



HOUSE OF COMMONS

Science and Technology Committee

Oral evidence: UK Science, Research and
Technology Capability and Influence in Global
Disease Outbreaks, HC 93

Wednesday 30 March 2022

Ordered by the House of Commons to be published on 30 March 2022.

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Members present: Greg Clark (Chair); Aaron Bell; Chris Clarkson; Rebecca Long
Bailey; Graham Stringer; Zarah Sultana.

Questions 2911 to 2933

Witness

I: Professor Ann John, Co-Chair, Scientific Pandemic Insights Group on
Behaviours (SPI-B).



Examination of witness

Witness: Professor Ann John.

Q2911 **Chair:** This morning we continue our inquiry into the response to the covid pandemic. After this session, we will also ask some questions of Sir Patrick Vallance on covid and on his other responsibilities as the Government's chief scientific adviser.

Before we start, I want to send the Committee's best wishes to our colleague Dawn Butler, who is recovering from cancer. She is making a good recovery, and we look forward very much to having her back with us asking questions of witnesses. All the best to Dawn.

I would like to start by welcoming our first witness, Professor Ann John. Professor John is professor of public health and psychiatry at Swansea University, but she is with us today specifically in her capacity as co-chair of SPI-B—the Scientific Pandemic Insights Group on Behaviours—which feeds into SAGE, some of whose meetings Professor John also attends.

The Committee has been very interested in modelling throughout the pandemic. We had a session a few weeks ago looking at modelling around omicron in particular, so perhaps we can start with that, Professor. In advance of the omicron wave in December, when omicron presented itself, what considerations regarding the behaviour of members of the public informed the modelling, as channelled through SPI-B?

Professor John: It is important to highlight that there were close working relationships between SPI-B and SPI-M: members attended each other's meetings, there were very specific commissions that we worked on together and, in fact, members have published in academic journals together during the pandemic.

However, over the last two years, as was raised in the previous session, we did not include behavioural considerations in our models here, although Warwick did in some. Part of that is because it is really difficult to predict people's behaviours and responses. So you discussed a lot about the uncertainty around modelling, and that would have been another very uncertain parameter.

I think Dr Camilla Holten Møller from Denmark gave evidence. In my day job, we travel to Denmark to use their data—it's the envy of the world in many ways. They have certain parameters, like household data, that make it really good quality, whereas here there is a much larger population, much more heterogeneity. Although they did include a behavioural measure, it was quite crude; it was about thinking about the rising infections and how behaviour might spontaneously change.

One of the things we have seen over the last two years is that things like responses to the pandemic were very difficult to predict. So we always had those discussions, and when you read the papers submitted on the



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modelling, there was always a discussion of behaviour change and how it might impact on the findings presented to SAGE.

Q2912 Chair: So, broadly, because of the uncertainties, behavioural change was not included or not prominent in the UK model. It was in the Danish modelling, and you say that the assumptions that they made on behaviour were crude, but nevertheless those made the models more accurate—they were actually a pretty good predictor of what happened, which had important consequences for public policy.

In effect, public policy here was made on the basis of modelling that was completely awry with what happened in practice—all of the best and worst-case scenarios were departed from in practice. Modelling is about simplification. Do you as co-chair SPI-B, reflecting on what happened during that particular phase of the pandemic, think that we should introduce more dynamic behavioural change into models?

Professor John: When you look at the modelling for omicron between Denmark and here, there was not that much difference. There were differences in some of the parameters but as the modelling continued it was very similar. I think it is very difficult to look into future behaviours. Sometimes when we model we are looking at the past, and I think we can do that, but I think that adds more uncertainty. I have no doubt, however, that we will all be looking to see what are the lessons to be learned.

Q2913 Chair: In terms of the forecasts that were made by SAGE, the deaths were predicted in a range from best case to worst case as peaking at 600 to 6,000 deaths per day. Actually, the peak was 285. There was a huge difference. In the case of the Danish modelling, predictions and the results in practice were within the range, which is surely the purpose of the modelling. Is there no learning to be made from that? One cannot get everything right, but at least one can learn from things that we got wrong.

Professor John: My understanding is that the uncertainty around the models was recognised by the Government in Denmark as well, so mitigations were put in place in response to the modelling. That came across very strongly in the last session. The modelling is not equivalent to predictions; it is done to feed into SAGE to inform policy-making.

Chair: Let me go to my colleagues, starting with Graham Stringer and then Aaron Bell.

Q2914 Graham Stringer: Welcome to the Committee, Professor John. You were not just looking at behaviour, but trying to affect behaviour as well from SPI-B, weren't you?

Professor John: We were looking at the evidence base to inform public health decisions about reducing infection and ensuring that disproportionate and unintended impacts were not felt by different sectors of society.

