

International Perspectives on Pandemic Preparedness and Response

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Online meeting, Berlin

– Transcription of the English original version –

Note: The following text is not a verbatim transcription. It has been edited slightly for better readability.

The video recording of the event can be accessed on our website at

<https://www.ethikrat.org/anhoeerungen/internationale-perspektiven-der-pandemiepraevention-und-bewaeltigung>.

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Welcome address

Alena Buyx · Chair of the German Ethics Council

Welcome everyone, dear colleagues, dear guests, dear viewers. It's my pleasure today to welcome you as Chair of the German Ethics Council to our public hearing on International Perspectives on Pandemic Preparedness and Response. I think many of you share this feeling that we are starting to feel hopeful again these days, with the pandemic situation seeming to ease, at least in Germany. But many of you probably also remember that we've been here before, we've been hopeful, and then things went quite wrong. And we also know that, across the world, the pandemic is not easing up. Indeed, the situation is quite dramatic in many regions of the world. Things have gone right in this pandemic, reference to the wonderful vaccines, safe and effective, that have been developed, is surely warranted at this point, but many things have not. And we have to learn from that. We have to be better. We need to be prepared. We need to avoid a situation like this pandemic again; and if we should ever get into a situation such as this again, we need to respond and react better. And so I am delighted today to welcome a wonderful group of highly distinguished guests to help us learn. Because we cannot just look at our national situation – we have to broaden our view and learn from other countries, from their experiences, what they would recommend us. So I am very pleased that we have this hearing here today. Before we start, just a few organisational things. This is part of a working process within the Working Group on Pandemics. Thank you to the Working Group for developing the event. However, that also means it really is part of our work and it is a public event, second. So, we have chosen, unlike with previous such hearings,

a very traditional form. We do not have a participatory element, the way we've always had it in the past, a live chat where viewers can ask questions, because this is us being selfish. We need to ask experts as part of the Working Group and the work process, and the questions that we need asked and answered. That said, I encourage you to use the hashtag #pandemicresponse and ask questions on Twitter, some of us are quite active there. And if time permits, we will try and incorporate it into the discussion. We have three livestreams, an English original, a German translation and a German translation with subtitles for people who are deaf or hard of hearing. Everything will be documented. You will find the streams and all the materials on our website, and if you need to leave us or want to recommend us to somebody else, you can enjoy the event in the future. That's it from me. I only had two minutes, so I will gladly hand over to our chairs, Andreas Kruse and Frauke Rostalski, two members of the Council who will guide us through this afternoon. Frauke Rostalski will now explain a little more about how we will proceed, and also introduce our speakers. I am looking forward to it. Thank you all so much for coming and for participating. Frauke Rostalski, over to you. Thank you.

Frauke Rostalski

Thank you very much. From my side, I would like to warmly welcome our experts, Ross Upshur, Jonathan Montgomery and Felix Stein, the members of the German Ethics Council, as well as our viewers online. The Covid-19 pandemic has held the world captive for over a year now. A great number of victims have been mourned, while the end of the pandemic is not yet in sight. Once it is finally reached, one question will stand above all others: What lessons are to be drawn? What can we learn from

the past months in order to be prepared for similar crises in the future, whether they are caused by further pandemics or the consequences of climate change? The answer may well be of great importance, not least for the situation that we find ourselves in today, as we do not yet know for how much longer Covid will continue to dominate our daily lives. The lessons learned from the past few months can also have a decisive influence on our current approach on the pandemic. The German Ethics Council has addressed these questions, it has issued a statement at a particularly early stage of the pandemic, highlighting in particular the conflicts that the pandemic is provoking between different, often competing, individual interests. Not even life itself is an absolute value protected at all costs. The right balance must be found between civil liberties on the one hand, and the protection of health and life on the other. In this respect, the German Ethics Council has quite rightly called for the permanent monitoring of the necessity and the proportionality of the measures taken. The difficulty, of course, lies in the considerable and the proportionality of the measures taken and their necessity. The difficulty, of course, lies in this. So, how dangerous, for example, is the virus? Who is particularly affected by it, and for what reasons? And also, which measures are actually effective in dealing with Covid-19? Today, we have certainly made some progress with regard to these aspects. In drawing conclusions, however, it is worth having a look beyond national borders. That is one of the main purposes of our expert hearing today. The experts we have the honour of questioning today can provide us with answers about how the pandemic was dealt with around the world, what has proven to be effective and what has not. Next to the effectiveness of certain measures or specific

vaccination strategies, this applies not least to the assessment of the degree of risk aversion displayed in dealing with Covid-19. The concept of vulnerability is particularly important in this context. It is overly simplistic to assume that only those whose health and lives are particularly endangered by the virus are vulnerable in this sense. Certainly, children, whose right to education is severely impaired by the closure of schools and day-care centres, to give just one example, are also vulnerable. We will therefore also ask our experts for their views on how the fight against the pandemic can be conducted in the fairest possible way. I do not want to anticipate any further questions. I am very much looking forward to the assessments that our invited experts will share with us today. In advance, I would like to thank you very much for finding time for this hearing at such short notice. It is also my duty to briefly explain the procedure. We have invited three experts today who each have 20 minutes for their statement. This will be followed by another 20 minutes in which the Council members can address their questions. I am sharing the moderation with my esteemed Council colleague, Professor Andreas Kruse. The first speaker today is Professor Ross Upshur. He holds a professorship in Public Health at the University of Toronto in Canada. He also chairs the World Health Organization Working Group on Ethics and Covid-19. Time is short, so I will take the liberty of referring you to the conference folder for more information on our first speaker. Professor Upshur, I am pleased that you are here today and I hereby give you the floor.

Ethical Issues in the Covid-19 Pandemic: Are Lessons ever Learned?

**Ross Upshur · University of Toronto,
Dalla Lana School of Public Health**

Thank you. It is a very great honour and privilege to be with you today. I greatly admire the work that your Council does and we have drawn on it in our work at the World Health Organization.

(Slide: Ethical issues in the COVID-19 pandemic: Are lessons ever learned?)

Today, I will speak not on behalf of the World Health Organization, but I will give my own views. So please do not attribute anything I say to that Working Group. I am going to actually focus in on this question about lessons learned, and this will be one of the themes. I may not directly answer any of the several questions that were posed, but hopefully, in our discussion, we can come to this.

(Slide: Albert Camus: *The Plague*)

So I want to start with two quotations from Albert Camus's book *The Plague*, and I encouraged people to read this early in the pandemic until it became clear that we are actually living the narrative of the book itself. It makes two observations. It says everybody knows that pestilences have a way of recurring in the world, yet somehow we find it hard to believe in ones that crash down on our heads from the blue sky. There have been as many plagues as wars in history, yet always plagues and wars take people equally by surprise.

(Slide: COVID-19: Make it the Last Pandemic)

Now, why is this resonant? Because these exact sentiments were expressed in the Independent Panel Report that was released, I believe, two weeks ago. And I encourage your Council to

take a very close look at this and see where the ethical issues actually don't totally surface, but are in the background.

(Slide: But the world cannot afford ...)

They make the following claims: We cannot focus only on Covid-19, and, as in the framing comments, we need to look towards the future, about the next pandemic. But they say, and they make this claim, Covid has been a terrible wake-up call. So now the world needs to wake up and commit to clear targets, additional resources, new measures and strong leadership to prepare for the future. We have been warned.

(Slide: Sirleaf said: ...)

And in an interview with the Co-Chair, former President of Liberia Sirleaf said: The situation we find ourselves in today could have been prevented. An outbreak of a new pathogen has killed more than 3.25 million people, it's due to a myriad of failures, gaps and delays in preparedness and response. This was partly due to failure to learn from the past.

(Slide: SARS!)

Now, in a longer version of this talk, I go back actually to the plague of Athens. I have been studying ethics and infectious disease for close to 30 years as a public health physician and someone involved in ethics and medicine. And SARS 2003 had a particularly dramatic effect on the city of Toronto. It was one of the most badly affected cities in SARS-1. And there we see, I've put up for illustrative purposes, everybody now is familiar with this picture of the plague doctor, with his gloves, gown, mask, pointed stick for approaching the suppurating buboes of bubonic plague and a mask with [...], because in the conditions of the time, there was not much ventilation and it was quite dramatic.

(Slide: TIME, Newsweek)

These are headlines that are covers from two major news magazines in North America from May 2003. We were supposed to be in the New Age of Epidemics. There were a series of questions that we needed to know the truth about, why the virus spreads, whether China was covering up information, and how scared should we be.

(Slide: person with mask and face shield)

And, of course, in the evolution of time and, I would like to focus on a lot of work on our duty of care of healthcare professionals, not much has changed in terms of the structural nature of personal protective equipment for healthcare workers, except for the advent of plastics and the absence of a poultice.

(Slide: fire, train)

After SARS in 2003, there was great concern about the emergence of H5N1 avian influenza, and many countries started to work on pandemic preparedness. But there was a particular focus on poultry as a means of amplifying the viral evolution. And countries started to monitor borders, and here are two gentlemen who are the only ones at risk. I'm not sure what they are spraying at each other, but, as I like to point out, I've not seen birds hitchhiking on top of trains. They are usually several metres above.

(Slide: pig, child with pigs)

We did not get H5N1, we got H1N1, the so-called swine flu in 2009.

(Slide: newspaper)

Swine flu posed a series of stressors on health systems globally, including concerns that we would overrun intensive care capacity, that we would need to stockpile ventilators, that we were unready for another wave, that it was going to be costly and certain sectors of the economy,

particularly in the case of H1N1, pork producers and hog farmers were taking it particular, these are all in the sidebar there, and you shouldn't actually congregate to get flu, you should stay away from each other and wash your hands.

(Slide: Ebola)

After that, we had Ebola. Ebola was considered by the United Nations at the time in 2014 the greatest challenge to security.

(Slide: website CBC news)

It carried a great threat, and we see the same parallelism between what we found in 2014 and 2020/21. We need major cooperation on peace and security.

(Slide: BBC News Africa)

In 2014, in September, Sierra Leone conducted a three-day lockdown. It was the first time a lockdown measure had been used in a major urban area for disease control in recent memory. And I juxtapose pictures of empty streets in Sierra Leone and in the United States when more or less lockdown procedures occurred.

(Slide: Liberia Ebola survivors)

Massive impact on persons and massive impact on people who became ill and survived, so again, Ebola survivors were facing health problems and fears of reinfection. And we see the same thing in Covid, with concerns about reinfection and long Covid.

(Slide: Seoul a ghost town)

And we would be remiss not to mention MERS and Zika, two other major infections that have occurred.

(Slide: Lessons learned?)

So all of these have spawned. So after Ebola, since when I started to wonder about this question about learning lessons, there was a massive outpouring of publications on lessons

learned. In fact, Bill Gates had a major paper and both the New England Journal of Medicine and the New York Times were talking about what lessons from Ebola should be for the next epidemic, and major organisations such as Médecins Sans Frontières and others started to publish these documents.

(Slide: The New York Times)

However, this isn't the first time we have been through this. So again, one of the lessons of SARS-1, that it was a global wake-up call for global health; and the same thing for swine flu, another global wake-up call.

(Slide: Archived: Lessons Learned Review)

And, of course, when we have a wake-up call, we need to learn lessons, and Canada is particularly good at learning lessons, but you would be hard pressed to find those lessons, because the documents have been archived. So after both SARS and H1N1, there were extensive reports, extensive commissions providing recommendations for future pandemics and, as you can see here, if you go to find them on the government website, they are archived and you have to look elsewhere to find them.

(Slide: Search results)

And, of course, you've heard the same discourse before the release of the Independent Panel Report that Covid must be a global wake-up call and we need to learn lessons.

(Slide: A Public Health Emergency of International Concern)

So this is just a graph indicating the number of Public Health Emergencies of International Concern that have been issued since the revision of the International Health Regulations after SARS in 2005. And the title there is a direct quotation from the Independent Panel Report: A Public Health Emergency of International

Concern (PHEIC) is the loudest alarm that can be sounded by the WHO Director-General. So if the loudest alarm is meant to wake us up, the alarm has been ringing fairly consistently since 2014. When people forget, there's say, Public Health Emergency of International Concern regarding Polio that is still ongoing, but you can see there, we've had two Ebola, we've had Zika, and now we've had SARS-CoV-2.

(Slide: The most important lesson ...)

So after Ebola, I started to get concerned about this trope of learning lessons and wake-up calls. And in a somewhat grumpy blog, and a companion paper, with a colleague of mine, I wrote that the most important lesson that we learned from our experience with pandemics is that we do not like to learn lessons. We tend to fall asleep very quickly, and we need to "learn" the lessons all over again when the next outbreak emerges. So we all either have collective amnesia or collective narcolepsy. And, in fact, I'm looking for the least unit of collective human memory, because even within the Covid-19, SARS-CoV-2 outbreak, I've been asked the same questions that I was asked a year ago by the media, when the answers have not changed.

