

Policy 360 – Episode 106 – He Predicated a Pandemic

Judith Kelley: I'm Judith Kelley, I'm Dean of the Sanford School of Public Policy, and I think that even just a couple of months ago, three months ago, very few of us could have imagined the kind of world we're in right now. Very few of us could have imagined that we would purposely be walking around our neighbors, trying to socially distance ourselves. Very few of us could have imagined that we would have to work remotely, very few of us could have imagined that we would have to shop be certain hours if we're certain ages. In other words, very few of us could have imagined that the world would be gripped right now, by a global pandemic.

Judith Kelley: There is one person, however, who did imagine such a thing, not that long ago, and his name is Gavin Yamey. He sounded the alarm bells for this, back in 2018. He's a Professor here, at the Duke Sanford School of Public Policy, and also the director of Duke Center for Policy Impact in Global Health, among other roles that he holds. He serves on a couple of international health commissions, so he's really in the thick of this virus that's gripping our nation, and our world.

Judith Kelley: As we've truly hit pandemic levels with the numbers in the United States, currently going up on a daily basis, with 20,000 at least, and that's just the cases that have been tested. Yet, Gavin managed to foresee the possibility of this, and wrote an op ed titled The Odds of Epidemic Just Went Up.

Judith Kelley: So Gavin, welcome to Policy 360.

Gavin Yamey: Thank you, Judith, it's really good to be with you. I wish it were not under these very grim circumstances, but here we are. Yes, I did write that op ed two years ago, but I should say there were many other folks, not just me, within the academic community who, for many years, were worried that we, the international health and development community, were not doing enough. Our approaches, our interventions, our preparedness efforts were not commensurate with the size of the risk. None of us feel any sense of I told you so, none of us are feeling good about the situation, clearly. We feel only hollow pit in our stomachs, when so many of us were sounding the alarm for so many years, those pleas didn't resonate with those who could have funded a proper pandemic response system, fit for purpose.

Gavin Yamey: Now, perhaps that pandemic preparedness system will be put in place. That's not where we're at today, today we're still putting out the fire. But, there's a glimmer of hope that we might actually get our act together.

Judith Kelley: So tell us a little bit, Gavin, about what you actually wrote in that op ed? What did you say?

Gavin Yamey: Well, the immediate spark that stimulated me to write a piece was my concern that the Trump administration was really cutting back on funding pandemic preparedness efforts at a time when they should be stepping on the gas.

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Gavin Yamey: One of the problems, one of the paradoxes in global public health is what you could call this out of sight, out of mind paradox, right?

Judith Kelley: Right.

Gavin Yamey: When it's going well, we don't see anything, so there's a tendency to think, I'm investing all this money, and yet I'm not seeing anything for my efforts. That's exactly what you want.

Judith Kelley: What kind of cuts were they doing back then, Gavin?

Gavin Yamey: I mean, it's been death by a million cuts, really. There's a whole range of funding reductions that have happened under the Trump administration. Not just to national public health spending, but also to some of the global disease fighting efforts. For example, at the CDC, at HHS, even in the National Security Council. I mean, it has now been very well publicized that the Trump administration essentially fired the pandemic czar and his whole team, within the National Security Council.

Gavin Yamey: All of those measures made us less safe, and they increased the likelihood of a global pandemic. Now, the United States has done remarkable work, I would say, including through the so-called global health security agenda, in helping to get countries ready in reducing what's called the spark risk, the actual, initial spark that sets an epidemic or pandemic off.

Judith Kelley: No, I don't know what that is, so explain that a little bit?

Gavin Yamey: So, a pandemic begins with a spark, an event, a transmission typically from one animal to another, and then onto a human.

Judith Kelley: Okay, so we're talking about the actual spark event being what happened in that Wuhan market, a long time ago, in November?

Gavin Yamey: Yes, although there is still some uncertainty about the exact spark event, there is still a scientific debate about what the initial spark event was. You want to be able to put out the fire early, and for that you need, worldwide, the ability to conduct surveillance, the ability to diagnose a case, to do what's called contact tracing, where you contact those who've been in close proximity to someone's whose infected. You need all those capabilities at a national level, and the United States had done well in helping countries to get those capabilities in place. That's one of the things that was downgraded, those investments in national preparedness capabilities was downgraded.

