is, is if you think we're going to have all that information up front, your fingertips, guess again, right? And, you know, from a genomic sequencing standpoint, I think it's wonderful people want to do that, right? But from a hard nosed operational perspective, I want to know, what, are you going to have that information for me immediately right then and there?

If you don't, how long am I gonna have to wait? Because I'm gonna be making a choice here in about 24 to 48 hours.

Howard

It's a really valid and important point to make because the ability to turn information into something that's of practical value to go from almost a reactive situation where you're playing catch-up with something that's new to being on a par with it and then hopefully planning to be ahead of it in terms of your future planning is something that requires fast information and the ability to process.

What I also liked Jim, was the fact that you identified, and it's what we always do. It's another common factor. Intel is never 100% correct. You know, any piece of analysis, there's going to be an error in it. We call it the what if box in England. There's always, you might have two or three hypotheses. So you get the situation where you're noticing that either your system is completely wrong so that your hypothesis is wrong or it's right and it's just not showing in the behaviour on the ground, know, the actual environmental impact.

But straight away you've acknowledged that you may be wrong. So you've got two lines of

inquiry, two lines of action to take. One, if we're wrong, what do we need to do to find out why we were wrong? Two, if we're right, what are the likely consequences from a practical point of view and how can we get ahead of that? That's not an admission of error.

That's actually a realisation that there may be multiple actions here and multiple action streams all of which are of benefit, even if one of them is only learning that you made a mistake because you can then avoid that mistake in the future. That's the reality of the intelligence process and this idea of developing intelligence systems and people with expertise and processes.

Dr James Wilson

Indeed.

Howard

That can support the on the ground business objective, the practical objective for the people that you're trying to serve. Both decision makers, the people with more power than you and I, but also the ultimate customers which is society itself, you know, our fellow citizens wherever they are in the world. Really like that.

Dr James Wilson

You bet. You bet. So I would say that what attracted me to the intelligence process, was exactly what you just said, is they embrace uncertainty upfront in the process. Whereas, and Mark, this helps explain what you encountered when you dealt with public health.

Their mindset is we cannot be wrong if we're going to communicate with the public. Full stop. Because if we blow that trust nexus, we're done. Right?

Absolutely valid concern there is zero debate about that actually, and I would tell them to continue with that mentality but that explains the difference between what I do and and sort of why I gravitated towards intelligence is I was like I want to be with those people who embrace uncertainty upfront and then that carries with them through their entire chain of process to when that they have that conversation with the decision maker right, that their community communicating uncertainty to the decision maker, right?

And you know what's funny is we don't really do that as much in medicine. We do in our conversations with the families, right? If we're doing in the middle of a complicated workup, we'll say, hey, listen, this is where the data takes us, right? But please do not assume that everything is perfect here. We might have to revisit this. We might have to have another conversation about testing or evaluation. We may have gotten this right. These are not 100% accurate tests.

That just is not ever a thing really in medicine. It often is close, right? But this is the way the world works, right?

Mark

I think it's worth trying to bring in people who aren't from the intel background or aren't from the clinical background just to try and explain that. I think something that all three of us do is take for granted how much we have kind of built in systems of thinking about these things.

I think the problem with COVID, and I'm gonna try, forgive me, I'm gonna articulate this poorly, but stick with me. The problem with COVID I think is, you say you like intel, Jim, and I like intel, otherwise I wouldn't be here.

The thing with intel is, as Howard alluded to before, intel would train you, look, when you have a certain number of data points, interpret that, list all the possibilities, but I wanna know about the heaviest, the worst case scenario, all the way through to the best case scenario, with, if possible, some sort of predictive language about, how likely.

So we list all those options. But as you said a little while ago, as a pediatrician, you ain't doing that with the family because you'd be immoral, it'd be wrong, there's no utility to it. You may have all sorts of things going on in your head that you're keeping at the back of your mind, but you are much more conservative with your doctor's hat on or your pediatrician's hat on than you would be with your intel officer's hat on.

And I think the difficulty with COVID and perhaps all of the things that you've described in recent years has been. What I witnessed with COVID is this kind of overlap between, we had different, the same individuals with different roles trying to do different things, right?

So what I mean is, you're right, in public health, we have a duty to the public that when we shout to the public anything, we have to be as certain as we can be and we have to retain trust. Thats absolutely right.