(Slide: Learning Lessons from COVID-19 ...)

We have articulated this in two papers, the one initially published in Public Health Ethics in that actually our analysis is that most of the lessons that we failed to learn are deeply normative lessons, and that's why I direct your Council's attention to that Independent Panel Report, because if you do a word search, you will not find the word "ethics". In fact, in a small companion study that I did looking at WHO technical documents for the extent to which ethics is engaged within the technical reports, you find the same paucity of interaction.

(Slide: Pandemic Playbook)

So what I'm going to argue is that there is something called the pandemic playbook. In fact, in each of these outbreaks, and if you go back, you see five characteristic epidemic events, all of which have associated ethical issues. Early on in a pandemic, you typically have high morbidity and mortality of both healthcare providers and in caregivers. So, the people closest, that's the nature of infections. This raises issues around duty to care and the duty to protect healthcare workers. You often are faced with high levels of uncertainty, lack of clear evidence and guidance on how to respond. This leads to the need for research, which raises the issues of research ethics and whether you ought to have pandemic exceptionalism, that is, you lessen human subjects, requirements and ethics oversight due to the urgency of the pandemic. If you don't have medical countermeasures, you have to use public health measures, and public health measures require the restriction of commonly accepted and well-recognised civil liberties. So that brings us into the domain of public health ethics and how we think about justifying these restrictions, and some of the issues around, proportionality, least restrictive means, reciprocity, transparency, a harm principle, precautionary action. We are going to face scarcity, which means we're going to have to talk about resource allocation and priority setting. And, of course, if it's a pandemic, it's a global issue, which means that we are going to have to talk about issues in solidarity, equity and how the world is currently structured.

(Slide: Guidance for Managing Ethical Issues ...)

Now, the pandemic playbook has been well known, and there is absolutely no shortage of ethics guidance that speaks to each and every one of those points. In fact, I've been involved in

three or four of these, the green book and on research ethics issues and ethical issues in pandemic influenza, and I have to commend my colleagues at the Nuffield Council in the UK because they published their report, *Research in global health emergencies*, on the 28th of January, two days before the Public Health Emergency of International Concern was made for SARS-CoV-2. So when the WHO R&D Blueprint came to Geneva and, as Co-Chair of the Committee, I thought the ethics community was in good shape. We'd actually thought through a lot of these issues.

(Slide: Evidence and Effectiveness in Decision-making ...)

We'd published, my own team has published dozens of papers to peer-reviewed journals, looking at all of these different dimensions, (Slide: "Stand on Guard for Thee" Report) and we actually had created, after SARS, informed very much by SARS-1 and in the prelude to any concern for pandemic influenza, a report on preparedness planning for pandemic influenza. And when we went back to sort of re-evaluate the issues that we discussed in that report, the recommendations we made, the values we identified and the procedural values that we had discussed, that it actually stands us in good stead for thinking through Covid.

(Slide: Key Concepts)

But there's a problem. The key concepts and norms that we had started to think through at that time were around community engagement, trust, reciprocity, solidarity and equity, which we can discuss in a little more detail.

(Slide: Conclusion)

But there are problems here. Ethical issues are constitutive to pandemic response, but they are poorly integrated into response plans. In fact, it's

hard to find leaders... Leaders and policymakers like to use language that draws on ethical concepts. They will say something is a moral catastrophe or this is a threat to equity, but they rarely have a framework or a set of reasoning to anchor it to. There has been abundant research and guidance on all elements of what I've called the pandemic playbook, but for the most part, and again, I invite you to look at that Independent Panel Report, ethical issues are not recognised as such, and therefore not explicitly addressed and therefore analysed as such.

(Slide: How can ethics be better engaged?)

So how can ethics be better engaged? And this is where I think we who work in the ethics world, and I sort of straddle both the world of practice and the world of academic reflection on these... So, despite complaints, I mean, nobody tends to like research ethics boards, everybody acknowledges and recognises the importance of research ethics guidance and draws on all of those guidance documents and has systems in place to ensure that research ethics and ethic scrutiny is part of the research ecosystem. But I think we need to have better translation of the really important key constitutive normative issues into the pandemic response. And as I mention the topic as such, people will talk about equity, but then there's a kind of interesting amphiboly where people will talk about equity as kind of an epidemiological measurement of difference, but not actually drill down to the normative reasons why you ought to be concerned with certain disparities in health. I think we need to, like medical research did in the era of evidence-based medicine, learn how we can use tools of knowledge translation and implementation science to better engage end users in the process of the evolution, implementation and use of ethics advice. I think

we need to improve our use of health communications and we need better preparation and training of health professionals and policymakers on how important and constitutive ethical issues are to the pandemic response. And I think I actually came in under time, which is rare for me. So, thank you for your time and attention, and I greatly appreciate this opportunity to be with you today.

Frauke Rostalski

Thank you very much. Exactly. Well within the time. So thank you very much for your talk. I think it is going to stimulate our discussion. And now I would like to give my colleagues from the German Ethics Council the chance to ask you questions directly. Please use the function to raise your hand in Zoom. Since I cannot see a first question – maybe some are a bit shy to ask the first question – so I am going to do this. I prepared a question in advance because I already saw your slides, and you said that we could have learned lessons from the past. And what I would like to know in this context is, if we compare our current handling of the pandemic with previous pandemics or pandemic-coping strategies, would you say that we show greater risk aversion in dealing with Covid-19 than before? In my opinion, I am not a real expert, but from my point of view, previous pandemics are characterised by pathogens that pose a threat to the lives of almost all members of society. And this is not the case with Covid-19. And yet we are reacting to it quite significantly by living in lockdown for months in Germany, closing down schools and shops, and so on. In your opinion, does this reflect a greater risk aversion than before?

Ross Upshur

I would say no, I don't think it is a greater risk aversion. So one thing we need to recognise, of course nobody wants to be in lockdown. And early on, as mentioned, we had no medical countermeasures. So we have to rely upon public health measures. And, so, it would be lovely if we lived in a pure world where we had high-quality scientific evidence that told us how to titrate our public health and social measures to the exact risk that the virus posed. So that would be some view of, some sort of transcendental argument for perfect proportionality of response, but we do not have that. Even now after a year, it is still unclear which of the public health or social measures has how much protection to it. So, to be fair, we need to actually distribute that burden widely across society. Now, the question becomes not, are the public health and social measures justified or not? I think, clearly, they are. There is a reason why, in almost every country, there are public health laws which give public health authorities the ability to take steps to protect the community from transmission. And so the issue here, then, becomes unclear because we are not entirely certain. We can never be entirely confident about what we know about the virus and which populations it seems to affect. So one year in the life of a virus and humans' response to the virus is a very, very, very, it's a blink of an eye in terms of evolution. So the fact that the virus started out to have differential mortality and morbidity effects predominantly on older adults does not mean that, at some future time, it can't mutate, transmute, and become more of a threat to younger populations. So our best strategy is to get this under control as quickly as possible using whatever measures we have that bring that above. Now, that evidence does show that

restricting movement, using masks, the public health and social measures are effective in bringing the virus under control. And the Independent Panel Report points out that several jurisdictions that were aggressive in the use of public health measures have been the ones that have been most successful at keeping the virus at bay. So I don't think it was in any way alarmist or overstepping authority, I think it was prudent. And this is, again, something in the Independent Panel Report, they said that we need to be more precautionary in our use of alarms. That was a conclusion that was drawn by an independent commission in Canada after SARS-1, that the precautionary principle, whatever that might mean, and there are various renditions and we could perhaps discuss that, but it is an important issue to focus on, because it has very significant normative components. But one of our reports said the precautionary principle should be introduced throughout public health legislation in Ontario, and now the Independent Panel is saying we need to be more precautionary in our response to pandemic threats. So I'm not sure if that answers your question, but hopefully it's helpful.

Frauke Rostalski

Thank you very much. The next question is from Alena Buyx.

Alena Buyx

Thank you, Ross, for that fantastic talk, for the very depressing talk, to be honest. It was really very telling that we don't learn our lessons. I have a list of questions, but I will restrict myself to the first one that I find most interesting. So one of the things that have been very difficult to achieve, and something that we alerted to very early on in our work, is how to get the balance right regarding solidarity. Because we know that

vulnerable groups – there are different vulnerabilities – are differently vulnerable. This may change the way they are affected throughout the course of the pandemic, and what we need to somehow achieve is this balance that we protect the most vulnerable fairly, and don't exhaust the solidaristic capacity, if you will, the resources of solidarity that we have in our societies. We get asked how to do this all the time, so I am going to ask you, do you have any criteria you would like to suggest, or any practical recommendations on how to do this better in the future?

Ross Upshur

Yeah. Yeah. Well, having thought about this for a long time, even if we had a good solution, I'm not sure it would be implemented and taken up quickly. So two things that come to mind immediately. One is just opening up the space to have that discussion, and to have it as a public discussion, and to have leaders who are making decisions there to listen. So, one of the interesting things and trends in research, as we are hearing, we need to have people with lived experience in my clinical research. And so, all of us now have lived experience. This is the first truly global pandemic that has affected everybody. So everybody has a stake in this. The other issue I think that's critically important is, what is the scope of reciprocity that is owed to each and every one of us? And I have a certain amount of what I call "pundit's regret" early on in the pandemic, you know you get quoted in the media saying something and you wish you could go back. I really thought this would not be as prolonged and protracted as it's been. So, for example, when you talk about the use of proportionality or the least restrictive means, and we have a truly propagated global outbreak, we've asked a lot of people, and I really did

think that it might be over-demanding for some. So, the reciprocity issues, you know, what is it that we are going to do collectively as a society to ensure that people who are doing things, discharging duties and obligations in order to bring the pandemic under control, what can we do? If we leave it all on individuals, it might be, then, too over-demanding, and solidarity will break. People will start to look after their own interests rather than seeing them as having a collective stake in a truly community outbreak. So that requires a certain imagination and a certain marshalling of resources. And I think globally it's, again, something in the Independent Panel Report, but they do not actually identify this as per. How does reciprocity play out here? So I would ... again, you can only know what reciprocity demands by asking people how they have been differentially affected. Some of them will be demands that you'll just have to say, I am sorry that you have had to forego this, but there's not much that we can do about that. And so, there's a literature around moral injury and moral repair, which talks about just the simple acknowledgement that we know that you have suffered and you have forgone. And then you can maybe use symbolic measures to deal with things where you can't meet the demands of reciprocity with resources. But I think if we bring people together to see that there is a co-created solution, and that the values are important; this is the other thing that I think has been sanitised from the response, because we say things, we're going to be evidence-based and science-led, which is all very nice when you have evidence and science, but when those are emergent, nebulous and contested, we need to be not shy about talking about what are the goals we are trying to achieve, and what are the normative values that underlie those goals, and therefore bring together what I would say

epistemology and ethics to solve this in the frame that everything is imperfectly understood, and our knowledge is fallible and diffusible. Not sure that helps.

Frauke Rostalski

Thank you very much. Time is very short unfortunately, so I would like to ask my colleagues to formulate their questions briefly. The next one comes from Professor Demuth.

Hans-Ulrich Demuth

I basically have two questions. What is your opinion on potential new pandemics? There is some discussion in the German literature concerning dengue fever, and the other one is bird flu. One is waiting concerning bird flu, concerning spreading from bird to man. And these could be the next pandemics, where we should be prepared to respond to the consequences and conclusions you have drawn.

Ross Upshur

So, to that point, yes, we should be prepared. If you look at that chart I showed, we've had six Public Health Emergencies of International Concern since 2005. I started to get involved in this work in the early nineties, when I entered public health residency to become a public health physician, and took an interest in infectious disease, epidemiology and actually started my career as an influenza modeller. I spent a lot of time studying influenza. Around that time, the Institute of Medicine released a report called *Emerging and Re-emerging Infectious Diseases*. And so, since the early nineties, people in public health, infectious diseases and zoonotic illnesses have been concerned about pandemics. Yes, we will have another one. Actually, there is a bit of a debate whether we got lucky with SARS-CoV-2, because much higher lethality pandemics and

organisms have been postulated. So this is part of what I find completely unfathomable. Credible leaders in important disciplines in public health infectious disease, medicine and ethics have been warning people for 30 years and even before, if you look at the historical record. But that first quotation from Camus, it's like, "Ah, where did this come from? We didn't expect this to happen in our lifetime. What are we going to do?" And, as I say, the literature is there, there is guidance and direction. So, if the Independent Panel is true, if this time we're truly awake, even though that alarm's been ringing since 2014, and we are truly going to learn lessons, then we will take pandemic preparedness for a variety of pathogens seriously. And, of course, it's not just infectious diseases that we need to worry about in terms of broad threats to human populations, there are many others that are lurking out there. You know, my whole purpose in life was to prevent the general public from having to experience thinking about the things that keep me awake at night, and I've been thinking about for 30 years. But now, unfortunately, everybody's had that experience. And it was, as the Independent Panel said, preventable. There was no reason it needed to be this bad.