Gavin Yamey: So, I wrote that piece two years ago, because of concerns about the Trump administration taking steps to cut funding for Obama era pandemic preparedness.

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- Judith Kelley: So, are you saying that, under Obama, we actually had systems in place, that we were better prepared? Like, if this had hit 10 years ago, would we have been in a better position to deal with it, and we were actually teaching other countries how to deal with it at that time?
- Gavin Yamey: I mean, there were a number of pieces of the puzzle that were in place, under Obama, that would have been helpful.
- Gavin Yamey: First of all, Obama had appointed an epidemic, or pandemic czar, Ronald Klain, in the White House. That really helped, because having a czar like that, who could then oversee all the different efforts, was very helpful. I think one that thing we have seen in the current pandemic crisis situation here in the US is there has been quite poor coordination between different agencies. There's also been very poor coordination, I think, be Federal government, and the states. That was one example.
- Gavin Yamey: The other example is that there was, essentially, a pandemic and epidemic monitoring command group. There was one inside DHS, the Department of Homeland Security, there was another inside the NSC, the National Security Council, and they were being advised by scientists. I think that whatever your politics, there was, during that Obama era, a greater trust in scientists, and trust in evidence, from the Obama administration. It was a government that valued science, and that valued evidence. We have, unfortunately, not seen that up until very recently, in the Trump administration response.
- Gavin Yamey: I mean, this administration knew what was coming, many months ago, everybody knew it was coming. It's really only until the last few weeks that we've started to see scientists, like Tony Fauci and Deborah Birx, who are very much visible now. But, we didn't have those independent, credible, scientific voices until very late. And I have to say, I think both of them, right now, have probably pulled us back from an even worse abyss. Clearly, we are facing a terrible abyss right now, we are the global epicenter, we have the largest number of cases. We completely dropped the ball, and we didn't have to be here.
- Gavin Yamey: One of the reasons I think we dropped the ball has been that the Trump administration has really denigrated science and evidence, I think to our enormous detriment.
- Judith Kelley: Do you think that's because we dropped the ball, and we didn't have the right infrastructure in place to coordinate, et cetera? We didn't have the right equipment in place? Or, is it also because there's a certain communication about science, as you say, that has made people less likely to adhere by guidelines? Or, how do you diagnose that?
- Gavin Yamey: Yes. I mean, to be honest, PhDs are going to be written about what happened, both in the United States and the United Kingdom, during that eight week

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window when both countries should have been, and could have been getting ready. They chose not to, and it's going to take some pretty serious empirical research to understand why.

Gavin Yamey: One can try and hypothesize right now. One obvious hypothesis is that both of these nations have recently, under Trump, and in Brexit Britain, turned inwards. There's been a rise in nationalism, a distrust of the multilateral institution.

Judith Kelley: Sure.

Gavin Yamey: Both countries ignored WHO's guidance and advice, both countries, I don't know, just seemed to not want to learn the lessons from what other countries were doing well. They turned inwards. Very early on in the pandemic, the President himself downplayed the risk, started talking about how cases here would magically disappear, and that we'd have zero cases soon. We lost a couple of months where very, very clearly, the writing was on the wall.

Gavin Yamey: We should have been scaling up testing dramatically, getting ready for testing. We should have been getting ready for all the things that we know needed to happen. Isolation, quarantine, contact tracing, we should have been scaling up personal protective equipment for healthcare workers. It is a national disgrace, a moral catastrophe, that we have not protected our health workers. They are risking their lives, day in, day out now, here in the United States. We should have been scaling up hospital beds, equipment that we needed, including ventilators. We should have been, essentially, practicing. We should have been doing simulations of, what would the Federal response look like? What would the chain of command look like? What would the chain of command look like between the states and the Federal government?

Gavin Yamey: I mean, we knew what was working elsewhere. In Singapore, for example, they've been having practically daily conference calls between the national government, regional managers, hospital managers, people are all singing from the same songbook. That was one of the lessons, we could have been learning that early on.