Q2915 Graham Stringer: I think you were trying to do more than that, weren't you, you were trying to actually change behaviour? If I may read you a



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quote from your own minutes of 22 March 2020, you were recommending “the inflation of fear for all of the British people, irrespective of their individual risk levels of serious harm from the virus”.¹ Another minute reads “The perceived level of personal threat needs to be increased among those who are complacent, using hard-hitting emotional messaging.” That is trying to change behaviour, isn’t it?

Professor John: I was not actually sitting on SPI-B then, so I went back and looked at those papers. Prior to lockdown, SPI-B was asked to present the evidence that currently existed about behaviour change during a pandemic, and they presented 11 options, one of which is the one to which you are referring. That is evidence-based.

In every paper since then where that sort of fear messaging is discussed, SPI-B advises against it, because it does not work. So it is much more about promoting positive messages about, “We’re all in it together,” and about what we call enabling behaviours. If you are in precarious employment and there is no financial support to self-isolate, it is very difficult to self-isolate, so the advice was much more about thinking about those sorts of issues.

I led on a paper about vaccination uptake in those with severe mental illness. We know that there are real barriers to uptake of healthcare in that group. So we looked at the evidence from around the world as to how we could improve uptake.

Q2916 **Graham Stringer:** There seems to me to be a connection between those minutes and some of the posters, which many people would have found frightening. Some of them were described as looking like demonic possession, with things coming out of people’s mouths. There was all sorts of messaging about different areas of responsibility.

It seems to me that you were carrying out a psychological experiment on the entire British population. If you were doing a small psychological experiment in a university, you would have to go to the ethics committee; you would have to get consent for the people who were doing it. What sort of ethical framework was SPI-B operating with it?

Professor John: You are completely right. When we do research to generate new knowledge, we always have to get ethical approval. Now, in any work we do there are ethical implications; so, although I think many people think that the constituency of SPI-B is solely psychologists, actually there were also anthropologists, sociologists and ethicists on SPI-B.

However, although we present the advice, where policy decisions are made the Government have an advisory group on ethics. We would normally not, when we are pulling evidence together, apply for ethical approval. I think that having that consensus around the table, having ethicists there, meant that those implications were discussed, but it wouldn’t be a situation where you would apply for ethical approval.

¹ This quote is not directly from SAGE or SPI-B minutes or papers but is a third party’s assessment of a [SPI-B paper](#) from 22 March 2020.



Q2917 Graham Stringer: Since the messaging was put out, some of which was quite frightening, and certainly some people found it quite frightening, the evidence base is that the level of anxiety amongst the population in general has gone up between two and three times. I am not saying that is all down to the messaging, but were those considerations taken into account when you were advising on upping the levels of fear?

Professor John: We never advised on upping the level of fear. I think it was presented as part of the evidence base in terms of the pandemic. Then after that, if you look at all our papers, we absolutely advised that fear does not work.

In terms of communication, we did provide underlying principles—that messages should be simple, that rationales should be explained, that consistency was important, highlighting the uncertainty. There were core principles. Fear was not one of them. We had no direct input into poster design. There is a YouGov poll—

Q2918 Graham Stringer: I am sorry; I don't like interrupting witnesses, but are you saying that there was no cause and effect between those minutes and the information, the propaganda, that was put out in this area—that there is no relationship between those two things at all?

Professor John: Those minutes were written prior to lockdown, in the context of presenting all the existing evidence. And I think we put out a paper on 3 April, where we categorically said that using fear-based messaging was not helpful. I think there are another nine papers at least where that is very clearly stated.

We have all lived through a pandemic. One of the difficulties is that there are lots of people who have experienced fear as they have not experienced it before in their lives. That is actually an appropriate response.

You talked about the increase in common mental disorders, and that is a consistent finding across the world—forgive me; this is very much my area. There was a very sharp decrease in mental health—I use that term, but I mean common mental health problems—following the first lockdown. The vast majority of the population did recover, but there were two groups: one whose mental health has stayed consistently poor and another for whom it has deteriorated. Within those groups are the people disproportionately affected by the pandemic. Those are people with pre-existing mental and physical health problems, ethnic minorities and people from deprived communities.

One of the things that SPI-B has been consistently highlighting is the disproportionate impact and unintended consequences for those groups and how we can enable them to make choices.

Q2919 Graham Stringer: We are short of time; I just want to be clear on two of your answers. When asked about the ethical framework, you said that there were ethicists on SPI-B. Was that the only ethical framework? Is there anywhere I can go and read the policy or the ethical framework that you were working to, or was it just the internal discussions?



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Secondly, to repeat the last question I asked, do you believe that there was cause and effect between those early SPI-B minutes and the propaganda and information that the Government put out?