Hans-Ulrich Demuth

Thank you very much.

Frauke Rostalski

Thank you very much. The last two questions come from Stephan Kruip and Susanne Schreiber. I would like to collect the questions so that you can answer Professor Upshur collectively. Thank you. Stephan Kruip and then Susanne Schreiber.

Stephan Kruip

Thank you again for your very interesting talk in pandemics. Always a small part of the population denies the danger and hence refuses the measures taken. You mentioned the importance of using health communication better. Do you see possibilities to reach those people using health communication means, and what are your recommendations with regard to this problem?

Ross Upshur

That's an excellent question. And the one really interesting, distinguishing and defining feature of the SARS-CoV-2 pandemic has been the infodemic. The pervasive influence of social media, of Twitter. Misinformation spreads faster than the variants. So the WHO has convened a group to look at infodemics about looking, so I guess, you know, to use a metaphor, how do you create antidotes to misinformation? The other side, and I didn't want to go too dark with this group, is that many people profit from a pandemic. If you ever remember *The Third Man*, the great Graham Greene book, and Harry Lime, who was the black marketeer selling contaminated penicillin. So there are always Harry Limes in the background of every pandemic looking for ways to exploit situations to profit. And I think we're often naive to their presence, and communications is one of the ways in which they benefit and prosper. So then we need to look at the determinants of the information world and who controls those platforms, and allows access to them. I think a certain amount of minority view can never particularly ever be extinguished. It's part of the human imagination and part of the human species to differentiate into a wide variety of views. And anybody familiar with the history of ideas would know that. But when it has such

lethal consequences, I think that leaders need to really start to take concerted action and particularly put pressure on those vehicles that are disseminating misinformation.

Frauke Rostalski

Thank you. I had to close the list of speakers, so the last question comes from Susanne Schreiber, maybe a very short question and short answer if it's possible. Susanne.

Susanne Schreiber

Thank you very much for this really interesting and gloomy talk. My internet connection was down in the middle, so I hope the question hasn't been asked before; if so, I apologise. Do you have any specific advice on how to prevent the forgetting? I mean communication is one thing, but I think we need to take human nature and psychology into account. Yeah, it is quite frustrating to see how often history has repeated itself, and isn't it time that we find some measures to give more glory to prevention here? So, any ideas you have on that? Thank you very much.

Ross Upshur

If I knew the answer to that ... actually, in a class I'm teaching this term in Global Health Ethics, I posited a pool. So, what year in the next decade will we start to forget what we've learned in 2021? And the over/under is at 2028. I think we need to have a vigilant leadership, because the other thing that happens is that – and it's a tale told around the world in health systems – is when things are going well, they start to cut the surveillance, they start to cut the public health, and then you've kind of taken away your eyes and ears. We did that in Canada, it's been done elsewhere. So the way not to forget is to have a kind of perennial vigilance. And I'm not sure how we're going to achieve that. Maybe you

guys can come up with a good technique for us. But I think that's a really big challenge. Instead of grand challenges in developing new vaccines, how about a grand challenge in not forgetting?

Frauke Rostalski

Okay. Thank you very much again for participating in our expert hearing, Professor Upshur. Now I would like to pass on to my colleague Andreas Kruse.

Andreas Kruse

Thank you so much, Frauke. Ladies and gentlemen, let me also thank the speakers for their willingness to engage with the numerous questions that have reached them from among the members of the German Ethics Council. You have greatly enriched our work with your presentation. I would like now to welcome Professor Montgomery and give you a few details from his impressive curriculum vitae. He's Professor of Healthcare Law at University College London. He is also Chair of Oxford University Hospitals NHS Foundation Trust, and Co-Chair of the Moral and Ethical Advisory Group within the Department of Health and Social Care for England. In 2020, he chaired the Ethics Advisory Board on the UK's proposed contact tracing app. He has previously chaired a number of national bioethics bodies, including the Nuffield Council on Bioethics, the Health Research Authority and the Human Genetics Commission. His research focuses on healthcare law and the governance of bioethical issues. Professor Montgomery, you have the floor.

(Slide: Ethical Governance during Covid-19: The United Kingdom experience)

Ethical Governance during Covid-19: The United Kingdom Experience

Jonathan Montgomery · University College London, Faculty of Laws

Thank you very much. And thank you for the opportunity to speak with you today, and to share reflections on ethical governance during the Covid pandemic from the UK perspective. I'm very pleased to be joining a meeting of the Ethikrat once again, although it's disappointing that it is virtual rather than in Berlin, for obvious reasons.

(Slide: Good Decision Making)

So if we go back to 2019, the United Kingdom was regarded by the international community as one of the places that was well prepared to respond to a pandemic. Indeed, on some assessments, second only to the United States of America. And the basis for this in relation to ethical preparedness was founded on two factors. The first of those was that there was an agreed ethical framework already in place that was based around the fundamental principle that everyone matters, and that everyone matters equally. And this was then worked through into commitments to respect people, informing them, involving them in planning, getting as much personal choice as possible. Commitment to minimise harm, and it was recognised that this could be physical, psychological, social and also economic harm. Commitment to fairness, to working collaboratively together, so taking responsibility for each of us not exposing others to risk. Sharing information about our health status to enable an appropriate community response. A principle we described as reciprocity, which we elaborated as a principle based on mutuality of exchange. And as an

example, we recognise we sometimes ask people to take on greater burdens than others, and if we did that, we should minimise the burdens that we placed on them through risk mitigation, and the like. So in Covid, perhaps, personal protective equipment. We recognised there needed to be flexibility, and all of this working through principles was undermined by a commitment to good decision-making, which we discussed in terms of openness and transparency, inclusiveness, accountability and reasonableness, that's to say, the ability to give reasons, including showing the evidence based on which things are done. You'll recognise many of those principles from the slide that Ross showed you in relation to the Canadian example. So that was the first foundation for believing we were well prepared. The second was the experience of working with that ethical framework during the pandemic of 2009. And as we did that, and I was involved in the committee that produced this guidance, and sat through the pandemic, we received policies on issues such as surge guidance, which means making extra hospital beds available when we need it, or vaccination prioritisation. So the draft policies came to us and we assessed them for compliance with the ethical framework. What we didn't do was get involved in clinical advice, for example on admission to critical care. And some clinicians in the UK felt our framework wasn't directive enough. The response from the group was that we were aiming to prompt ethical responsibility, not rule-following, and therefore it was inappropriate to take away the responsibility from frontline clinicians. And also, during the 2009 pandemic, we made ourselves available to key decision-makers who wanted ad-hoc advice on compliance with the principles during the pandemic. Now, Covid has been a bit different.

(Slide: Nuffield Council on Bioethics)

We've seen ethical governance in the United Kingdom fragmented, and this has given rise to a number of challenges. It is important to recognise it is not just because of Covid, and in part this reflects the way the United Kingdom has always approached ethical guidance. I'm very grateful to Ross mentioning the Nuffield Council on Bioethics, which is probably the United Kingdom's nearest equivalent to the Deutscher Ethikrat, and that, as well as publishing a very timely report on research during global health emergencies, has provided ethical analysis in the public domain during the Covid pandemic. But it sits outside of government, it's not strictly part of the formal governance in the UK. And that gives it the freedom to draw attention to issues, but it also makes it harder to influence decisions. And this has been apparent during Covid, where the Council has issued statements, set out blogs, it's lobbied behind the scenes, but it can't clearly point to specific impacts. And I just want to draw attention to three of the publications which I think are particularly interesting and important. One is, early on in March 2020, a briefing note drawing attention to key ethical considerations in relation to the use of public health measures, pulling the learning we had from the past into the public domain. Secondly, a statement on the basics of democratic government, issued in April 2020. And this challenged the UK government to show us what they were doing, set out their ethical approach, explain how their decisions had been reached, invite a broad range of voices to contribute, and to think ahead. And the perception was that we'd lost sight of those basic democratic governance principles during the mad rush to respond to the pandemic. And then, earlier in 2021, they brought together arguments for why we might need national resource

allocation, saying that it was very important for us to have authoritative, clear, definite, robust, transparent, fair, credible and consistent guidance on the allocation of resources. And that final suggestion draws attention to some of the challenges that we've seen in the United Kingdom doing public ethics during the early stages of the pandemic.

(Slide: Assessing whether Covid-19 patients will benefit from critical care: an objective approach to capacity challenges)

So we had done work early on, on decisions about admission into intensive care, but that work had been paused when it became apparent that the United Kingdom expected to have sufficient beds, sufficient capacity, and wasn't going to plan to ration access to intensive care units. And the reasons for that pause are complex, and I would be happy to talk about them later. But I want to pull out three elements which I think are significant in our ability to respond. The first is the challenge in relation to the politics. Had the government sponsored guidance about critical care prioritisation, it would have implied lack of confidence in the message they were giving about the availability of intensive care beds, and it would have undermined the communication with the public. Private citizens could make those points, but it was more difficult in the pandemic for government to do so. Secondly, we exposed some deep-set ethical disagreements. So when we attempted to secure agreements, what we found was that there were disparate views on whether capacity to benefit, like a relatively low-level version, or maybe futility, a more extreme one, should be the appropriate guiding principle for access to resources. Or whether, perhaps, we should give priority to older people, on the basis that at least that gave them some chance facing major vulnerabilities. Or maybe to the young, on

the basis of having more life ahead of them. And these are perfectly valid ethical issues, but we had to try and take a decision within a matter of weeks, and we found amongst the group discussing it that there was no realistic possibility that we could get an agreement in that time scale. And then the third factor, and this is different from, I think, the 2009 experience, was the worry about legal risks. So it was unclear whether issuing guidance would withstand legal challenges, particularly bearing in mind that in the early stages of the pandemic, the best evidence we had was that age was the main predictor of capacity to benefit, obviously raising potential discrimination effects. But also that all the evidence we had was weak, and perhaps not robust enough to be used in a court of law to justify life and death decisions. And indeed, we've had judicial review of the government's failure to issue guidance, which has been dismissed by the court. But we've also had a threat of legal action on the basis of the content of draft guidance, which was thought to be discriminatory. Now, this guidance that I've just discussed was eventually issued by a professional body, the Intensive Care Society, and you can see the picture there. It took into account a discussion we had at an early stage at the Moral and Ethical Advisory Group, but the guidance that was issued lacked any particular public authority or legitimacy. And that issue of legitimacy has proved especially problematic during Covid, particularly because we are dealing with it at a time when trust in governments, and also probably in experts, is rather low.

(Slide: Moral and Ethical Advisory Group)

So let me talk a little bit about the Moral and Ethical Advisory Group (MEAG), which was established to provide support for thinking about

ethical concerns within government, mainly for officials rather than directly to politicians, and pick out a few characteristics. First of all, it has a mixed membership of bioethicists, of regulators, so professional regulators for the medical, nursing, midwifery community, and people taken from leadership bodies in community groups, faith communities, humanists, as well as others. That group adopted the agreed ethical framework that I showed you earlier on. But, as a whole, it hasn't been reissued for the UK, although both Scotland and Wales, two of the countries, have used it to develop a version which is Covid-specific. MEAG was unable to reach a consensus on what that would look like in the early stages of the pandemic, and chose to move on. So MEAG has not ended up making public-facing statements on ethics, and indeed its existence wasn't made public for some months after it began working on Covid in March 2020. What it has done is review a number of policies, as it did in the previous pandemic, including an ethical framework for social care. But mainly what it's done is provide confidential advice to civil servants and health service bodies. So we've had a number of discussions on Covid status certification, on the stratification of risk, and the creation on the back of that risk of requests for shielding people who are extremely clinically vulnerable to isolate themselves rather than risk becoming infected. We've looked at issues around attendance at funerals and other ritual aspects of death and dying, and we've discussed issues around vaccine hesitancy. But those have been primarily private and for officials, and the public couldn't see the content of our advice, although they could see that we have discussed it.

(Slide: Moral and Ethical Advisory Group: benefits)

So, some reflections on the benefits of those approaches; I'm sure some of the weaknesses are easily apparent. First of all, we've been able to discuss things at a very early stage, enabling people to take the risk of exploring things where permission from the politicians for public discussion would probably not have been granted. Secondly, we've proved quite good at explaining how complicated things are, identifying the range of issues, largely because of our diverse membership. But we found it much less easy to pin down recommendations, so we've attempted to play to our strengths and not to our weaknesses. Thirdly, we have been a resource that a number of bodies can bring issues to in order to supplement their own governance processes without needing to set up expert bodies of their own. So, for example, our National Screening Committee has used MEAG to advise on issues about screening of adults as we recover from Covid. And finally, because we have not issued lots of public statements, we haven't absolved decision-makers of their own moral and ethical responsibility, and they can't say they are just following the ethics, as they've tended to say about following the science.