Gavin Yamey: I wrote a column for Time Magazine on this a couple of weeks ago. We could have chosen a South Korea model. South Korea did not do lockdown, and yet through, to be fair, basic public health measures, has been able to control its epidemic.

Judith Kelley: But Gavin, didn't South Korea also implement more stringent monitoring mechanisms that we might have been uncomfortable with?

Gavin Yamey: Sure. Look, here is the trade off. If you look to the countries that have successfully brought their epidemics under control,-

Judith Kelley: And you would say those are?

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Gavin Yamey: So, for examples, if you look at the countries, and jurisdictions, and regions that have managed to bring their epidemic under control, places like Singapore, Hong Kong, China, there are clearly a range of approaches that have been used. Some of which are replicable here in the United States, and some of which are not.

Gavin Yamey: Now, the reason that I think a lot of countries were looking to South Korea, but unfortunately for one reason or another, completely unfathomable to me, chose not to go down this route. The reason that we have been looking to South Korea is that it is an example of a country that did not do major lockdown, and yet were still able to control its epidemic.

Judith Kelley: Right.

Gavin Yamey: Now, that was from using basic public health measures. Within two weeks, they had a test. They were ramping up testing incredibly quickly. I mean, they were doing 15,000 to 20,000 tests a day.

Judith Kelley: Wow.

Gavin Yamey: At a time that we were, literally, hardly doing anything. It is true, they were doing really impressive contact tracing. Now they did, you're right, use GPS, they were using people's cell phone GPS, their car GPS, to basically try to figure out, did you have contact with someone who was infected. If so, let's get you tested.

Judith Kelley: Right.

Gavin Yamey: It's true. Is that something we would accept here, in the United States? I don't know. Although, right now the government is now saying that, in the best case scenario, if we do incredible social distancing, there will be between 100,000 and 200,000 deaths. They were all avoidable, those 200,000 deaths were avertable deaths. They are now seeing that as success. Now, that's absolutely tragic, I don't see how anyone could call that a success. Would we, as a nation, have been willing to say well okay, under these circumstances right now, perhaps we would be happy to use GPS? I don't know the answer to that question, I'm just saying these are the trade offs.

Gavin Yamey: But, it wasn't just that, right? It was incredible communication. The director of the CDC in South Korea, she should get a Nobel Prize, I think, for not just managing such a brilliant response, but her, and other leaders, they were brilliant at actually telling the country, "Here are the number of cases, here are the number of deaths, this is what you need to know."

Judith Kelley: Right.

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- Gavin Yamey: "This is what social distancing is, this is how you do hand washing." They were brilliant at that sort of communication. And then, they were using information and communication technologies in other very innovative ways.
- Gavin Yamey: They didn't do shutdowns, but when a person arrived in South Korea, they were asked to download an app on their phone, that then monitored their symptoms. If they were getting symptoms, they were told to report to a health authority. They were doing mass drive through testings, they would have 50 drive through centers. They were using these pods. I mean, they were just using the power of modern communication and information technologies, and also basic shoe leather public health and epidemiology. There is no mystery. You need to identify cases, isolate cases, and do contact tracing.
- Gavin Yamey: We decided, for some bizarre and inexplicable reasons, actually, here in the United States and the UK decided the same, that we wouldn't go down that route. It will be something that we're going to have to try and understand one day, that we didn't go down that route.
- Judith Kelley: But, it's not the just UK and the US. I mean, Italy, Germany is not doing so great. How do you think about the other European countries' response?
- Gavin Yamey: No, I think that's right. There was a fascinating piece in the New York Times the other weekend, on Germany, cases arising. Although it's death rate appears to be much lower, and there's much discussion about why that is. It is true that not everybody has done well, and there are clearly different reasons for that. You know, I think that this pandemic has shown us, worldwide actually, that we have all underplayed our risk.
- Gavin Yamey: After Ebola, one of the things that happened is that the global health community decided that it would come up with some scoring system, some tool, to try and measure a country's preparedness, right?
- Judith Kelley: Right.
- Gavin Yamey: It was called the Joint External Evaluation, so you would have external experts come to your country, and do an assessment of whether you were ready or not.
- Judith Kelley: Right.
- Gavin Yamey: We should be somewhat embarrassed about that, because countries like the United States and the United Kingdom, guess what? We actually seemed to score quite highly, we seemed to be remarkably good on those Joint External assessments. Other countries that, in the early stages of the epidemic actually are doing quite well, and scored poorly. So, there's some hubris here, right?
- Judith Kelley: Right.