The downside with that is sometimes as you build thresholds for evidence, right? You basically say, okay, I'm only going to react if a certain threshold is met. But that's diametrically opposed to the intel officer's hat who needs to be as sensitive to the quietest whisper possible, because from the decision makers point, and I think for, that's why I find people like you fascinating, is because you have to wear the hats of the pediatrician, the global surveillance guy, the policymaker guy, but the you don't want [to be the] set hares running and shout fire in a crowded room guy.

I think cognitively that's an incredibly difficult place to be. Right. Unless you know explicitly the channel that you're serving and that your audience and purpose. I'm with you, on LinkedIn during COVID. It was really one of those times where I was wondering, is the internet a good

thing here?

We were going through in the early, in late 2019, when things were starting to happen, it was ugly, right? Because I was getting different signals from different places. Okay, we've got some sources saying, don't panic, everything's fine. You know, it's just gonna be another bird flu, all blow over, it's fine. That's one end of the spectrum. To as you say, people who are either for all sorts of reasons saying it's the end times and you know, better start prepping now because you're done.

The problem that you have is with the internet is you have so many data points to support any hypothesis you like. If you want to say that COVID is going to kill us all, you can see the footage of Lombardy. You can see the shiny satellite shots of the morgues being overrun and all that type stuff and all that crazy stuff. You can find as many data points as you want to support any hypothesis.

And the art becomes how the hell do you select the hypothesis? And I think that's the tricky part for general listeners is what I'm trying to get across in the pod is, Howard is an expert in intel and basically listening for the quietest whisper just to try and get, he literally has walked into a room with a dead body in it and it's his job to find out what the hell happened. Your job is you've literally been in a jungle going, what the hell's happening?

That's a very different task from being just a person in society who's hearing all this stuff and is getting all these mixed signals, right? Because, you know, I sympathise with anybody because the other thing is when you and Howard, maybe if you were in your 20s, 30s and 40s, right?

Maybe you'd get your information through broadcast media, maybe through television, maybe through radio, but because of the internet, I remember on the same day, I think I was seeing signals from, it's going to be fine. I've read one guy saying, this is why it's not gonna be at Spanish Flu again. And then half an hour later, I'm watching the surgeon general making a T-shirt, making the masks out of a T-shirt and elastic bands, right?

And it's just, and I just felt sorry for anybody in that space because their algorithms are firehosing all these signals and we're expecting them to pass and make a rational judgment out of this. So it's not an intellectual thing, it's just, I was confused and I think many other people were confused, and desperately trying to get a handrail on what was going on.

Dr James Wilson

Yeah, so Mark, I think the paper I shared with you, right? You'll see some really clear learning points, hopefully, if we wrote it properly. I I'll confess, I always have something to learn in terms of how to write a better paper. But honestly, the core lesson I learned in my COVID engagement, honestly, was if you don't have a trust relationship with the decision maker, you are dead. You are, it doesn't matter how good, I mean, you literally could be the 007 of this

domain, right? The world's best agent. You're dead. You are useless. You are not able to be effective.

This was the only, I'm going to be honest with our audience here. I've been doing this for 30 years. This was the only engagement where I actually felt like we absolutely made a difference that was meaningful and that we did something that helped save lives and helped most importantly save the critical infrastructure responsible for saving lives.

And the way that we look at that is we mitigated impact. We never.

Mark

When you say we, do you mean the health security network you talked about before? When you say we, who's the we in that sense?

Dr James Wilson

Well, kind of rewinding what I said, I'm not sure. So when I'm referring to we, I usually am referring to our team, right? But the audience with whom I have that trust relationship, basically I'm looking for someone who is the trust broker of hospitals, right? So who is it that has that trusted voice with the hospital CEOs, the chief executive officer of the hospitals? The hospitals from our perspective are the bulwark of defense for our nations, right? And so if you lose control of that hospital, right, that is the beginning of a cascade of other indicators you may see that relate to social integration, social order.

Okay, so for us, it's paramount to protect that critical infrastructure as best we can. We can't take the threat away. What we can do is prepare them psychologically, prepare them for all of the things that could be coming down the pike, which would be supply chain issues, staffing issues, bed capacity issues, all the things that we wound up seeing.