(Slide: Distributed Governance)

So picking up one of the challenges about the UK's approach, which you might describe as distributed governance, if we're being kind, ad hoc, perhaps accidental, if we're less kind, the Moral Ethical Advisory Group has discussed the prioritisation of vaccines. But the main exploration of those issues was undertaken by an expert scientific committee, the Joint Committee on Vaccination and Immunisation, a body that was already in place prior to Covid, and always looks at mass vaccination policies across the United Kingdom, including childhood

immunisation and influenza programmes annually. That raises questions about how we can balance the extra expertise that comes from specialising in vaccination, but the undermining of consistency that would come if we took it through an ethical body. So we've operated in a conversation between the two bodies, but we haven't had a common view expressed. That's not particularly new for the UK, and issues around research ethics have been picked up by the research regulator, the Health Research Authority (HRA). So during Covid, it's the HRA's ethics committees that have considered issues such as human challenge trials in which volunteers are infected so that treatments can be assessed. Something that we avoided early on until we had the possibility of mitigating the impact of Covid. And, of course, those possibilities emerged largely as the result of large-scale trials, including the RECOVERY Trial in Oxford. And the UK had a number of protocols in place ready to go before things kicked off in terms of Covid. But we've also seen some task and finish approach to ethical advice. And the example of that is the Ethics Advisory Board on contact tracing apps, which initially was expected to meet a few times and report within a couple of weeks.

(Slide: Features of the Ethics Advisory Board on contact tracing app)

We issued advice to the Secretary of State on the 24th of April on key ethical issues about digital contact tracing, well before any app was ready to be deployed. And, for the purposes of this presentation, I just want to pull out a few things I regard as interesting about the experience. First of all, what was the team we recruited? We brought together not just bioethicists, but also data ethicists. And that raises questions about the relevant expertise. Secondly, because we were on a very tight time frame, we needed to accept

that the enterprise we were engaged in was legitimate, and focus not on whether electronic contact tracing was fundamentally unethical, but on how to do it as ethically as possible, which is not to say we didn't recognise the wider debate, but we felt that our task was quite focused and that wider debate belonged elsewhere. Thirdly, because we had to act at speed, we offered conditional advice. The uncertainty was sufficiently great that we didn't really know what was actually achievable. What we could do was to reflect on aspirations, and therefore we gave our advice based on what we understood to be the aspirations, and what would make it acceptable to aspire to them. And finally, we had to think about giving advice in different ways. It had to be timely. So, for example, on a debate about whether the United Kingdom should move from a centralised, so-called, to a decentralised Apple/Google approach, we set out the arguments to be considered for and against, and, in particular, we felt it was very important to be able to understand the impact of the app in the real world, something very difficult under a decentralised app such as the ones now used in the UK, and also used in Germany. But that advice came in the form of an email, not a formal opinion. It's in the public domain in our report on the operation of the Ethics Advisory Board, but we concluded on a Thursday that the decision probably had to be taken that weekend, and so we sent an email to a key decision-maker on the Friday. Now, that adds up to an awful lot of effort put into addressing ethical issues, but with limited coordination. The roles of ethical advice, scientific assessments and political considerations in government decisions are really hard to distinguish in this pattern. It's hard to identify where decisions with ethical significance are taken, by whom and on what basis. And that sits uncomfortably with the

criteria set out by the Nuffield Council for demographic governance, and indeed with the good decision-making principles in the 2007 framework. It leads to risks of inconsistency and it may contribute to lack of trust.

(Slide: Reflections on the UK experience)

So let me conclude with five thoughts that we might reflect upon from this experience. First of all, the move from ethical frameworks to pragmatic decisions. I went into the pandemic expecting the frameworks to be applied as we've done previously, but we found that this was more complex than we expected. And we moved away from the approach of designing the framework first and then applying it, to move towards pragmatic solutions in a rapidly changing context. Secondly, it has exposed the extent to which good governance in bioethics is a matter of clear and predictable rules, or about ensuring that decision-makers can take moral responsibility for the choices that they made. So we lived with uncertain influence in order to support specific decision-making. Thirdly, how useful is real-time accountability? We expected, when we looked at it in 2007, to encourage good record-keeping for consideration after the pandemic. But what we had in Covid is contemporary legal challenge and medical scrutiny. Does that promote better ethics or does it push us into defensive practices? Defences about those with the loudest voices. We never managed to create a decent public debate on whether age was relevant to critical care decisions, because it felt too risky to do that in the public sphere. Fourthly, how do we balance the desire to work hard to get our principles robust with the need to take decisions quickly? We did that through conditional advice and reflections on complexity, but we can't then tell what impact we had. And finally, why should

politicians and the public put their trust in expertise in moral and ethical issues? What is it that we need to show to justify our roles as ethical advisors? Going into Covid, now I thought that was going to be about public pronouncements of ethical frameworks, but in practice it is been much more behind the scenes. Now, I think it's too early to judge the success of that, but I am very grateful to have been able to share some of my reflections and to you for listening. Thank you.

Andreas Kruse

Thank you so much Professor Montgomery for this important and significant lecture. We need to directly and indirectly point out how important it is for ethical bodies to communicate with each other and make their voices heard in good time in order to be able to influence political decision-making processes. But I think parliamentarians and government representatives, and you emphasised this aspect, must also be prepared to engage deeply with the constructively critical issues addressed by the ethical bodies. Thank you for the stimulating, motivating and impressive lecture. I would like to open the question and answer session. We have another 16 minutes. And my question is, who wants to start? Steffen Augsberg.

Steffen Augsberg

Yes. Thank you, Jonathan, for your inspiring talk and it's good to see you again, albeit from afar. My question is about a specific contrast that I think I've noticed between Ross's observations and yours. I think yours are closer to the situation in Germany. I think we have not seen a lack of ethical reflection and debate, but quite the contrary, there has been a mushrooming of ethical advisory boards. And ethical advice has been sought by politicians in an unprecedented

way, I would say. So, my question would be, whether you regard that as a problem with regard to the concept of democratic legitimacy. So, is the ethicisation that we are witnessing at the moment, at least in Germany and I think in the UK as well, does that mean that, as you put it, the public debate couldn't come up with a broader comprehensive public debate on certain issues? Does that not also pose a problem that we are relying too much on ethical advice or on ethical experts, as it were? And maybe I am still under the influence of seeing Dominic Cummings squirm yesterday so much that I think that would be interesting to contrast the two realms of political, as well as the ethical. Thank you.

Jonathan Montgomery

Thank you very much Steffen. Good to see you again as well. So, there's so much that could be said on that, so I'll try to be brief. I think one of the challenges is identifying what is specifically bioethical about the choices we've had to have made, and what is, more broadly, political. So if you look at questions like timing of lockdown, the balancing of economic and medical challenges, I think it's hard for us to say in the bioethical community that we have a particularly privileged position around those things. So, certainly there's been discussion in the UK about which decisions are properly scientific, properly ethical, which are fundamentally political and therefore should be taken by elected politicians who can be called to account. And if, perhaps give an illustration, if we think about vaccine prioritisation, I think there's a very strong case for the decision to prioritise older people first, because of their greater vulnerability and that certainly we would think drove decisions, say, to the vaccination of over 50s before other things. But once you get below that, the differences of

risks are not so apparent and it might become, it's much more plausible to push for different prioritisations, lower than that. What we found in the UK was a lot of that was extremely pragmatic. We stuck with age going down primarily because we couldn't easily identify people from occupational groups or ethnic groups that were more vulnerable. But it would have been a very reasonable thing to leave to our politicians, I think. Similarly, I think there are questions about how you balance equity between age groups – the young, rights to work, the elderly, to be protected. And if we had good democratic accountability, it might be that's better than dealing with ethicists. So that's the first dimension. The second dimension is about professional bioethics public opinion. Had we not been in a pandemic, it wouldn't have occurred to us to consider issuing guidance on critical care prioritisation without a public consultation and debate. Now, we now have some quite good evidence that the public concerns are broadly similar to the ones that the ethicists have had, but we didn't have that at the time, and the constraints of the expected need to issue guidance very early meant that we pulled it back into the expert domain. But I don't think we are secure in that these days without testing out those issues. So I think it seems to me that we've seen some competing ethical domains. So do we think about a clinical-to-ethics-type approach, which is what critical care prioritisation feels like? Do we think about public health interventions? – and Ross's perspective on that note gave us a window into choices about particular interventions –, or are we talking about the sort of utopian ethics, the type of society we want to live in and trying to articulate that, and then work what would lead us there? These are really quite fundamental clashes, and we are the experts in one of those

segments, but it's not obvious that we have a stronger claim to expertise than others. So the more I've reflected on this, the more difficult I think it is to justify a group like ourselves as being the only voice. It becomes more acceptable to see it as a political problem. If we had a healthy political democratic state of affairs, I would be very comfortable with that, but, you know, Covid has also exposed the difficulties of our politics, and so it does not make it a comfortable conclusion. Thanks.

Andreas Kruse

Yes. In order to continue with Alena Buyx.

Alena Buyx

Thanks Jonathan. That was terrific. And I do want to push you a little more on those issues that you have just raised in response to Steffen's question, which I think is absolutely vital. So, setting aside this issue of in which domain should we operate, under which political conditions, and how to separate our ethics and politics, and so on, could you say a little bit about when to be confidential and when not? Because that's something that you had on your slide, and I thought that was a very astute observation. And it does go back to what Steffen has mentioned, we have seen a lot of ethical debate, not all of it, we would probably not always call it a proper ethical debate. Some of it has been a lot of moralising, and all kinds of dysfunctionality in that debate, in addition to some excellent discussion. And sometimes I've had this thought that, had some things been discussed confidentially first, that could have made things easier. But then again, Ross just emphasised that transparency is very important, then, it's really important to hear the voices of people with lived experiences. So, how do you

square that? Do you have any fast rules when to be confidential and when not?

Jonathan Montgomery

So first, I mean, if only that was an easy question. But the first thing I think is we should recognise how opportunistic a lot of it is, everything worked at a great pace. Now, my view was, never turn down an opportunity to try and be influential. And if the basis on which you had that opportunity was that you were being asked something in confidence, it was better to be inside the ring and have the ability to contribute than not. I tried very hard to preserve for people in the bodies I've been involved with the ability to engage in public discourse. So we created with the Ethics Advisory Board on the contact tracing app a sort of code of conduct preserving the ability to talk generally, but not talking about who said what in the discussions or any of the confidential documents. So broadly, this is what in the UK we call the Chatham House Rule, that you are entitled to say that things are being talked about, but you are not entitled to attribute to it anybody in particular. That is quite a tightrope, and I think that we did talk about issues around the contact tracing app in the public domain, and I did some media interviews, and I think the consequence of that was that some doors were closed to us for a while and we had to rebuild confidence. On the other hand, in relation to issues around Covid certification, we have a Cabinet Office-led review and people who spoke to it were specifically told that, while the meetings were confidential, they were not stopping people engaging in the public debate, because I think they recognised a public debate was going to happen... So I think the first answer is, you have to take the opportunities when they arrive, even if that's confidential, but you have to preserve

your right to speak in the public domain. With the critical care prioritisation, my plan with it had been that we would agree a sort of structure for debate. And that structure for debate was that we should have some principles to guide us, and we should be able to debate those. Secondly, we should have a mechanism for controlling resource decisions that made sure that we had mutual support across our system, so no one hospital should on its own decide whether it had to ration. And then, finally, we should try and produce some form of decision tool that gave quick access to the best available evidence on prognosis, so that if an intensive care physician at three o'clock in the morning had to take a decision, it would be as consistent as it could be. Now that all fell apart because, when we did a mock-up of what that final thing would look like, it had an age-based scoring system in it, and then it became impossible for us to discuss it. So in my mind I had a process which would get to a decent public debate and it fell apart, and we had to move it out of the public ethics sphere. And it got us on the front page of the Sunday Times with a big spread about how the UK had deliberately abandoned older people, and that was all trying to set up a public debate. We didn't even have the debate about that. So, I do think this has been tricky, but those are the sorts of strategies that I've personally used to try and negotiate it. And I've also felt, if those of us who might get those opportunities keep in touch with each other and share views, then if you are in a confidential discussion, you're not saying this is what I think, you are saying this is what I think the community of people who worry about this would have to say about it. So you're just trying to get every chance you can to draw attention to the range of issues. Thanks.

Andreas Kruse

Next is Susanne Schreiber.