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Gavin Yamey: All of us, worldwide, were inadequately prepared. I think if there's one thing that clearly needs to happen as a result of COVID-19, is that we need a massive realignment around our investments, our public policy investments, our public health investments, our global health investments. We were spending so little on getting countries, and getting the global system ready, and the investment that was required was relatively tiny, right?

Gavin Yamey: Most economists think that this is going to knock \$1 trillion, or \$2 trillion of global GDP this year.

Judith Kelley: Sure.

Gavin Yamey: If we had invested something like \$10 million a year, maybe more, maybe even if it was \$20 million dollars, that's a rounding error compared to the trillions of dollars of economic loss.

Judith Kelley: Right. And, would have been economic activity, to boot.

Gavin Yamey: Yeah, that's right. It would have been, for example, let's just take ... There's two planks to what I'm talking about. There's two planks to pandemic preparedness.

Gavin Yamey: One is the national plank, that I was talking about earlier. These national capabilities, building surveillance systems, and training public health workers, and all that sort of stuff.

Judith Kelley: Sure.

Gavin Yamey: Then, the other is the global plank, which is the research and development in diagnostics, and vaccines, and therapeutics. It's things like creating stockpiles of personal protective equipment.

Gavin Yamey: All of that, you're right, is economic activity, in and of itself. If we can get those two planks greatly strengthened, we'll be in a better position for the next one.

Judith Kelley: When I reflect a little bit on what you're saying, we were scoring very highly on this preparedness index, and it seems like scale of the epidemic has really surprised everyone. Were we looking at something like Ebola and saying, Ebola was fairly contained, it didn't travel at the speed that this travels at. Were we preparing for the wrong thing?

Gavin Yamey: Again, that's a really great question, Judith. My sense, trying to read between the lines, is that countries like the United States, many countries in Europe, I think felt it's not going to come here, or it's not going to happen here.

Judith Kelley: Right.

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- Gavin Yamey: Or, there was some sense that, I don't know, China was handling it poorly, or we would handle it better. Obviously, this is the kind of virus that spread unbelievably quickly, with modern international travel of course it's going to spread very quickly.
- Judith Kelley: Right.
- Gavin Yamey: It's highly transmissible, every infected person seems to give it to two or three others. It's deadly, it has a relatively high case fatality rate. So, that combination means it was inevitably going to spread, and I do think there was a sense that it was just not going to affect us. That there was something happening over there, that wouldn't happen over here.
- Gavin Yamey: I think what this new Coronavirus has taught us is there is no them, there is only us. The health of somebody elsewhere is my health, right? Your health is my health, and my health is your health. Right now, we can see how interconnected we all are.
- Judith Kelley: Right.
- Gavin Yamey: I think that, again, going forwards, ... Clearly, we're not right now in a position to think about preparedness systems, we're still putting out the fire, and I suspect we'll be putting out the fire, on and off, for the next 12 to 18 months, at the very least, until we get a vaccine. I think when we have a vaccine is when we can really put the fire out completely. But, until then, I think we are probably going to be putting out fires, on and off.
- Judith Kelley: So Gavin, I do want to talk a little bit about the future. But, before I do that, I want to ask whether anything can be said in our defense. Are there aspects of this pandemic, of this virus, that make it the perfect storm? Does it have characteristics that we don't see in the normal seasonal, or other types of viruses, that is contributing to its ability to overwhelm us?
- Gavin Yamey: Yes, that's a great question, Judith.
- Gavin Yamey: Those of us who've been concerned about a big one, a Spanish Flu, 1918 style pandemic, have been concerned about a microbe, a virus, that has a number of characteristics. So, high transmissibility,-
- Judith Kelley: Tick that one off, yes.
- Gavin Yamey: In other words, if you're infected, you're going to give it to many people.
- Judith Kelley: Check.
- Gavin Yamey: Together with a high what's called case fatality rate. That's the proportion of people with the disease who die from it.