These are the things that we are worried about. If you take, I mean, you've got to have that conversation carefully. And if you have the trust relationship, then that's an individual who knows you, trusts you, and you can have that broad conversation without worrying that, my god, I said too much. I said the thing that was in the back of my head that I should never have said, but I blurted it out and now the whole thing's gonna fall apart and people are gonna die, right?

If you have the trust relationship, you can have the honest dialogue and talk about, okay, listen, this is what we know, this is what we don't know, this is what I'm worried about, right? Because I don't have enough data for this piece, right? And we wound up having that kind of dialogue on a daily basis by phone, email, text.

What you saw on LinkedIn frankly were echoes of conversations, but also an operation. That operation was also to unpack some uncertainties, right? So if I've got somebody insisting that

this is 1918, I'm gonna pick a fight. And I'm gonna pick a fight not because I'm trying to be an ego, I'm picking a fight because I want them to open up a little more and tell me why they think that.

And I'm going to probe and I'm going to pick and I'm going to find the ground truth behind what they're saying and ascertain if they're taking us to an indicator that we need to know about, frankly, or not. And I'll be honest with you, that's kind of how we unpacked Lombardia in those early days in February 2020, is we had an individual come to us and kind of draw our attention a little bit closer to that.

That individual would not have been connected to us had we not been posting on LinkedIn and essentially creating a spontaneous human network to help us. Now for the old school seasoned intel operative, which is different than an analyst, right? They would say, what the hell are you doing? You don't know who your sources are. You don't know what their credibility are. They could be misleading you, disinformation, yada yada yada yada, denial, deception, all that.

Yeah, we get that, right? But the internet can be a noisy place, can be a chaotic place, but it can also be used to some degree of advantage if you understand how to do it. So there's a discipline to that, right? And you can get burned. You can be, you you gotta be careful. But that's the world we're in now, right? This isn't the world of the gumshoe operative anymore. You have to be savvy.

Howard

You're absolutely bang on there Jim. This idea of data's data. Whether it's flawed by accident or by circumstance or deliberately flawed malicious data. It's still data. You've got to trust the intelligence element of your organisation to be able to on the one hand deal with that data and strain out pieces that are of value but number two guard against simply taking it as red and building it into your systems. One of things that I really liked about what you said was this idea of trust and I completely agree. I've worn both hats all my career. intel Operative/Analyst, Operational Detective running major inquiries and they are different perspectives but it's allowed me and I'm sure you're the same as a practical intelligence officer but also a practicing pediatrician, doctor, medical expert, to appreciate both sides at the same time.

It's a better appreciation, it's a more rounded understanding of the people around your physical or virtual table in that particular community activity. And one of things that I always like, you and I know decision makers like certainty.

And can best say to people, if I give you certainty, I'm going to have to lie. So you can have truthful uncertainty where I give you some kind of value judgement on my estimation of what the flaws and risks are in what I'm saying and be completely open to challenge for that, around the table. Please, you know, tell me I'm wrong. Scientific method, please disprove my theory.

Because if you can't, chances are I'm right. But on the other hand, If I give you uncertainty and and be honest about it, that should build trust. And whilst the first encounter of that group, or those two actors, the decision maker versus the intel analyst, call it what you will, the information provider.

Whilst the first ones can be very difficult, over time you will build that trust in the same way that as a pediatrician, I'm sure you build relationships with patients and their families. From the first meeting, to patients that you've dealt with for years where you know each other very well and they know to trust you even when you're saying to them I'm not 100% certain, I can't give you any guarantees here but my best guess is follow this and they'll basically they'll say I trust you, I know you're doing the background work so that I can have faith in your prognosis and your recommendations for them to make their decisions

People need to have the strength to understand that the world is changing all the time. The actors, the people who are sat around the table are changing both as the people who are there, there are always people coming in and leaving, like, you know, I'm now retired, I'm just thinking I'm not doing this as my day job, I just do it for consulting and friendship and various other things to influence the field.

But the actual people around the table change. The person that I was when I first started my career in law enforcement is not the person I am here half a century later. And it's the same with decision makers and organisations and governments. All these group activities as well as the individuals change so it's this fluid dynamic. People are resistant to change but it's the one constant that we live with.