Susanne Schreiber

Thank you very much for the opportunity to ask a question here, and to be able to listen to your talk. So we are also talking about differences between countries, and I am interested in one of the most drastic measures that we had to take during this pandemic, and that is a lockdown, even including curfew. There were fundamental differences between Germany and Britain. So I think Britain started later, on the other hand you also had a more strict lockdown. So how do you perceive the ethical legitimacy for these measures? How was that perceived in Britain, and also how was that seen from the British perspective in comparison to what Germany did? That would be very interesting. Thank you.

Jonathan Montgomery

So, what a big question. So, first of all, I do think it's very hard to compare lockdown strategies. So I'm not sure I would necessarily see the differences in terms of severity in the same way that you would. We had a very significant number of people who continued to go to work. Because while we were all asked to work at home if we could, the number of professions that continued going to work was actually quite high. So, for example, we closed the schools, except we didn't close them for critical workers, so actually, many teachers were both home-schooling, supporting home-schooling, and also schooling people. So it's quite hard to know what the actual comparisons are. We didn't use a curfew system, but we did ask people to stay at home. So, I think that's quite tricky. I think in terms of the UK response, the general view is that people were surprisingly compliant with the request to stay at home, isolate. And I'm not

privity to any particular discussions of this, so I am just relaying this sort of general impression that we were led to believe the government thought that there would be lower compliance than there actually was. And it turned out that if the messages were really clear, in the first lockdown, there was a very high level of compliance. I think what we saw after that was the fragmentation of trust in government. When the numbers of deaths increased, when it was clear that a number of senior people, including Dominic Cummings, who has been mentioned already, were not playing by the rules that they were asking everybody else to play with, then it fragmented this sense of solidarity and trust. And we explored regional differences for lockdowns, and that didn't get the same amount of buy-in as the sort of fairly dramatic ones were. We then had a problem with changing minds. So we were told there was going to be a Christmas break from lockdown, and then actually it was very clear that that was going to be a bad idea, but it was quite difficult to move back from that once it had been promised, and hence a lot of reluctance. So I think early on, there was a lot of recognition this was a necessary thing to do, it's now much more complex. And we didn't early on see the same public demonstrations against lockdown or against the vaccinations, or against the whole idea that Covid existed, that we saw later on. That last bit I'd say is, there's some stuff which is very local and then there is some stuff which is quite global. So we have significant issues around vaccine hesitancy amongst some of our ethnic minority communities, and they mostly appealed to research abuses from the USA rather than specifically UK experiences. Obviously, that's on the back of Black Lives Matter and the globalisation movement. We've seen it's possible to move that by tailored communication

and working with the communities, and particularly getting community leaders to talk about the acceptability of vaccines. So outside of London, we don't have a big vaccine hesitancy problem that is distributed in terms of ethnicity; it's still a bit of an issue in London. So I think it's quite a complex picture, but those are the main reflections, Susanne.

Andreas Kruse

May I ask you a more psychologically driven question against the background of your rich experience and your knowledge system? We assume that governments will really learn from the pandemic, or must we assume that the repression of dangers will continue to hinder governments in acting responsibly from the moment of the first signs of danger? What do you think about that?

Jonathan Montgomery

So my main thought on this, and I, if you don't mind, reserve the right to reflect on it and maybe say something different in a year's time. I think we've designed a bioethics process, so the one I described on the first slide, on the assumption that governments would act calmly and rationally. And then we found ourselves trying to operate it in a period where there was a high degree of panic, and I am not accusing any individuals of that, but we were slow for government to appreciate quite how big this was going to be. And the experts were picking that up quite early, but the government wasn't responding. So that was slow. We now seem to be reverting to a calmer, more normal process of government. So we are now doing things like checking whether our terms of reference [...] advisor group, are appropriate, drawing up a proper code of practice on speaking in public and what's confidential. All stuff which sort of

disappeared because it got overtaken by events. So my fear is that, actually what we learn from that, is that you can plan very carefully, but at the point when you really need it, it's very difficult to make government work in the way that we are planning for. I haven't quite worked out what the consequence of that is, but if you talk to emergency planners, when I talk to emergency planners, one of the things they say is it's quite important not to plan too specifically. So one of our problems is we thought we had a good plan and it was driven around the pandemic influenza, and then we weren't able to translate that to a different type of viral challenge. So the type of preparation we need maybe needs to be a bit less rigid and a bit less specific than we thought it did. So those are my current reflections, but, as I say, it's very early days to reflect on that.

Andreas Kruse

Thank you so much. Thank you so much for your presentation and the very good comments. And ladies and gentlemen, may I now hand over to my esteemed colleague Frauke Rostalski, who will introduce Felix Stein. Frauke, you have the floor.

Frauke Rostalski · German Ethics Council

Thank you very much. Our third expert today is Felix Stein from the Centre for Development and the Environment at the University of Oslo, Norway. Felix Stein is an economic anthropologist with a background in development. His research is concerned with the intersection of economics and global health. One of his research interests is in public private partnerships, and vaccine financing in the Covid-19 pandemic. For example, he spent three years on the fight against cholera in Haiti and the role of the World Bank within that. Previous research

stations include, in particular, the universities of Oxford, Cambridge and Edinburgh. Last year he spent six months on how SARS-CoV-2 affects sub-Saharan Africa, and what international aid agencies do to control the pandemic. Mr. Stein we are very pleased that you have agreed to participate in our public hearing, the floor is yours.

International Cooperation to Increase Access to Covid-19 Vaccines

Felix Stein · University of Oslo, Centre for Development and the Environment

Yes. Thank you very much. I am going to share my screen and show some slides. Here we are.

(Slide: International cooperation to increase access to COVID-19 vaccines)

So thank you very much for the great privilege to speak to you today. I'm going to present you with a very brief overview of international attempts at enabling global access to Covid-19 vaccines, and I'll primarily focus on the political and the economic aspects of an entity called COVAX. And at the end of the presentation, I'll draw out some of the potential ethical implications of the story that I am going to present. And this presentation is based on the analysis of grey literature, scholarly literature, participation in COVAX virtual events, as well as some interviews with people involved in COVAX's creation.

(Slide: Vaccine cooperation has focused on Act-A and COVAX)

Now, during the first four months of the Covid-19 pandemic, the multilateral vaccine effort to fight Covid-19 was principally led by the World Health Organization. And the WHO had warned the world about this outbreak very early on. It

had declared a Public Health Emergency of International Concern in late January of 2020. And in early February it activated its so-called R&D Blueprint, which means that it invited scientists from around the world to gather in Geneva so as to accelerate research, including research into a vaccine against this emerging virus. The WHO also issued a series of guidelines arguing, for example, that Covid-19 vaccine research should be prioritised around the world. Now, during that time a series of university and corporate researchers were already working on creating a potential vaccine, and this was only possible because a team of researchers working under Professor Yongzhen Zhang from Fudan University in Shanghai had publicly shared the Covid-19 genome on several open access websites. By late April of 2020, then, the catastrophic scope of the pandemic had become clear to most governments around the globe. And so they internationally coordinated a response, which was to significantly scale up the scope of the fight against the pandemic, and to spread it across a series of institutions. And this was done by creating a new institutional alliance, which is called the Access to Covid-19 Tools Accelerator, or in short, ACT-A. Now, ACT-A was jointly launched by the WHO, the European Union, the French government, as well as various global health organisations. And, broadly speaking, over the past 13 months, ACT-A has been the world's principal multilateral effort to fight this pandemic. Now essentially, ACT-A is structured around three sets of technologies, and you can see these here.

(Slide: To fight COVID-19, Act-A focuses on three sets of technologies)

These technologies are Covid-19 diagnostics, therapeutics and vaccines. There is also some work being done within ACT-A on global health systems. However, this health system support

principally serves to enable the development and distribution of the three technologies that ACT-A is focusing on, and that's why the health systems work is depicted in dotted lines here.

(Slide: COVAX is Act-A's vaccine pillar)

Now, the vaccines work within ACT-A, its vaccines pillar, if you like, is called COVAX, and COVAX is led by three institutions. The first of these is WHO, which, in terms of funding and operational work, plays the smallest role. A second leading organisation is called Gavi, the Vaccine Alliance, which is based in Geneva, and which has been trying to make vaccines available specifically for developing countries since the year 2000. Lastly, COVAX is also led by CEPI, the Coalition for Epidemic Preparedness Innovations. And CEPI is a foundation based in Oslo which was founded in 2017, so it's fairly recent. And it works to speed up vaccine developments. Now, these three institutions have been leading COVAX, but other institutions have also been really closely involved with it, such as, for example, UNICEF and the Pan American Health Organization, which carry out a lot of COVAX's concrete vaccine procurement work, as well as the Bill & Melinda Gates Foundation, the World Bank and several management consultancies, which have all been involved in shaping its operational structure.

(Slide: COVAX's goal is twofold)

Okay. So what exactly is COVAX trying to achieve? Well, I would argue that its goal is really twofold. Firstly, it aims to accelerate the development and manufacture of Covid-19 vaccines, so it's fundamentally concerned with speed. It's trying to speed up what could otherwise be a slow process. And then, secondly, it wants to guarantee fair and equitable access to these vaccines for every country in the world. So

these are its key official values, if you like, meant to determine most of its activities. In terms of concrete outcomes, this means that COVAX aims to provide roughly 2 billion vaccine doses to the world by the end of this year.

(Slide: COVAX is by far the best-funded pillar of Act-A)

And as you can see in this next slide, COVAX's focus on vaccine speed and equity has been exceedingly popular with donors. So COVAX has so far attracted a little over 9 billion US dollars in donor contributions, and the vaccine work within ACT-A makes up around 80 per cent of all the money that's been given to ACT-A so far, and that's been allocated already. So this is to say that the vaccine work against this pandemic really outweighs the other sets of multilateral activities that we are engaged in at the moment. I think this chart also illustrates well how important COVAX has become in global health more generally, because its budget at the moment is almost twice the annual budget of the WHO, which was around 4.8 billion dollars this past year. Now, an analysis of COVAX matters all the more,

(Slide: Most COVAX donors are public institutions)

because, as you can see in this next slide, most of COVAX's donations are public in nature, so it relies to a very significant extent on taxpayer money. And, notably, Germany features quite prominently amongst its top ten donors. All of this, then, raises the question, how does COVAX actually work, and how is it trying to achieve speed and equity?

(Slide: COVAX is a buyers' and distribution club)

So COVAX essentially does two things: firstly, it's an international vaccine buyers' and

distribution club. The initial idea for COVAX, according to several interviewees of mine, was for all the world's countries to jointly buy vaccines. This was meant to bring about vaccine equity between the world's rich and poor countries, because it would avoid what had happened in previous epidemics, namely an international scramble for vaccines. So if you are thinking back to the presentation by Ross Upshur earlier on, COVAX is trying to learn from previous outbreaks. Global vaccine inequity in the past had been a major concern. For example, in 2006, with the spread of avian influenza, also known as H5N1, when Indonesia had protested, with the help of several other developing countries, against overly expensive vaccines. And, as part of this protest, Indonesia had temporarily refused to share the H5N1 virus samples with the WHO, because the Indonesian government knew that vaccines made from these samples would likely be unaffordable for it. Global vaccine inequity had, then, been a problem again during the outbreak of swine flu in 2009, when the first new round of vaccines was very quickly out of reach for most of the world's population, because high-income countries had reserved most of the global vaccine stock. The high-income countries had done this by paying pharmaceutical companies undisclosed amounts via so-called advanced purchasing agreements. So to avoid these problems of stark vaccine inequity this time round, COVAX proposed that rich and poor countries would buy vaccines together, to then distribute them across the globe, not according to national wealth, but according to health considerations. So WHO soon came up with a distribution mechanism, an ethical framework, if you like, for COVAX, which suggests distributing vaccines in a way that first covers three per cent of the populations of all member

countries, so as to protect health and social care workers. And thereafter it would cover up to 20 per cent of populations by inoculating high-risk adults. And it would only be in a final phase that doses would be allocated based on a variety of threat and vulnerability criteria. Now, this ethical framework is an imperfect system, but the basic idea that health, rather than wealth, should determine who gets vaccines remained interesting even to its critics. Jointly buying vaccines promised a second advantage, which has to do both with equity and with public procurement efficiency, namely it enables some form of price control over the global Covid-19 vaccine market. And that's because, before this pandemic broke out in 2019, only four major pharmaceutical companies accounted for 90 per cent of global vaccine revenues. So the global vaccine market is a very concentrated one in which key players wield a lot of power. In response, COVAX promised its member countries that it would pool their money and thereby negotiate vaccine contracts at prices that would be advantageous to them, and lie close to manufacturing costs. A third advantage that stems from buying and distributing vaccines together was the reduction of the spread of the disease and thereby the reduction of pandemic risk for everybody. So rather than inoculating all the people in rich countries first, COVAX aimed to inoculate those people who risked spreading the virus. This would reduce every country's risk of importing cases again, and of importing new viral variants, and it would also reduce the likelihood of dangerous viral mutations. Now, these ideas are partially summarised in the slogan that we hear very often, which is, "Nobody is safe until everybody is safe." COVAX's buyers' club would also reduce another risk, namely that of vaccine companies, with whom individual countries would strike

purchasing agreements, and the risk that these companies would then fail at developing a viable vaccine. Because, in early 2020, it was not clear at all that we would end up with this many viable vaccines, so COVAX created the world's largest portfolio that was extremely diverse in terms of the different technologies that were being used, the different geographies where the different vaccines were being produced, so as to reduce the risk of failure. Now, geographic risk minimisation didn't work very well, because, like most countries, COVAX relied to a strong extent on vaccine production coming from India, but it was trying to minimise these kinds of production risks. Now, let's go to a second major function of COVAX, which is to subsidise vaccine development and distribution.