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Judith Kelley: Check we think, right? But, we're not quite sure though, because we don't know how many people are actually sick?

Gavin Yamey: That's absolutely right, we actually don't know the proportion of people with the illness exactly, who die from it. Clearly, our initial estimates from Wuhan were very high. The initial estimates, obviously, tended to come from hospitalized patients, not from community samples. As we get better data, in many ways we're downgrading the case fatality rate. Nevertheless, it is much higher than the case fatality rate of seasonal flu.

Gavin Yamey: The other quality is that it is the case that transmission can happen in people who are asymptomatic, they have no symptoms, or pre-symptomatic, they haven't yet developed those symptoms. Now, that can happen in other diseases, in can happen in seasonal flu. People without symptoms can have flu, shed the virus, and transmit the disease. But certainly, people with symptoms, with seasonal flu symptoms, are much more likely to transmit the disease. It has had those features, that have made it transmissible, fatal, difficult to follow it's spread. A perfect storm, if you like.

Judith Kelley: Right. So, much we don't know yet. I mean, we're in the middle of a pandemic, and we still don't know whether or not you can catch it a second time, we don't know if you're building up immunity, we don't know many of these things.

Judith Kelley: So, when we talk a little bit about the future, Gavin, we're now seeing these projections of peaks. In New York, they're predicting the peak nine or 10 days from now. In North Carolina, they're predicting the peak about three weeks from now. Most of these predictions have us petering out, as a country, at the end of June sometime, we should be really having this thing under control. That confuses me, because presumably we haven't had a level herd immunity by then. So, why is it that we're expecting these peaks to pass so relatively quickly right now, in the modeling?

Gavin Yamey: Well, I think that there are many unknowns. Certainly, a lot is going to depend on what measure we put in place now, right?

Judith Kelley: Right.

Gavin Yamey: The key is to know whether the number of new infections per day is leveling off, and then ideally starting to fall.

Judith Kelley: Right.

Gavin Yamey: Right now, in many parts of the United States, the number of new infections per day is doubling every, roughly, three to four days.

Judith Kelley: Yes.

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Gavin Yamey: Right? So, we are still on an upward trajectory.

Judith Kelley: Right.

Gavin Yamey: What we are trying to do, what we are hoping to see, through the various suppression measures that we are putting in place is for that to start leveling off.

Gavin Yamey: So, for example if you see, let's just say 100 new infections per day in a city, then 110 infections per day the next day, then 120 infections per day the next day, clearly you are still on the upward trajectory.

Judith Kelley: Sure.

Gavin Yamey: But then, you hope to see, oh okay, the following day, it's still 120 new infections, the next day it's still 120 new infections. You're starting to see, perhaps, a leveling off, the next day 120 infections. Then, the next day, hopefully 110 new infections, then maybe 100 infections. Then, you're on the downward trajectory.

Judith Kelley: Right.

Gavin Yamey: That is what we are trying to do, that is obviously what the South Korean experience shows is possible with aggressive suppression measures. We are clearly not there yet, in the United States, but that is what we are trying to do. The hope is that, with the suppression measures that are being put in place, that's how we're going to get there.

Gavin Yamey: It is a concern, obviously, that these measures have been so patchwork across the country. It is, in my view, a great mistake, and a great sadness, that we didn't have national suppression measures in place. There have been long delays in some states. You will have seen, I think, a study from the Institute of Health Metrics and Evaluation, at the University of Washington, a very intriguing study that looks at whether politics was at play in when suppression measures were started, and indeed they were. If you had a Republican Governor, and a high proportion of Trump voters in a state, suppression measures were delayed.

Gavin Yamey: What this patchwork means is that, unfortunately, we are likely to see the peaks happening, the leveling off happening, and the decline happening, at different stages, all around the country.