Just one other point that I'm jumping back. You mentioned something that I really loved and it's something that we would talk about. What indicators do you look for but how do you measure success or failure? It's very easy to, with hindsight, measure failure but success is often harder to achieve because if you are good at preventing a disease or spread there's a lack of data where if you fail there's loads of examples of people being suffering from the disease.

It's the same law enforcement. You know, well we prevented crime, did you? How do we know it would have happened if you hadn't have done the actions that you did?

But one of things that you said was you were looking at cities and you weren't looking at the initial infection. You were looking at the kind of the rays of hope of how that city and the population picked itself up after the event and started to return from catastrophe to normality.

And I love that nuanced and balanced approach because that's the reality of life. There's no such thing as a sure thing. And sometimes the range of successes that you have to offer and aim for are not actually 100% optimal successes. And just as a comparator, one of my career phases was reviewing what they call in the media cold cases.

Serious crime, usually homicides but it can be other things where either the wrong person was caught, what they call a wrongful conviction, they made a mistake or it was never detected so it's kind of left on file. My PhD was in cold case decision making and datasets and one of the things you'd find there was exactly that process of how do you measure success?

Well for me as an investigator, kind of like you as a pediatrician, even if I hadn't caught the offender or offenders, at the end of my investigation if I tied up other loose ends and dealt with all lines of inquiry that were available to me with the technology I had at that time, you know I'm old enough to remember law enforcement before DNA, you know you can't blame the investigators pre-DNA being a test available to law enforcement for not concentrating DNA in their decision making. Because they didn't know it existed.

So when you look back, part of what we're doing these days is not we're any cleverer than they were, or any better an investigator. We just have new technology like you think about in the medical world before MRI scans or before penicillin and antibiotics. So that evolution I think of how you measure success and I've always found that very useful with decision makers because it gives them other opportunities to frame the outcomes of what you and they are doing other than complete success or complete failure in terms of we've eradicated the disease it'll never come back or sorry it's going to take over the world and kill everybody. Is that a fair comparator?

Dr James Wilson

Well, how do you measure success? Okay. So that is actually, that actually, I don't have a complete answer, believe it or not, after all these years. What in my domain is success? Honestly, it's first of all,

Did the recipient of our information, did they feel satisfied they could do their job and they didn't have major complaints about it? That's one metric, right? Because again, if they're not satisfied or they think we misled them somehow, you're dead, right? Your trust is gone, right? So that's the foundation.

Because we were attempting to protect critical infrastructure, so our bias and our focus is to protect those darn hospitals, right? And when I say protect, again, we're not telling them we can prevent the hazard. What we're trying to prevent is operational failure to keep from being overwhelmed, right?

So if you lose control of the emergency department, ICU access to that hospital, and enough people get infected inside that building, you've just compromised the hospital, right? And that was the lesson actually of SARS in Toronto in 2003, right? So I was there when all that stuff happened and I remembered that very much. I remembered all, I mean, I saw the briefings from Hong Kong. I saw their data out of Hong Kong when those hospitals got overwhelmed in 2003.

There were some lessons, some echoes that we carried into this, as targets of measurement,

right? That we wanted, like, if we're successful, simplistically, our hospitals will have been prevented from getting overwhelmed and having to either shut down or shunt or whatever.

And I will say that as far as our hospitals were concerned, they did not require emergency federal support to manage the overwhelming demand of patients.

Now, here's the dirty secret. Two things were happening there. One is the hospitals themselves didn't want the feds in there, right? Because they're private institutions, private companies. They kind of like to do things on their own, which actually is a good characteristic. I want them to be feisty. I want them to fight. OK? So to me, that's like, OK, that's fine, guys.

I will tell you though that if that disease had gotten badly enough out of hand, nothing they did, they would have collapsed, right? So I can tell you that they didn't collapse. They were able to digest patients, so to speak, and process them without getting completely overwhelmed, okay?

So that was that. How many lives did that save? I think that's an open debate. Did we really save lives, okay? When it comes to COVID, man, you could have a debate about that. Were these people ultimately, were you, I may have saved your life in wave one, but you might not, you might've gone out in the community and died in wave two anyway, right? Or wave three or wave four?