(Slide: COVAX subsidizes vaccine development and distribution)

So COVAX provides all kinds of subsidies to the vaccine developers. Some of these subsidies are called push subsidies, and they're spent directly on research development and manufacturing. So, for example, the Gates Foundation has provided 150 million dollars to Gavi, which then passed that on to the Serum Institute of India, and to provide it with capital really early on so as to manufacture vaccines for AstraZeneca and Novavax. COVAX also provides a series of pull subsidies, mostly to pharmaceutical companies, and these are also known as advanced market commitments. And they've become very fashionable in global health financing at the moment. In fact, it was first Gavi who developed these advanced commitments and has been using them and promoting them for over ten years now. And these commitments are essentially promises to vaccine producers that COVAX will buy whatever vaccines they may develop and manufacture, as long as these vaccines adhere to certain minimal standards, of course, which are

set in advance. Now, COVAX may make such buying promises both to individual vaccine producers, but also to the vaccine market at large. Now, in both cases, these promises to buy future vaccines, they come early, they're usually made before the vaccines have been produced, and they're quite expensive because one needs to have the financing to make these promises in the first place. So early on in the pandemic, COVAX asked for 5.5 billion US dollars in volume guarantees, so in these pull subsidies. And it asked for another 9.4 billion dollars in R&D support. Now, a last set of subsidies that COVAX also provides consists of helping countries build the capacity to roll out a vaccine once they may receive one. And, from a corporate perspective, this is also worth a lot of money, because it expands potential markets for your product. Now, the justification for all of these subsidies relies in part on a need for speed, and in part on risk reduction. So the main ideas here are that if we subsidise vaccine research and manufacturing, it will happen faster and it may help generate a wider variety of vaccine technologies, and it will thereby increase the scale and scope of the available doses in the world. In this respect, COVAX is really part of a much wider trend where public money is used not just for subsidising basic research in universities and medical schools, but instead this public money is moved upstream, as it's called, which means it supports corporate research in the later stages of vaccine development, and which has a higher chance of success. And so, by working in these two main ways – through a buyers' club and through subsidies – COVAX is trying to achieve these goals of accelerating vaccine development and ensuring equitable access. Now, has it been successful? In terms of speed, the answer is honestly we don't know, because vaccines have been phenomenally

successful in terms of their efficacy and in terms of how quickly they have been developed. We've never seen any of this before, but it is not currently knowable just how much of the success is due to public subsidies. To assess this, one would have to have access to precise and systematically collected information about push and pull subsidies used by COVAX, but regrettably such data isn't currently available. Notably, the pull subsidies, so these market and volume guarantees, they're part of the purchasing agreements that COVAX is making, and these purchasing agreements are kept secret around the world. So that means that, not only do we not know whether the subsidies that COVAX provides are good value for money, we don't even know how large these subsidies actually are. And that's quite problematic, given that the public sector has been overspending during this pandemic, and given that the International Monetary Fund is warning us about potentially looming years of austerity politics. It's also problematic because pharmaceutical companies such as Pfizer and Moderna are making double-digit profit margins on Covid-19 vaccines. Pfizer alone has made around 3.5 billion US dollars just in vaccine revenues in the first quarter of 2021, and the prices that countries pay for vaccines around the globe vary by above 100 per cent, depending on where and when they're bought. This contractual secrecy is also worrying because most major vaccine producers have recently floated the idea of raising vaccine prices in the near future.

(Slide: COVAX has not ensured global vaccine equity)

Now let's get to the second goal of COVAX, which is the goal of global vaccine equity. It is clear that in that respect, COVAX has been insufficient so far. So you can see that, on this chart, but there are many charts about this topic

out there at the moment, affluent countries are racing ahead in terms of vaccinations, while low-income countries are being left behind. In fact, barely one per cent of people in low-income countries have been vaccinated so far, and somewhere between 80 and 90 per cent of all globally administered doses have gone to high-income and upper middle-income countries.

According to the Director-General of the WHO Dr. Tedros, we have therefore now entered a situation of global vaccine apartheid. Now, there are many reasons for this, but one reason that I would like to highlight here is that the world's richest countries refused to make COVAX their exclusive buyers' club. They joined COVAX, but, just as in past epidemics, they also struck bilateral deals on the side. And it looks very much like those who could pay pharmaceutical companies the most, either in price per dose or in providing other benefits, received vaccines early on. And this was one of the principal reasons why COVAX did not receive vaccines in early 2021. So, a week ago on May 20th, COVAX had delivered just over 68 million doses, which is less than four per cent of the two billion doses it hoped to deliver by the end of this year.

Learning that it's being outcompeted by the world's wealthiest countries, COVAX soon asked them to at least share their excess doses with it, because many of them had ordered several times the doses they would need to inoculate their populations. And thereby, I would argue its nature has changed from being a system of global solidarity to being an institution of global charity.

(Slide: COVAX changes from solidarity to charity)

And, as you can see in this slide, COVAX and Act-A are still falling short of funding, not only in terms of vaccine doses, but they also lack the money to do the work that they would like to do.

So maybe one last comment on this, even if COVAX was going to get all the doses that it would like to have now so as to distribute them across the world, that would be a very expensive way of inoculating the planet. Because rich countries are competing on price and then giving the excess doses to COVAX to be used elsewhere.

(Slide: Ethical questions raised)

Now, what are the ethical problems that this story raises? I believe one equity-related issue that has not been discussed very much, but that's very important for this attempt at building a global buyers' club, is whether wealthy countries can even be ethically justified to participate in it in the first place. And that is because COVAX offered wealthy countries a host of benefits, potentially even a lower loss of life within their borders, if they were to renounce from getting doses for themselves as fast as they could. And this initial proposition amounted to potentially witnessing a higher loss of life within one's borders in the short run, because one would share one's doses with the rest of the world, for the potential medium and long-term benefit of losing fewer lives within one's borders, and in the world at large. Whether this can be justified will likely be a key question for future efforts at joint vaccine procurement during an outbreak. The second equity-related issue is that of fair vaccine prices. COVAX has raised the question of how much one should pay for vaccines during a global pandemic, and what may constitute a fair price for them. It has also raised the issue of who should be allowed to have access to the information that is needed to assess this question in the first place. More concretely, should we be allowed to know, for example, vaccine manufacturing costs during a pandemic, even if corporations do not want to share this

information with us or with their competitors? A third ethical issue COVAX raises, I would argue, is to do with the idea of a social contract. So, does the social contract that is frequently invoked to describe the relationships between citizens and governments, does it also apply to the corporate entities that manufacture and develop essential vaccines during a pandemic outbreak? If it does, what may be the rights and obligations of corporate entities during and after international pandemic emergencies? And to illustrate this point, I've just included two pictures of the nine new vaccine billionaires that have been created as part of this pandemic. And lastly, I wanted to point out here that COVAX focuses on health technologies rather than building global health systems, or advocating for collective behavioural or even societal change. Now, given that pandemic outbreaks can often be traced back to our interactions with animals, a crucial blind spot in global health governance today is what our future relationship to animals, and to the environment more broadly, should look like. And there is some tentative intellectual work being done on this, but we see little in terms of implementation. And I think that's an issue that will remain relevant for the years to come. Thank you very much.

Frauke Rostalski

Thank you very much Mr. Stein for your critical talk and the global perspective that you showed us through your presentation. You have shown that there are efforts to show international solidarity and establish global justice in the distribution of vaccines. Unfortunately, not everyone is participating in the desired way. The first question from my colleague Sigrid Graumann, and maybe then later on I can ask a question, too. Sigrid.

Sigrid Graumann

Thank you very much for this very, very interesting talk and the insights into the COVAX system, which we didn't have so clearly. One very, very precise question: What do you think about patent protection and the idea of skipping it for international justice reasons?

Felix Stein

Yes. Thank you very much. The question around patents at the moment is the elephant in the room when we discuss COVAX. So the people who are in favour of getting rid of patent protection temporarily during this outbreak do so because they draw on experience with the HIV/AIDS pandemic, where that has been an interesting step. And they do so because they are based on the demands of vaccine manufacturers around the world to also do this. So, for example, there was an article in Nature yesterday from an mRNA vaccine producer in Thailand, who was making the case that that would be helpful. I don't believe, and I don't think there are a lot of people who believe, that waving patents during this pandemic is a kind of magic bullet. There are a lot of problems that lead to the current shortage of global vaccines, and most short-term problems are to do with the supply of resources and raw materials, and the unwillingness to export some of these from some countries. So there are more urgent issues. However, the key argument against waiving patents is to do with incentives. It goes: If we waive these today, vaccine companies may not be motivated in the next pandemic to engage in this race for vaccines, and have these vaccines at this extraordinary speed that we've seen today. I think there is a little bit of truth to not getting rid of all incentives for companies to engage in this race in the next pandemic. But right now, personally, I consider them over-incentivised.

Okay? So, I don't believe anybody needs a profit margin that is between 20 or maybe even 60 per cent so as to be motivated to create these technologies. There are also a lot of incentives to do this even at cost. So if you think about the fact that at least two of the main vaccines that we are using today actually come from university researchers who are not motivated by money in the first place. That's true for Moderna and for BioNTech. Secondly, if you do this research, you have spillover effects that are really important and can be really beneficial to your companies. mRNA vaccines, for example, originally come out of cancer research, and it looks likely that they're going to be useful in that research as well in the future. And then, thirdly, engaging even in the free production of vaccines for a limited amount of time has tremendous reputational benefits for a corporation. So in terms of incentives, I don't currently buy the argument, and I think, incentives aside, we have asked so much of the citizens of countries around the globe to stay at home, to not put their children into school, to change their lives completely, to stay away from their beloved when they get buried, when they pass away. And I am not sure we should not act similarly, in a war economy, or in an emergency, I think one can demand much more of corporations than is currently being done. So, as it stands, I'll be in favour of it, and I think that's the opinion of a lot of countries in the Global South, at least a hundred of them, various UN institutions and most of the global health researchers that I am aware of.

Frauke Rostalski

Thank you very much. Against the backdrop of your presentation, I am interested in the following. In Germany, we are currently talking about vaccinating children, while in other

countries of the world there are still not enough vaccines for elderly people, for example. So would you say that there is some kind of an ethical obligation to first send our vaccines abroad once all our risk groups have been vaccinated or have at least received an offer of vaccination?

Felix Stein

Well, that's really a question that I would like to ask you, because I am not an ethicist. I study political economy, and my main question is whether this should be done or not. And I am sure there are lots of ethical ins and outs of whether these kinds of vaccinations should be used on the elderly or on children or anybody else. I know one thing for sure, I don't need to be vaccinated, because I work from home, and I don't need to see anybody to go to work, and I've received a vaccine. In the Global South, less than one per cent of people have received a vaccine, that is to say, in sub-Saharan Africa, there are all these nurses and doctors who are not vaccinated, and yet I am. And so, whether and how you would like to segment the different populations that you want to vaccinate before you share doses is one question, but the question that I would love to see solved before that is, is there a greater value of life or is there a greater obligation by politicians in the Global North to look after their populations first, than there is an obligation to share doses immediately?

Frauke Rostalski

Thank you very much. So, the next question from my colleague Alena Buyx, please.

Alena Buyx

Sorry, I don't want to push you too much on this, but this is a really, really relevant issue that Frauke just asked. You already said that you don't want to answer it, but I will press you. So,

the thing here is, you've asked the question and I do want you to answer it a little bit. If you give advice to your country, politicians will quite rightly say there is actually, so, to answer your question partly, there is an obligation by governments to look after their population. There's no question about that. Some of the countries have that in their constitutions, so that is pretty clear. So how can we make sure that we respect the obligation that governments have to protect their own population on the one hand, and still make sure that the difference between protection that some countries get and, say, the Global South gets isn't this stark? So are there ways where you don't have such a stark trade-off? It's a situation of absolute scarcity. So my hunch would be, it's somewhere around the production issue again, right? It's somewhere around the sort of lifting up the overall amount that we have to distribute in the first place. But I would be thrilled to hear your views on this.