Judith Kelley: Right.

Gavin Yamey: Clearly, we saw the first major epicenter in the US in Seattle, then it was in New York. All eyes are now on the South.

Judith Kelley: Right.

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- Gavin Yamey: So, you're likely to see these waves across the United States that, in fact, partly reflects when these suppression measures were put in place.
- Gavin Yamey: One of the \$1 million questions, and there are many as you said, there are so many unanswered questions, is what happens next?
- Judith Kelley: Yes.
- Gavin Yamey: There is no way that we can be in lockdown for 18 months whilst we wait for a vaccine. But, the question is what happens when you start to relax these suppression measures?
- Judith Kelley: Right, because the models we're seeing right now, Gavin, they look like by July, we're going to have very few cases, new cases. It's going to be under control, but that's assuming we're all still Zooming, and working from home, and washing our hands, and on and on.
- Gavin Yamey: So, here is my take, the most likely scenario is that if you relax suppression without having massively scaled up the ability to do testing, isolation, contact tracing, quarantine,-
- Judith Kelley: Monitoring, yes.
- Gavin Yamey: If you do not have that in place, and you relax suppression, the epidemic will come back roaring.
- Judith Kelley: Right.
- Gavin Yamey: So to me, the lessons from elsewhere are that relaxing suppression without the ability to test, and without other pieces in place, ... hospital capacity, ICU capacity, ventilator capacity, would be a disaster.
- Gavin Yamey: Now, it's very clear that whilst the Trump administration, Donald Trump in particular, wanted to open America up by Easter, all the reporting suggests that he was shocked by data showing what would happen if he did that. I'm delighted that, presumably, Tony Fauci and Deborah Birx were able to persuade him to extend the national advice on social distancing until the end of April.
- Gavin Yamey: I worry that we will still not be there, in terms of all the pieces that I mentioned that need to be in place. I worry that we still won't be there by the end of April. Many public health experts, many epidemiologists are suggesting that this kind of lockdown really needs to be for several months, whilst we get our testing in order. Look, we need to be able to know, Judith, whose infected, whose immune, who doesn't have it.
- Gavin Yamey: If we can distinguish between those people, we can say, "Oh, you're immune, it's fine for you to go back to work. You're infected, uh-oh. We absolutely need

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to isolate you. Now, we need to contact everybody who you've been in close contact with, and test them." We also, if people have been exposed and we're waiting to find out whether they're going to actually prove to positive, they should be quarantined. Until we can do that, until we can distinguish between those who have the infection and those who don't, and those who are immune, I think if we release suppression, the virus is going to come back with a vengeance.

Judith Kelley: What's your best guess about what life is going to be like for us in August, September?

Gavin Yamey: I think a likely scenario for the United States is that by August, say, we will have relaxed suppression measures in some places, but perhaps not in others. I think all the signs from the Federal government are that they want to try and essentially relax suppression measures in places that are relatively low risk, but perhaps maintain them in places that are still clearly high risk, or still battling the outbreak.

Gavin Yamey: I don't know if that's doable, but that would appear what they are aiming for. Deborah Birx has publicly spoken about this, trying to differentiate, or categorize regions into high, medium, and low risk regions. So, my hunch is that is what the Federal government is going to try and do. Again, I think that if we can scale up testing aggressively, if we can distinguish between who is infected, who is immune, and who is not, then I think that that strategy might work. If we can't, then I think that strategy is doomed to failure.

Gavin Yamey: Regardless of what strategy the United States adopts, my prediction is, and the prediction of many other folks working in public health, many other epidemiologists, is that when we begin relaxing these measures, these suppression measures, it does seem inevitable that there are going to be outbreaks, localized outbreaks again. So, my hunch is that we are going to see, until we get a vaccine, we are going to see an era of putting out the fire through these suppression measures, and then relaxing them. Then, you might see another outbreak again locally, put out the fire, relax the suppression measures again.