Now these are very difficult, hypothetical, and very much ethical questions to ask. I can't worry about that in the moment. I'm gonna try to do as much saving as I can within tolerance of that community.

So the other side of that is very much a respect piece that we have to deal with in our clinical environment. I can't force my families to take my advice to do some intervention for a child, okay? The best I can do is say, listen, this is my recommendation. Here's what could happen if this goes sideways, right? And this is what I'm worried about. But if you as the parent choose not to do that, I mean, this is life, that's on you, right? And so I can't, and I don't wanna force people. If I'm forcing people to do things, the trust starts to erode. Now the challenge has all of us found, Australia found this too, certainly France.

I mean, we all found out about this. Is if you have a government expecting all of society to all together cooperate with extreme countermeasures like lockdowns and maintain that for a long period of time without communicating an endpoint, that's just a recipe for a mess.

Well, now I get to say that now in hindsight, okay? I get to say that, right? But coming back to measurement of success, what we know is that if you don't overwhelm an intensive care unit, for instance, there is a certain metric of death that you've avoided in that moment.

Okay. But the nuanced conversation is, well, would those patients die later then? Like, have you only delayed the inevitable? I can't, I mean, honestly, I can't really focus on that. All I can focus

on is if that hospital collapses, we lost the battle, right, for that hospital. So long as that hospital is able to keep its doors open, keep ingesting patients, keep treating them as best as they could, then I have checked that box, right?

And that was the best that I could hope for. So you're absolutely right, Howard. The problem of prevention, right, is indeed if the crisis doesn't manifest, then you don't need it.

What I see clinically is if I'm treating a kid with mental health issues and I put them on an antidepressant because they're suicidal, right? And then they start feeling better, they classically will come back and say, hey doc, I don't need my medicine anymore and I'm gonna stop taking it. Or they've already stopped taking it. And now they have a hospitalisation for suicidality, right?

And so this is a tough problem, right? This question of prevention and whether or not to sustain economic investment, this is where the rubber really meets the road is the money, to sustain the economic investment to continue that prevention. If you can't prove that the risk is there or you've done such a good job, the risk isn't immediately present. Does that make sense?

Howard

Yeah, I mean, I completely get what you're saying. And I like this idea of almost primary benefits and then secondary benefits and tertiary benefits or possible secondary benefits like the person who leaves hospital not cured but well. So you've extended their life certainly potentially for that period, even though they might get knocked down by a bus or die from a revisit of the medical issues that brought them to hospital in the first place.

But like you say, such is life. know, there's no guarantee here. Death is inevitable for all of us. It's the one metric in life that is absolute. But what I like as well is, for me, you've designed something. It wasn't the intention. But potentially, you've designed a system whereby institutions like the hospitals that are so critical to our daily life as communities and societies, they've better developed their own awareness and resilience in the face of an unforeseen event, even though it may not be COVID next time.

Catastrophe type events or unforeseen events are the constant. And every time you go through a process of almost target hardening that institution against the impact of that on the infrastructure and the organisation itself, rather than its clients, the patients.

You're talking about survival of an organisation here, which I would argue is just as laudable an outcome of survival of human beings as individuals, because one is directly linked to the other.

The reason I say that, I've had some involvement in the biological sciences. My first degree was biological science. I only ended up in the police because like you, I couldn't make a living in biological science and you got to pay the bills.

But I got brought in, there was a phase in the world, in the good old tinterweb [internet], when they started talking about big data a few years ago. And I was asked in law enforcement by somebody high up in one of our regional health organisations, what could we do with big data, looking at what our local GPs, our doctors and doctors practices, and then our hospitals were collecting, because over here, of course, we've got this National Health Service, so it's a quasi-national data set, you would think, within the organisation.

What, what could we find in this big data pot, if we could throw it all in a pot, that might help prevent disease or, have early indicators for disease that may be, chronic or complicated or ultimately fatal, you know, heart attack, that kind of thing. Are there any early indicators we could find so that we could then fire them back to the local first responders, the GPs, our practitioners who were the first contact with patients so they could give health advice or actually get them intervention at an early stage?