Professor John: A complaint was made quite early on to the British Psychological Society about some of the psychologists and the ethical framework, and it was very clear that it did not believe that there was any foundation to that complaint. There is a moral and ethical advisory group to the Government, whose minutes it might be useful to look at.

In terms of impact—

Q2920 **Chair:** Just on that, Professor John—again, like Graham, I don't like to interrupt. But you mentioned a group. Do you know that that group met during the pandemic? You said that the minutes might be available.

Professor John: They advise Government, so I am unaware of whether they have. I know that they are there to advise Government.

Q2921 **Chair:** Did they have any input into the SPI-B group that you co-chair?

Professor John: No; we had ethicists sitting on the group. There are ethical implications to everything and it was very important to have them on the group, but you would not expect to apply for ethical permissions in the work that we were doing. The work that we were doing was very much about gathering the evidence: both the evidence that existed prior to the pandemic—general principles from around the world—and from the data that was emerging at the time.

Chair: It was just a specific thing as to whether that group met. We will pursue that inquiry with the Government—thank you.

Q2922 **Graham Stringer:** I was asking about the cause and effect between the minutes and the information that the Government put out.

Professor John: Yes, in those minutes, and in several other minutes and papers after that, we advised against using fear. On cause and effect, you would need to ask policy makers and Government about how they responded to the advice that we were giving. But I think that we were very clear in our advice that fear-based messaging is not helpful in these situations.

Q2923 **Aaron Bell:** Going back to the links between behavioural science and modelling, you said earlier that it was difficult to make predictions about how people's behaviour will change, but we had already been through the first wave and we saw that people started to change their behaviour even before restrictions were mandated. What lessons did SPI-B take from the first wave when giving advice on how to handle omicron?

Professor John: We always looked at what behaviour changes had happened in terms of where it was mandated, where it was recommended and where it happened spontaneously, and all three of those things did happen. The behaviour change that we saw in response to the pandemic back in July was very different from the behaviour changes that we saw at the beginning of the pandemic. That is why it is so difficult to predict.



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In similar ways, the responses at the moment to what is happening are very difficult to predict in terms of what has happened before. I don't think any of us saw what was going to happen with the pingdemic. Before Christmas, there were changes before there were any changes in recommendations or restrictions. I think you can learn, but you have to keep that level of uncertainty in your mind.

Q2924 **Aaron Bell:** We all realise there is a huge amount of uncertainty, and we heard from Professor Medley when he spoke to us that the modelling community did not think it was their job to tell Government what they actually thought was going to happen, but surely that is what Government needs to know, both from your group and from the modelling group. They need to have a central expectation of what is going to happen so that they can make sensible policy, but it seems that both SPI-M and SPI-B have thrown out a few scenarios and told the Government to make the best of it. It doesn't seem as though Government is getting a clear steer as to what the central expectation is. Is that a fair criticism?

Professor John: With the modelling, I think that Professor Medley was very clear on why you didn't point to a particular one: you would almost create a bias, wouldn't you? I think that the way he presented the modelling was entirely appropriate. In SPI-B, when we were talking about things like, "If we don't provide financial support for people who are in precarious employment to self-isolate, they won't do it," we often put what we called levels of confidence—high, medium or low—around those statements, based on what the pre-existing evidence was, so there was some direction there.

Q2925 **Aaron Bell:** I'm sorry to interrupt, but we don't have much time. Surely the biggest driver of people's behaviour is what they can see in the case numbers and what they can see from their family catching covid, from other clusters and from children and teachers being off school. Isn't that the most important thing to model, rather than the potential impact of individual policy choices? The most important thing for the really big decisions about lockdown and the state of alert that you put the NHS at is, simply: how people are going to react so that we know where a peak is going to come?

It seems that, again, both SPI-B and SPI-M were not giving Government a clear steer as to how big the peak should be. It was at very wide confidence intervals and they were also simultaneously saying, "By the way, this isn't even a central scenario; it's just a scenario."

Professor John: Although it feels like common sense to think that, where you've got rising infections or where there is mandated behaviour, people's behaviour follows those things—and sometimes they did but sometimes they didn't. The pingdemic was really effective in terms of changing people's behaviours and the way they mixed.

We are seeing much less of a response at the moment to rising levels of infection and hospitalisations. We had to reflect that level of uncertainty. People's behaviours, and the things that impact them, are very complex.



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Across a heterogeneous society, you will see different impacts and responses across the board. That is why we use those measures of high, low and medium. The aspect of the modelling that was occurring meant that it was entirely appropriate to feed the different models into SAGE.

Q2926 Aaron Bell: Would it be appropriate to include anticipated behavioural change in response to the threat of any future waves or future pandemics, rather than what we have been doing so far with covid?

Professor John: I think that for the scientific community and policy makers, there will be a lot to learn from what has happened over the last two years. There is absolutely no doubt, as the great modellers in this country, including Professor Medley, go back and look at what they have done, there will be lessons to learn for the next pandemic.