Gavin Yamey: I suspect we are going to see cycles like this, waves like this, until we have a pandemic vaccine, a COVID-19 vaccine. Even if we get the COVID-19 vaccine, which I think is very likely within 12 to 18 months, just having a vaccine alone is not going to be enough. We need to make sure that everybody who needs the vaccine, worldwide, has access to it.

Judith Kelley: Right.

Gavin Yamey: It needs to be freely available at the point of care for everybody in the world. I'm deeply concerned that that's not going to happen. I'm very concerned that what's going to happen is that high income countries are going to enter into

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bilateral purchase agreements with companies who manufacture the vaccine, in order to monopolize it. We saw this happen during Swine Flu in 2009, rich countries monopolized the vaccine, poor countries were left behind. They got the vaccine later, and they got less of it.

Gavin Yamey: Unless we make this vaccine globally available, we are not going to be able to end the pandemic because, to repeat the mantra, an outbreak anywhere is an outbreak everywhere.

Judith Kelley: Right.

Gavin Yamey: We are all in this together, and like ships on an ocean, we're going to rise and fall together. This needs to be a global public good, and I'm involved in efforts to think through how that's going to happen.

Gavin Yamey: In fact, today in the Lancet, I coauthored a piece with my colleagues here at the Center For Policy Impact On Global at Duke, along with the CEO of CEPI, that's the Coalition for Epidemic Preparedness Innovations, that are developing vaccines, colleagues at the World Bank, including Muhammad Pate, who is both a Duke professor, but more importantly the director of health, nutrition, and population at the World Bank, Feng Zhao, and Marco [inaudible 00:36:37], one of my colleagues from Germany. We have a piece in today's Lancet coming out at 6:30 PM tonight, on the steps that we could put in place to ensure that vaccine is a global public good, and not a commodity that is monopolized by rich countries.

Judith Kelley: Well, I certainly hope you are successful in catching the attention of policy makers with that. As I said, these are also investments in the global health industry, this is good economic activity for a good end.

Gavin Yamey: Yes. Judith, you raise a really good point. One of the things that we think is going to be critical is that the manufacturing of this vaccine shouldn't just be happening in rich countries.

Judith Kelley: Right.

Gavin Yamey: Here is an opportunity for low and middle income country vaccine manufacturers, right? Very, very good for the economy, to create a global consortium of vaccine manufacturers. So, there needs to be tech transfer, IT transfer to make that happen.

Judith Kelley: Well Gavin, thank you so much for your time. It's been a real treat to be able to tap into your expertise. We all have so many questions right now. I guess, the one thing that we know for sure is that the future will remain uncertain.

Gavin Yamey: Yes. Although, there are three things that are certain, of course. It's death, taxes, and another pandemic.

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Judith Kelley: Well, at least now taxes have been delayed. Maybe death will get delayed too, and a couple of other things. Who knows?

Gavin Yamey: Yes, hopefully. That's true, taxes have been delayed. But, our epidemics and pandemics have been getting more frequent this century, and they will continue to get more frequent. I hope that will lead to a realignment of our priorities.

Judith Kelley: Indeed. So Gavin Yamey, thank you so much for your time with us. Gavin is a professor here, at the Duke Sanford School of Public Policy, and also director of Duke's Center for Policy Impact and Global Health, here at Duke University. He has other roles, as well.

Gavin Yamey: Judith, there's one other role that I think it's important to mention, and that is that I'm a volunteer DJ for WXTU, Duke's community radio. That station is shut down, sadly. We have an automated DJ called Auto, that is spinning tunes. But, when things return to normal, your listeners can listen to my show, Professor G's Musical Odyssey, every Thursday from four to six PM, at WXDU.org.

Gavin Yamey: For the moment, on my Twitter page, each day I'm tweeting about music that nourishes the soul. So far, I think I've tweeted out about 20 albums, and I will keep that going.

Judith Kelley: Well, I think it's important that we all find our hobbies and things to do, in this time. I'm glad that you've got yours, and I hope that you can soon get back to being Professor G at the WXDU 88.7 Duke University radio station.

Judith Kelley: Gavin, thank you so much for being with me today. We'll be back soon, with another conversation, I'm Judith Kelley.