And yes, you can do all that. And I said, well, why are you doing it? “Well, clearly we'd like to intervene and prevent death” ultimately in these again like you talked about this serious focus on death and the most complicated illnesses the most complex illnesses and the most severe shall we say and obviously, I'm not expert in disease in any way shape or form

I said well why would you do that there's so much more you could do with this data the one guarantee is they're all going to die whether it be as a result of that disease or something else in life, bad habits or just bad luck. You know, old age, it comes to us all. If you're doing that with this big data it's not worth the exercise because it's a big exercise. But why aren't you using the data to improve the resilience of the system?

Like you say, the logistics, the information sharing between these different stakeholders. The involvement of other agencies and organisations who have an impact on the lives of these people, and may hold data that's of value to what you're trying to do as what we call a health trust over here. This regional organisation responsible for hospitals and GPs. And they honestly they hadn't seen that opportunity and they actually went away and came back said well no thank you it would be great but unless we're stopping people dying, we don't see there's the point.

And I was able to show them just with a few test examples how they could have saved millions, in this case of UK pounds, but obviously millions of dollars, from their budgets through system and process changes where this early information would give them forewarnings for things like ambulances, clinics, bedtime, impact on ICUs and other triage services.

And they just couldn't see it. And these were business managers. They weren't the senior consultants and senior doctors who were the medical experts. They were business managers. And you just... I think often, that's why it's music to my ears hearing you talk about these more nuanced outcomes as being real indicators of success rather than what you might call a simplistic one, of well we can save your life or we can improve your quality of life for as long as it may be. Does that make sense?

Dr James Wilson

Yeah, it does. think it's... I think there... You also got to understand your audience too. mean, there are different types of people, right, out there. Some people don't want to know if the asteroid is coming, right? They'd rather just get, you know, just not be warned, right? Because there is suffering to warning, right?

There's pain when I warn. It hurts people actually to communicate that. I think our world, not in the moment right now, but I think in the years to come, we're gonna understand that communicative behaviours, you have to be careful, right? Because you can hurt people, you really can with your words, but now because of this technology, we can be very hurtful at scale, right?

And the pen is mightier and the sword, that kind of you know, dynamic. As far as what you described, Howard, my experience with that, actually, I'm gonna share a story about antimicrobial resistance, okay?

That was a very interesting engagement. I landed in a part of our country for a little while that was a hot zone, if you will, of multi-drug resistant organisms, right? And we were getting a lot of conflicting messages, public health at the time was very obsessed with multi drug resistant, you know, sexually transmitted disease, right?

So they're worried about specifically third generation cephalosporin resistance in gonorrhea and they were focused on gonorrhea, gonorrhea, gonorrhea. And I get it, that's a public health issue, right? But we had identified a bigger concern and that is if your gonorrheal specimens are flipping like that, we know that they share plasmids and genes and genetic material with other organisms that live down there, like E. coli. E. coli actually is a far bigger impact to our health than gonorrhea. No offense to the folks who get gonorrhea and have to deal with that nuisance, right? It is an important disease. Don't get me wrong. But in the prioritisation of what this means in terms of mass effect to our society, I was way more concerned about what is going on with the E. coli. Because if the E. coli starts exhibiting signs of multi-drug resistance, that is a reservoir in your body for lots of other shenanigans, okay? And the most common, more common, I should say, infections that we have to treat that could actually want to put you in the hospital like bladder infections leading to kidney infections, right?

So anyway, we noticed this in the community. And the first thing we noticed was there was entrenchment. We were really paying very close attention to the behaviour of the existing framework of expertise, right? Which are your infectious disease positions, your public health people, and some of the infection control folks in the hospitals. And we were really we were bumping some heads here in these meetings.

We're like, listen, we have the ability to analyse this data and start anticipating where these

trends are going to go. Like, when are we going to lose control of all of our oral antibiotics? Right. And we noticed that the frontline clinicians, they didn't care. I could talk to them all day long about this. And to them, it was this hypothetical risk that they never really saw the impact of. It was really, you know, they took care of a patient at this point in time, but it's really the nursing home's problem, right? It was always someone else's problem, right?

Their salaries were not tied to this issue in any way. There was no economic impact for them. There's no metric they're being measured against, you know? So there was no accountability framework whatsoever. It was more, I'm just an excitable academic, taught, you know, so I've worn all the hats, right? So I get it.