Felix Stein

Yes. So maybe two answers on this. One is to leave open room for critique. So we are already hearing a lot of voices about how one is not allowed to critique COVAX at this very difficult time, and so forth. And I think being allowed to study COVAX and study the contracts that are being used so as to buy vaccines in the first place, whether these are COVAX's contracts or the contracts of the European Union or of any other country, I think that would be absolutely fantastic. Because then we could have something close to a public discussion about whether we should be spending all that money on buying vaccines, or on nurses, or on international development aid. Currently, we can't have this discussion because we do not have the information. So, that's one. In terms of international solidarity, I think there is a strong

case, given the severity of this virus, to engage in much more international aid than we have in the past. And, in spite of all the rhetoric, and one of the reasons why COVAX is so hard to study is because there is a lot of rhetoric around it, so cutting through all of that rhetoric is a little bit difficult. But given there is this rhetoric of trying to wake up and having a wake-up call, I think there is a strong case to up international development aid, so as to try and control this pandemic not just in the Global North, but also in the Global South. What I am worrying about is that citizens of the Global North, such as citizens of Germany, they've had a wake-up call and they have been awake, they've been awake for a year-and-a-half, maybe, they haven't been able to leave the house, but they may be going back to sleep now because life starts to feel normal again for us, but it doesn't for most of the world. And so, I think taking that concern seriously is all the more relevant when it comes to infectious diseases. Because when we look at the history of infectious diseases, the whole reason why we have a kind of global governance framework in the first place is because we've been trying to fight cholera for over a hundred years. So infectious diseases should really, just like other global public goods that have been mentioned earlier on, particularly in the introduction, such as climate change, these are issues that we cannot solve by using nationalistic approaches, and that will have to force us to think on a global frame. We are currently not geared to doing that very well, but I really think that that'll need a shift in mindset in the German public and in all kinds of other publics within Europe and outside of it.

Frauke Rostalski

Thank you very much. As there are no further questions from my colleagues, I would like to

pass on again to Andreas Kruse. And would like to thank you again, Felix Stein, for your presentation and also for answering our questions. Andreas.

Questions to the experts

Andreas Kruse

Thank you so much, and speakers, colleagues from the German Ethics Council, we now have another 20 minutes to enter into a more general debate. And for this reason, I would like to ask those of you who wish to contribute to the discussion to do so now. And to our speakers, if you, for your part, would like to participate in the discussion, or to respond to a contribution to the discussion, please feel very welcome to do so. Then we will start. Is there any comment from the speakers or from the Ethics Council? Yes. Jonathan Montgomery, please.

Jonathan Montgomery

Thank you. I wonder if I might pick up that last discussion about the children and the relative priorities. And I think this is a very live discussion currently in the United Kingdom. So the leading investigator on the AstraZeneca vaccine has publicly said he thinks that we shouldn't vaccinate children in the United Kingdom, and we should focus the vaccination efforts on other places, because, I think, the implication is, he feels that we have done enough in relation to controlling the pandemic outbreak in the United Kingdom. I have found this extremely difficult because the UK has had a bad pandemic, and early on I would have been, I think, in favour of a wide distribution of vaccines, but it has hit the UK particularly badly, and that does make some sense of prioritising the control there. I think one of the interesting questions is whether the issues are primarily

about incentivisation of vaccine production, about distribution, or just about capacity. So, as I understand it, our weakest position globally at the moment is that we don't have enough. It's very hard to get a clear picture on the data I have on how much, and Felix may have more of that, but we hear a lot about the number of doses that countries have bought, but of course that's not the same as the doses they actually have available. So I know in the United Kingdom that, although we have a very successful vaccine rollout, it is constrained by supply. So we are cancelling vaccination clinics because we don't have sufficient supply to see them through. So there's a sort of abstract debate about the right thing to do. And then there's a set of very concrete questions about supply. So I think one of the questions is, not so much the intellectual property issues, but just the logistics of vaccine manufacturing. So it may not be the IP issues that are at stake, as about the technical support for building vaccine plants. We'll all be aware that there's been a particular set of challenges around India, and the rich North has relied on a lot of vaccine production in India, and India needs that for its own resources. So I'm not sure this is quite as simple as a Global South, rich North. It's quite complex, and I find it quite difficult to disentangle the strands. The UK's ethical planning framework makes it very clear that it's part of an appropriate response to think about the global impact and the transmission, and to support that response. But our domestic politics move in the opposite direction. Our current government regards its stakeholders as supporting it in disinvesting from development, and so this is very challenging domestically, but an extremely live debate. Thank you.

Andreas Kruse

Felix Stein, do you want to answer it? And then Ross Upshur.

Felix Stein

Yes, very briefly. Yeah. To me, the question is really one of cooperation, there is non-cooperation, of nationalism versus non-nationalism. Because the principal region in the world that is suffering from the export stops of India right now is sub-Saharan Africa, right? So there is not a lot of South-South cooperation happening there, precisely for the reasons that you point out. And I agree that logistical issues are incredibly important, particularly in the short term. Also a regionalisation of production in the medium and long term are incredibly relevant to reduce pandemic risk for everybody in the world. However, I don't think that these debates stand in contradiction to debates on intellectual property or debates on buyers' clubs, or debates on vaccine prices. Right now, we hear a lot of people saying, "Oh, please don't talk about this issue or that issue." I think we should talk about all of these issues and use all the paths that we have to end this pandemic as fast as possible. So that would be my response. Thank you.

Andreas Kruse

Ross Upshur.

Ross Upshur

Thank you. So Felix, I appreciated your very astute analysis of COVAX. I also sit on WHO, ACT-A, Ethics and Governance Committee, so we've struggled with a lot of these issues. So, the WHO's position with respect to vaccinating children, Director-General Tedros was clear and unequivocal that we ought not to be immunising younger people when there's still a large pool of vulnerable adults globally. And this raises a

bigger issue that we've touched on in various strands in this discussion, about goals and goalposts. So, what are the clearly articulated goals of the pandemic response, and are we actually disciplined enough to achieve them, or do we keep moving and shuffling our goals at various times? So, with colleagues from the WHO Ethics Working Group, when we can't get something through the WHO publishing process, we go to the peer-reviewed literature. And we recently published a paper on what we thought were five of the key normative issues going forward. One of them is about clarity of goals. If the goal of pandemic response is to reduce mortality, then maybe we might want to say when we've got mortality down past a certain threshold, we've achieved a certain goal, then there's an openness and we'll achieve that through vaccination largely, particularly with vaccination of the oldest and most likely to die from acquiring Covid-19. Now, it's not going to be completely airtight and perfect, there's going to be a little bit of still residual mortality in younger age groups, but a good consequentialist could probably find us a threshold past which we could agree that we have reasonable achievement of one goal, which would then provide a justification for sharing. But then that brings us up against the other goal in pandemic response that clouds in often, which is restoration or addressing social and economic disruption. And then the question of morbidity. So, these three goals have been articulated, but they've never been strategically, I would say, planned out with milestones and thresholds for when they've been achieved, so that we can have a meaningful and rational discussion about how to work on the next one. So, as I think both Jonathan and Felix have said nicely in the questions they've answered, there's a lot of politics in response to political necessity and

political pressures. And so sometimes those will actually push away from having clarity on whether we are actually achieving the goals. And then my other point just to make is that we do need to recognise deep moral disagreement, which is pervasive at many of these tables in terms of actually articulating the goals and articulating the principles. So Jonathan's experience, for example, with the triage and allocation principles, resonated deeply with me. I am under too many non-disclosure agreements to talk about that, because it is not just the World Health Organization, but the provincial government, but there's been some very interesting and deeply held disagreements amongst even the bioethics community. So, thanks.

Andreas Kruse

Alena Buyx.

Alena Buyx

Yes. I do want to say first that I've been asking a lot of questions, so if my colleagues want to go first, I am going to stand back. I do have a lot of questions. I will push ahead then, if that's okay. Stop me if you must. I have a question first for Jonathan and Ross. Both of you. And I think it can be answered quickly, but I really do need to hear it. We have sent you this list of questions, we knew it was a lot, many of them centred around what criteria should be applied. My question is, do you think, despite the fact that Ross, you've just underlined that we have to accept moral disagreement and we will certainly have disagreement about certain criteria, but do you think that, broadly speaking, we have the criteria already, or do we need some new ones? First question. And the second one to all three of you, the one top thing that needs to be done differently, what is it, if pressed? Thank you.

Ross Upshur

I'll let Jonathan go first.

Jonathan Montgomery

Thanks Ross. So my sense, Alena, is that the pandemic planning principles that I outlined within my presentation have actually held up pretty well. And I use them personally as a guide. Now, I would do that because I was privy to them being drafted, so I sort of understand how it is supposed to be used. So I don't believe we need a different set of principles, but I do think we need to acknowledge the legitimacy of the deep disagreements that Ross just referred to. So I attempted early on to draft ethical frameworks for Covid and I took from the 2007 principles, I looked at all the stuff that was coming around in the UK from professional bodies, and I tried to integrate it, and I thought I had got a synthesis. But as soon as we started discovering it, there was actually a lot of groundwork, and, on reflection, I realised that it took us 18 months in the committee on the ethical aspects of pandemic flu to socialise the issues and work them through till we could trust each other. And we could not do that in 18 days, which was probably what we needed to do. So I do think that this is something that, we don't have to go back to the drawing board, but we do have to ask ourselves, what does it take to operationalise these principles? And that turns out, in my mind, not to be about definition and articulation and processes, it's about trust. So if we trusted each other, we could work from these principles. They're sufficiently imprecise for us to be able to work on them and reach a consensus on what to do, but they're not sufficiently precise for us to agree to sign up to them. So as long as you make it about, are they perfect, it's very, very difficult. So, I would not abandon where we are. I think we have to

recognise how difficult it is to actually work on it in the middle of the pandemic, but I do think we should go back and keep plugging away at that. But I have to say I thought it was going to be a lot easier than it has been.

Ross Upshur

So I would concur. I think the principles are correct. I also want to endorse a comment that Jonathan made about flexible general frameworks. So after Ebola, we had the SARS framework and H1N1, H1N1 is actually fairly broad, and then there was going to be an Ebola-specific guidance document, and I remember giving a talk to a WHO meeting saying it's nice to meet with everybody, I really like everybody, but we've got to stop meeting like this, we don't need an Ebola-specific guidance document. What we need, and that is why I came up with this notion of the playbook – these structural recurrent issues – is we need to address them. We ought not to be in a position where weighty decisions are being made in 18 days, when we knew perfectly well that we were going to have to face them sometime in the future. That, to me, is the number one thing to correct. We know these issues are coming. They've been coming – go back and read Thucydides's account of the plague of Athens. Take seriously what 2,000 years of experience with pathogens has taught us, about these structural recurrent ethical issues. You cannot solve triage behind closed doors in 18 days without any engagement with the communities that are going to be affected by those decisions. And what we learned after SARS-1 was that important, so we had a series of research projects. So that framework that I showed you was developed by bioethics and clinicians, but we went on the road with it. We did town hall meetings, we did national surveys, we had expert panels, we had affected groups

that we actually brought together. Interesting thing, this question of vulnerability. So we had a project where we brought policymakers, policy enablers and populations affected by policies together to co-create a research agenda on ethics. And we made the mistake, because the funder said you need to address vulnerable populations, so we put all the “vulnerable populations” in a room, and then they came out and told us, don't call us vulnerable, your policies make us vulnerable. And so, only when you have that kind of a process whereby you are engaging everyone, and that you can actually hash out principles, so we actually found that the ethical principles and the procedural values that we thought worked for the Canadian population, everybody bought into it, but then, of course, it just vanished when people stopped thinking about these things. So we need to have ongoing ... this is why a commission such as yourself, which has influence, can actually put these processes in place, so that we don't lose sleep or we don't fall asleep again. Thank you.

Andreas Kruse

Thank you. We have now four further contributions from Sigrid Graumann, from Frauke Rostalski and then Susanne Schreiber, and then myself.

Sigrid Graumann

Thank you, Andreas. I have another very general question. We've seen in Germany that our healthcare system was not very well prepared to control the disease. We didn't face triage situations on a larger scale. However, we've seen that the main failure was that our healthcare system was not able to control or avoid the outbreaks. What do you think? If I see it correctly, that was a general problem, at least in most European countries, some of the Asian

countries were much better prepared to control the outbreaks. What do you think, how should the healthcare systems in the world develop in the future? What are the main characteristics we have to focus on in the future?

Andreas Kruse

Who wants to respond?

