OC5_3-13 how_we_can_be_prepared

[00:00:17.23] So what could we do better for the future pandemics, then?

[00:00:21.38] So much.

[00:00:22.04] [LAUGHTER]

[00:00:24.71] Richard, any thoughts?

[00:00:28.97] It's tricky. So I think probably the main difference is that the very start of this pandemic was when things weren't set up amazingly. Testing wasn't what it was at the end. So in the UK, there was quite a good testing.

[00:00:43.95] So I got coronavirus myself, and I was tested, I think, that day. I did a lateral flow test and had a PCR test that day, and then got the result the next day. And I think at the very start of the pandemic, I'm pretty sure it wasn't like that. I didn't get it then. But the amount of sequences that were generated then were nothing compared to what was generated later on.

[00:01:05.73] But these things do take time to build. It's not like you can suddenly create this infrastructure. Whereas back then, a lot of places have got sequencing machines now that they didn't have before, and they've got people that know how to run them. And there's all these nice pipelines available that can be tweaked to a new virus or a new strain of COVID.

[00:01:24.08] So I think things are set up a lot better now to be able to deal with another pandemic. And I think the public itself is now just aware of what happens. So if you'd said five years ago that there's going to be a lockdown, no one's going to be allowed out their house for three months, people wouldn't have believed you that that was going to happen.

[00:01:41.75] [LAUGHTER]

[00:01:43.08] I think in the UK it was that you were allowed out of the house for one hour a day?

[00:01:46.75] [INTERPOSING VOICES]

[00:01:47.59] You'd just be like, that's crazy. That's not going to happen. But it did, and people dealt with it. And so I think people are prepared a lot better now, both public and scientifically, I think.

[00:01:59.01] I think we need to do better with scientific literacy from a much earlier age, because I think people are too easily misled and misinformed. And I think simple things-- I forget who mentioned it, but the difference between what's possible and what's probable is a very simple thing that people don't get. And I think we just need to do a better job from much earlier in just increasing scientific literacy. And then, so then, when we have these sorts of-- have to make these sort of decisions about lockdowns, or about wearing masks and stuff like that, it just makes more sense to people. A lot of education, I think, is needed.

[00:02:40.20] And I would absolutely second that. I mean, in some countries like in the US, we can actually see the role that misinformation has played. You can stratify by political affiliation and by deaths. And I mean, that's terrible. That shouldn't be a predictor of whether you felt you could take the measures that would protect you or whether you have been told that those are a conspiracy. That's really damaging. So we have to act on that.

[00:03:03.27] The other thing that I would add-- because I agree with everything that has been said-- but the other thing I would add is I do think we have to work on building better bridges between the science we can do and how we can actually make that into policy that will then do the work of saving the lives. The science alone is not what saves the lives. It's putting it into action that helps. And certainly, to me, this was one of my big surprises in the pandemic.

[00:03:25.91] I never had a dreamy-eyed experience that I thought that science and government would just hold hands and run through a field together.

[00:03:32.39] [LAUGHTER]

[00:03:32.63] But it was much worse than I ever predicted. It was really difficult, especially at the beginning, to feel like you had the trust of politicians and to feel like the things that you were telling them would really be actioned. And I think a lot of that just comes from the fact that, certainly in Switzerland, this was just not an interaction that-- it wasn't a well-worn path. There never needed to really be much direct interaction, particularly for pathogen scientists. Maybe with climate scientists, or geological scientists, but not with me, not with pathogen scientists.

[00:04:06.08] And so there just wasn't an existing trust there. There wasn't an existing framework that we could build on to go forward and decide what to do. And I think that is something we have to build up-- you have to build that before you need it. So I'd love to see more work on that before we need it next time.

[00:04:20.93] Well, we've covered many topics. We've talked about the science policy, how to communicate, how to do better training. But what else we should consider for the future work, for future pandemics?

[00:04:33.57] So for me, I think one of the things that-- I always think about the fact that the reason that we were able to do any of this work in a reasonably short time frame was because of the research that we had done before. So this is not research that was immediately applicable. It's basic science research, looking at how viruses evolve and all the rest of it. And there needs to be a recognition that you don't get to that next step unless you support that basic research-- and not just for the knowledge that it generates, but for the expertise.

[00:05:07.92] So we had people, when this pandemic started in our public health system, they didn't have real-time PCR. But we had people at the university-- students, post-docs-- who had that skill just because of their research work. And they were able to step into the breach and do the testing for the country for several months, and then train others.

[00:05:29.97] So I think that you just have to remember that during the quiet times, we really need that support. And I think that applies to this whole software issue as well. You need that

support during the quiet times in order so it's there, it's ready, when it's needed. That's, you know, I would say.

[00:05:46.90]

[00:05:47.56] Richard?

[00:05:49.37] If you think about the way UK academia is set up, it's a lot of short-term contracts, certainly for the postdocs. So there's a danger that all your people that you've trained up that can do all this, if we imagine the pandemic will end-- let's imagine.

[00:06:04.64] [INTERPOSING VOICES]

[00:06:04.94] [LAUGHTER]

[00:06:05.24] Hope, hope. Then, there's probably a good chance that all these people you trained are going to leave, disseminate, and move on. And so if there is, say, another pandemic of another virus, or the same one, in 10 years, then there's a good chance you've lost all your skills. And I don't think you'll be in the same boat again, but you're going to have a people shortage, probably, where you're going to need-- so it's probably important to keep training people so that they know, that you don't have a gap in that knowledge, that there are people able to step into the breach sort of thing. Where if that's the RT-PCR training, lab training.

[00:06:44.66] Sequencing.

[00:06:44.93] Sequencing. Bioinformatics.

[00:06:45.98] Bioinformatics.

[00:06:47.88] Yeah, to cover all these sort of bases, that, it's called epidemic preparedness, isn't it?

[00:06:53.21] Yes.

[00:06:54.08] So it's you're preparing for the next one.

[00:06:56.45] Yeah.

[00:06:57.07] Yeah.

[00:06:57.62] No, no, I would agree. I think we have to avoid this kind of burst and then bust mentality, where something comes along, and so we're all interested, and we invest in a lot, but then, in between, it can be hard to get funding for lot of viruses. And this is what we really need when a virus comes along that is scary. If we don't have that background, we're in a really different position.

[00:07:19.25] And I also think when it comes to preparedness just more generally, I would like to see more discussion, as well as the many discussions around policy, and media, and funding, and these kinds of things, also to think about how we can make sure that things that

didn't work so well in this pandemic will work better next time. So some key things that always come to my mind are, certainly in Europe and the UK, we had a pipette tip shortage, and a mask shortage, and a reagent shortage. And this is crazy, but we never made plans to make sure that we had enough of these fairly routine lab items in a lot of ways.

[00:07:56.33] And at least so far, in a lot of the pandemic preparedness talks that I've had, I haven't seen that these really basic stuff has been worked in. But it's critical because if we don't have the pipette tips, we're not doing any other science. You have to have that basic thing there.

[00:08:10.73] And the other one that often jumps to my mind that's tied in with the funding is, how quickly can we get money when we have an emergency? Because for a lot of countries, there were some funding agencies that did amazing, but for a lot of countries, people had to start doing the sequencing and this work in designing tests just on the money they had.

[00:08:27.77] And it was still like, OK, turn in an application, and we'll let you know in three months. I mean, three months, in March 2020, was an eternity. So how, next time, can we make sure that when we have something this big that happens, we can support scientists straight away to switch over and start doing that work, and not like, OK, we'll let you know in three months and release the money in six? We need to be able to be more reactive.