It will be the same for us. In the evidence that we were looking at, there was current evidence based on surveys, but a lot of the more high-quality evidence was from much smaller events, or events that were very much in the historical past. So, I think there will be lots to learn, which we will take forward both into thinking about behaviour change, but also in the models that we produce.

Q2927 Rebecca Long Bailey: Thank you for coming today, Professor John. What lessons can be learned from the different international approaches to the incorporation of behavioural science into epidemiological modelling over the course of the pandemic?

Professor John: Throughout, in the advice that we were given, and in our discussions with people from SPI-M, we were always looking at what was going on in the rest of the world. We produced a paper about plan B in October, looking at things that were happening in over 30 countries in terms of behaviour change. Absolutely, I know that we and SPI-M colleagues were looking at other models that were being published, but in actual fact, other than small differences, many of the models were based on the same parameters.

Q2928 Rebecca Long Bailey: Are there any particular countries that fared better than others and on which we based our modelling here in the UK?

Professor John: We based our modelling—as far as I am aware, because I was not sat on SPI-M—on models that were used to model infectious diseases previously. I believe that Professor Holten Møller said that the models were very similar—the principles of the models were very similar.

Q2929 Rebecca Long Bailey: In our recent evidence session, Dr Raghiv Ali recommended that, to maintain public trust going forward, scientists be open about mistakes that they made over the course of the pandemic. Are there any elements of the advice given by SPI-B or SAGE—particularly around December time, with the Omicron variant—that you would now say are incorrect or slight off-course?

Professor John: I would absolutely agree that part of being a scientist is looking back and consistently learning. What I would say, though, is that when I look back at those papers, the level of uncertainty around them is



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actually written very clearly. I think that sometimes, the ways in which it is picked up and communicated, or the things that we pick up from what we read, are different.

I am not sure that the modellers in particular—because I think it is that range that people struggled with—could have presented anything other than what they presented, because in all the papers that I have seen, they are very clear about how behaviour change could impact what they were presenting. They are very clear that those are not predictions; it is information to feed into SAGE consensus discussions, so I think we need to go and look back, because you would not be asking these questions, but I am not sure how they could do it differently.

Q2930 Rebecca Long Bailey: Are there any lessons that have been used by SPI-B so far that can be used to strengthen behavioural advice for any variants of concern or mutations that arise in the future?

Professor John: I genuinely think that one of the biggest contributions of SPI-B was that, for those in our society who might experience things quite differently—that might be people from deprived communities, people in precarious employment, people with severe mental illness, or young people—we absolutely championed having community champions, co-designing and co-producing with different communities what the messaging should be for that community.

Those are things that we should take forward, because in terms of behaviour, it is easy to think that one plus one equals two, and it really does not. There are lots of different things about people's psychology and the environment they are in that makes choices not very clear, and we all know that—we have seen it with smoking and with obesity. It is really important to draw on all that evidence, and highlight the differences and what we can do to enable those choices.

Rebecca Long Bailey: Thank you very much.

Q2931 Chair: Thank you very much indeed, Rebecca, and thank you, Professor John, for coming. One final question from me: we have been talking about SPI-B, which is the scientific insights group on behaviour. Perhaps harking back to Graham's question, is the remit of SPI-B to advise SAGE, and thereby indirectly the Government, on how people will behave, or is it to advise on how we can make people behave in a certain way? Is that a clear part of the remit?

Professor John: A clear part of the remit is to look at previous evidence, and then we looked at existing polling data and surveys to look around the boundaries of what people's responses might be.

Q2932 Chair: What they might be—so it is trying to understand from what we know how people are likely to behave. That is the purpose.

Professor John: And thinking about, if we know the measure of social distancing or any of the protective behaviours, how we enable people to make those choices for themselves. That is SPI-B's remit.



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Q2933 **Chair:** But specifically, if we collectively want people to behave in a different way, is SPI-B partly there to advise on how people can be induced to behave in a different way?

Professor John: "Induced" is a difficult word. It is about thinking, "Okay, if we want people to self-isolate if they are positive, it is about understanding that if people are in precarious employment, they might be less likely to self-isolate if they do not get sick pay."

Thinking particularly about vaccination uptake and people with severe mental illness, we talked about things like how it can be very difficult for people to get to appointments in the morning, so you do them in the evening. It can be very difficult for people to attend appointments on their own, so you might want to make allowances for them to take carers with them. It is thinking about what barriers people face in undertaking behaviours that they want to undertake, and advising on how you address those issues.

Chair: Thank you very much indeed for your evidence today. It is very good of you to come and give us half an hour to be able to go into some of the details behind the work you have done. We are very grateful for your appearing today, and the work you have done on behalf of the country during the pandemic.