Ross Upshur

I do not mind taking a first shot. So the extraordinary thing about the SARS-CoV-2 outbreak is that protecting the healthcare system has been articulated as a goal of pandemic response. That was never ever, ever considered. So you are supposed to actually have a healthcare system to help people who become ill, rather than a healthcare system that you are making all sorts of curve-flattening gestures in order to protect it. So the big question for me, and this is an important one in the Canadian context, because curve flattening and flattening the curve, is mean science. So you had all of these things on Twitter about here's the curve and here's the health system capacity, and we need to flatten the curve to preserve the health system capacity. So I ask myself, who's in that line? Is it simply the intensive care unit? Is it simply acute care? Because I am a public health and primary care physician, and when you look at these curve-flattening exercises, the area under the curve remains the same, that is that, even though you flatten the curve under this threshold, you still have the same burden of illness. Where's that going? That is going into the general population and into the community. And in Canada, we had the tragedy of long-term care. So a large proportion of our deaths in Canada occurred in long-term care facilities amongst the most at-risk, least protected, elderly people. I was part of this process, because I worked in a

hospital, I worked in geriatric palliative care, we emptied the hospitals to put people in long-term care, so we could care for all the people with Covid and keep the intensive care open. And what did we do? It was like leading lambs to the slaughter. Because we put them in, where do they go? To the long-term care facilities, no personal protective equipment, very poor infection protection and control measures, people crowded in rooms, and it was a perfect substrate for the spread and impact of the virus. So what do health systems need to do? We need to have health systems – in Canada, people talk about the healthcare system, but it's actually a series of insured services. And insured services does not a system make. In other words, you need to think about who are the people that are being served, where they are, how they're provisioned. And if we are going to have a response, if you're saving one end, if your goal is to keep the intensive care, because we don't want the intensivists and the people to face moral distress there and make these tragic triage decisions, while we're pushing it somewhere, where is that? So for every action there is an equal and opposite reaction, particularly in pandemics. So what we've done is we've closed down service delivery, made people averse to seeking care in a system that's actually designed to help them. And so we need to manage that situation. The second thing is, we need to radically, radically reshape our training of healthcare professionals. And this goes back to the work I did in the [...] as the co-ordinator of the health workers' obligations to care. So, when I hear people saying I didn't sign up for this, like I never thought that I could become ill to discharge my duties as a clinician, I think, what planet are we living on, given that I've shown just the Public Health Emergencies of International Concern, not bread and butter

seasonal influenza, tuberculosis, hepatitis, and all the other pathogens that make people sick and have them come to seek care with healthcare providers? And somehow we recruit, train people on the view that they're never going to become ill or face this risk. So we need to put mainstream pandemic preparedness, ethical obligations into the healthcare training right across the board.

Andreas Kruse

Professor Montgomery. If I interpret your behaviour correctly, you would like also to give an answer. Yes.

Jonathan Montgomery

Yes. So I mean, our picture is quite similar to the one Ross has described in terms of where a lot of our deaths happened. So I do not want to repeat things there. I'll just make three quick observations. One is that I think we overestimated the infection control in our social care system. So we do have a well-coordinated healthcare system. It isn't as well funded or coordinated in social care, and that's much more fragmented. But I remember discussions in the hospital about what infection control was appropriate, and whether or not that would be that much more difficult in the social care setting. And we tried to build capacity in social care for Covid-safe places, but it was woefully insufficient to deal with the challenges. Second thing is, I think there is a massive set of questions about data and who knew what, when. So you in Germany had a lot of data on the spread of the disease in relatively healthy younger people, because you were doing lots of testing. We had very poor data on what was going on in the community, and there were lots of reasons for those things. They're partly a question of where the technology is developed

and the capacity that's there. So we had a very uneven data set to interpret what was going on, and we were pretty blind as to what was happening in the community. We were pretty well-sighted on what was going on in the hospitals, and that probably led to the underestimation of the impact of discharging from hospital that we saw, and that Ross has touched on. The third thing I think we shouldn't forget is the changing understanding around the Personal Protective Equipment that was required, and the way in which that is not just a scientific issue, it's also an issue about staff confidence, about media perception. So we were very heavily influenced in the UK by the pictures coming out of northern Italy, and that exacerbated the focus on intensive care capacity. Because everyone was aware from their friends and colleagues in Italy how that had manifested itself, and I think that distorted our ability to get a balanced view of the impact of the disease. So those are additional reflections to Ross's. Thank you.

Andreas Kruse

Thank you. We have two comments, may I collect them? Frauke Rostalski and Susanne Schreiber.

Frauke Rostalski

Thank you very much. I would like to return to some coping strategies regarding the pandemic. As we have already heard, Covid-19 is a great danger to certain groups in society, especially older people, but not to a large part, younger people, people without underlying health conditions. Against this backdrop, should our measures concentrate more on restricting the freedom of those who are endangered the most? What we do is to considerably restrict everyone's freedom by, for example, closing

schools, closing universities, living in lockdown for many months. And now that there are vaccination offers for all the risk groups in Germany, do you believe it is still justified to go on with these general measures of prevention, even if there is no risk of the health system collapsing? Thank you.

Andreas Kruse

Susanne Schreiber.

Susanne Schreiber

Okay then, although I think it would be nice to get an answer to this one first, but I'll try to squeeze my two questions in there too. So first of all, the comment, it was nice to hear that the very good testing strategy in Germany, the initial one that we had, is appreciated. I think Germans are not aware of this or don't appreciate what we have, so I want to stress this point, that from the international perspective we are perceived as having done very well there. But the two questions I have. So, one is very simple: Is there anything that's different compared to previous pandemics? So are there any new insights, not just the ones that we have forgotten and are now getting out of the archives again, but something that's very specific about this one and influential, is it the same as always, so to speak? And the other one is a bit naïve, but I'm going to ask it anyway. It's about the origin. So, we don't know what the origin of the virus is, right? On the other hand, as we're taking this international perspective, do you see any chance that, in the future, we cannot only learn how to better deal with pandemics, but also how to better prevent them from occurring? So is there any way at the international level that one can restrict food markets, or do you think that it's not possible because it is too challenging on this international

level and we do not know enough about it?

Thank you very much.

Andreas Kruse

We have only two further minutes. Is it possible to give a very short answer to very complex questions?

Jonathan Montgomery

Can I have a quick go first? I don't think this pandemic is over by any means, and I don't think we should think about it being restricted to older groups. We know lots about impacts on younger people, so I think if we were to just think that it's only about older people, we would live to regret that. In terms of the differences, I do think it is the politics that are problematic, and we had a sense of how the politics would work, which has been frustrated and it didn't help the US election cycle that was in the middle of it. And it didn't help our own domestic things. So I think those will be present, I'm afraid, in every pandemic, and rather than planning for it being for a particular political wing, we need to think about resilience and robustness of our processes. So that's the nearest I can get. I have no answer to the origins question I am afraid, other than that it gets sucked into the politics.

Andreas Kruse

Felix Stein.

Felix Stein

Yes. Very briefly, I think on the international level, one really interesting aspect that's different in this pandemic than in previous ones is that there is a movement away from the dominance of western countries, towards the expertise of Asian countries, and towards the expertise of local and regional health organisations like the African CDC. And I think this is an opportunity for us to catch up with

their expertise and to learn from them as much as we also have a lot of opportunities of teaching them, I'm sure.

Andreas Kruse

Ross Upshur.

Ross Upshur

Yeah. So, two quick questions. Regardless of the origin or source, we have problems. So, if it's from zoonotic sources and incursion into animal habitats, that was identified in the Institute of Medicine emerging diseases framework, we've got issues with how we, as a species, interact with the rest of our planet. If it is, and I noted in the New York Times a really interesting article on the lab leak, which is back up. Then we have serious questions about gain of function research, viral research, and the obligations of scientists and what sort of ethical obligations they have. With respect, I think we need to think about intergenerational justice, which is sort of entailed in the question that you raise. But if you look at the ethics of infectious disease, there's lovely discussions about how we are victims and vectors. And I'm sure younger people would love to have their liberties and be back at school, but they wouldn't want to be on the proximate chain of the death of an older person. Even vaccines do not confer 100 per cent protection to older adults. We still see people die who have been vaccinated. And I agree with Jonathan, we're a long way from under this. In fact, Jeremy Farrar, the CEO of the Wellcome Trust, and a very, very experienced infectious disease researcher, said at the R&D Blueprint meeting two weeks ago that we're in many ways just at the beginning of this pandemic. So I think we need to be prepared for concerted vigilant action as we go forward, and I look forward to the work that you do to help us get there. Thank you.

Andreas Kruse

Thank you. Ladies and gentlemen. Please allow me to make some concluding remarks. First of all, I would like to thank the speakers for the food for thought and answers that we have enjoyed in the past two-and-a-half hours. We have learned a lot from your expertise and gained much for our future. Now, please allow me to highlight five topics that were discussed here today. First, the strict differentiation between empirical, ethical and political issues is indispensable in all public discussions, and in all public communication. It must be made clear to the public to which of the three areas statements are to be assigned, and who assumes responsibility for what. Transparency must be created and maintained, and this also includes admitting that we do not always know everything, that we cannot foresee everything, and that some measures are only provisional in nature. Politicians, in particular, must take responsibility and not hide behind so-called experts. Second, we have numerous ethical and political commissions that include people with a high level of expertise, which should actually be used intensively by political decision-makers. In many respects, their bodies, these bodies are not sufficiently networked with each other, but they should be. Networking also means, in my understanding, taking note of each other. There should be no fragmentary debates, for example, where one body discusses medical consequences and another discusses social implications, and in the end the issues are merely juxtaposed. Third, the ethical as well as the empirical questions and findings must be taken much more consistently and profoundly into political decision-making processes. This also means that decisions must not be made and implemented single-handedly. If only in the interest of acceptance, as many

people as possible must be involved. Here, the implementation and transfer sciences provide very good methodological inventories. Fourth, justice discourses within our country as well as between states and continents must be conducted much more intensively and in a far more solution-oriented manner. This also applies to prevention, and this applies to establishing a resilient and adaptive and robust infrastructure. The pandemic teaches us that in the final analysis, we should form a world community for moral normative as well as political reasons. Such discourses of justice must also focus on social inequalities that existed before the pandemic and that may be exacerbated by it. Compensation must also be distributed fairly. Pandemics not only bring people together, but also promote egoism, lack of fairness, lack of balance. Fifth, finally, we should keep an eye out for opportunities to shape the future. And these should be implemented with a view to issues in which new threats are emerging. The threat of climate catastrophe, if not already a reality, should be mentioned here. Climate-friendly housing, transport and economic design have actually been an absolute requirement for years, if not decades. This will continue to gain in relevance, and here we can and must learn from the current pandemic. And let me conclude. The pandemic shows us all too clearly how vulnerable we are. Recognising and acknowledging vulnerability as part of the *conditio humana*, as has been implicitly and explicitly formulated today, appears to be a significant social and cultural task. At the same time, we must not overlook the human capability to cope effectively with vulnerability. In order for this coping potential to be realised, it is necessary that we alleviate the consequences of social inequality. Moreover, we need adaptive and robust institutions. Finally, a far-sighted

policy is needed that is guided by a high degree of reflection and responsibility. Also, on behalf of Frauke Rostalski, thank you so much for the wonderful presentations, and a very inspiring discussion. I would now like to hand over to the Chair of the German Ethics Council, Alena Buyx.

Closing words

Alena Buyx · Chair of the German Ethics Council

Thank you so much, Andreas Kruse. I will only keep you for a final minute. I want to add my thanks, and I speak for all my colleagues from the German Ethics Council, when I say how terrific this was. With apologies to Felix, I need to cite two very snappy one-liners in a meeting not short on punchy messages, and that is Ross said, the lesson learned is that we do not like to learn lessons, and Jonathan said, never pass up an opportunity to be influential. So, I take this as both a warning and a call to action. We will certainly follow up on this. We have learned so much from you and we will continue learning from it. And Andreas Kruse has so ably demonstrated that we will synthesise this and pull it into our own work and, of course, keep in touch and collaborate with you. I want to thank all three speakers for your wonderful insights today, for taking the time. I want to thank the chairs, Frauke Rostalski and Andreas Kruse, for guiding us so ably through the discussion. I want to thank all members of the Council for their questions, and I want to thank you, the viewers, for sticking with us. We've had several thousand people in the stream, so this has been a meeting with some significant reach, and that is very close to our heart. I do want to thank the people in the room who've done a fantastic job in terms

of technical support. That was wonderful. I do want to thank our translators. Thank you so much. And before I close, I just want to point out that our next public meeting is on the 23rd of June, titled “To Your Health! Dimensions of Nutritional Responsibility”. And I am sure we will find a way to fold the pandemic into that. Thank you so much. You have a lovely day, wherever you are, and we will see you again soon. Take care.