Sometimes you have to, you know, hand wave a little bit as an academic to get people to pay attention because there's no framework of so what from the perspective of the individual you're talking to, right? And so I talked to them and I talked to the hospital administrators. The only thing the hospital administrators thought was this just looks like legal risk, right? If you bring this up, then people are going to think our hospital is a place they can't bring their loved ones to, and then we're gonna get sued if somebody gets a drug resistant infection, right? So they didn't wanna talk about it.

We talked to the nursing staff, they didn't care. They cared about it from the standpoint of mitigating spread of these issues, right? But the core of the issue was prescribing the antibiotic, right? Like how do we rein that in? So we tried to go in there with policy and say, we're gonna actually require prior authorisation if you try to pull the trigger on these high-end antibiotics, broad spectrum antibiotics for otherwise routine disease, right?

And we went to the insurance companies. tried, we walked the earth trying to figure out who cares about this issue. And so I wound up doing a pretty complicated walking of the planet, just like I did in those early days with Ebola, trying to figure out where the watch center was.

Who cares? Who is it that cares that I can actually influence to start to change this dynamic of overprescribing, right? Because that's really what I was after is to get us back to a place where we're prescribing appropriately, right? At the end of the day, long story short, it took me 10 years to figure this out, which is ridiculous and embarrassing. But at the end of the day, it came down to patient education.

Trying to explain to these families, listen, coming in and demanding antibiotics for runny noses sets you up for these problems, okay? But I couldn't have that conversation if I didn't have trust with the families, right? So does that approach scale? I think it is scaling now thanks to a convergence of effort by our CDC to really educate the public that antibiotic resistance is a huge problem and we need to get on the front end of this.

And we stopped talking to older docs too, right? Because the older docs, they were set in their ways. They weren't going to listen to this. We had to go after the younger docs who were very

much on the same page. you had to, it took a lot of wandering to figure out who cares.

And if I can find that one person who cares, I'm going to glom onto them. But I'm also mindful if they care, can they help me in my mission if I can flip them over to the dark side of prevention.

So you have to really know network theory and human behaviour. I mean, there's a lot of disciplines I just unpacked there. But honestly, fast forward now, in my clinical life, I do use artificial intelligence predictive analytics, to analyse our antibiotic resistance data. And we actually have seen a meaningful decline in resistance.

I mean, it's significant actually. We have our providers constantly educated on this. The families now are very much on side with being careful to ask for antibiotics and to have that really thoughtful conversation with the providers before we pull the trigger on a prescription, like is this watching and wait situation or not?

All the substrate within which we're having this intervention occur is trust, right? So you're right, Howard. mean, you gotta be, it can be maddening and frustrating. Like why the heck can't we get people to intervene on this important thing? Well, you gotta be patient, take a breath and find the right, you gotta find your crowd. And once you find your crowd, then I think you can feel that you're making a difference.

But it took me 10 years, 10 years. And you'll see me, I've got videos online where we've talked about forecasting antibiotic resistance. Meaningless. I mean, who cares how accurate the forecast is? It absolutely is meaningless unless you have a social framework of trust within which to deploy that, right?

So I don't know, that was the lesson I learned from that engagement.

Howard

Yeah, words of gold, my friend, words of gold. We've all been there.

Dr James Wilson

Oh, just, again, I just hope that the audience understands that, you know, this is life, right? Life is messy. And just because I've had these experiences and people will say, oh, you're an expert, I gotta be honest with you, the older I get, the least I like that term.

Less and less, I like the term expert. I know people say that, and I remember as a young person hearing that and thinking, you're just, there's a term for this where you're sort of deflecting praise and being coy about praise. That isn't what I mean. What I mean is it's almost like the longer you live, the more of the hiccups you see, the flaws in our ability to assess things, the more hesitant you get to sort of be declarative with your assertions and the more humble I think you

become.

And that's a thing, that's a process. So I don't know, I think that would be the leading point with everyone is you're gonna need to be, you're gonna need to get used to being uncomfortable with uncertainty because that's life.

Howard

If you're not uncomfortable Jim, you're not doing it right.

Dr James Wilson

I love it. I love it. That's a good I think that's a good place to end this episode on.

Mark

It certainly is. Gentlemen, Dr. Wilson, thank you for your time. Howard, thanks for your time and everybody listening. We'll see you again soon. All the best. Bye bye.