



# Biotech Daily

Wednesday September 27, 2023

*Daily news on ASX-listed biotechnology companies*

## Prof Sarah Gilbert Calls For 'Pandemic Preparedness'

[THE PETER DOHERTY INSTITUTE FOR INFECTION AND IMMUNITY](#)

**By JAMIE MILLER, DEPUTY EDITOR**

Oxford University professor of vaccinology and co-developer of the Astrazeneca Covid-19 vaccine Prof Sarah Gilbert says we need to be more prepared for a future pandemic.

At a Doherty Institute talk on vaccine production, Prof Gilbert said of the 2020 severe-acute respiratory syndrome coronavirus 2 (Sars-Cov-2) outbreak, that the “question we should be asking around the world is: ‘how do we make sure we don’t get into this situation again?’”

The discussion was led by Doherty director Prof Sharon Lewin with a panel of three researchers who had each helped develop a separate Covid-19 vaccine; Prof Gilbert, the University of Melbourne’s head of vaccine and immunization research Prof Terry Nolan and the University of Queensland professor of virology Prof Paul Young.

In her book ‘Vaxxers’ co-authored with fellow Astrazeneca vaccine researcher Dr Catherine Green, Prof Gilbert said developing the Covid-19 vaccine was additional to her work “developing vaccines against five other diseases”.

Prof Gilbert said the Astrazeneca Covid-19 vaccine came from “more than 25 years of vaccine research” including prior vaccine manufacturing and 12 clinical trials of the same type of vaccine prior to April 2020 when the Covid-19 vaccine trials began.

Prof Gilbert said even though much of the preparatory work had been done “getting funding was a huge challenge”.

Prof Gilbert said that in 2019 she had tried to start a project on accelerating developing vaccines by working “in a different way” from the academic model of studying, publishing peer-reviewed results and fund raising which was “very, very slow”.

“I wasn’t successful in getting that project funded, but at least it meant that we had done the thinking about what we would need to do to respond fast, if there was an outbreak of an unknown virus,” she said.

Prof Gilbert said the planning of how to develop a vaccine in an emergency response quickly was put into practice a year later with the outbreak of an unknown respiratory virus, eventually called Sars-Cov-2 and its disease, known as Covid-19.

“I had a little bit of research funding that I could use to just kick-start the process in the lab, but once we get to manufacturing the vaccine for clinical trials, that is an expensive process and it was a constant problem through the Spring of 2020,” Prof Gilbert said.

“We formed a partnership with Astrazeneca, something negotiated by others in the University in the early months of 2020, and Astrazeneca agreed to work with us to take on the manufacturing of the vaccine which we had started for our first clinical trial, Prof Gilbert said.

“But we were going to need a lot more of it for the full clinical development and commercial supply after that,” Prof Gilbert said.

“[Astrazeneca] didn’t fund us directly, we had funding from the UK Vaccines Task Force, but what they did was set up a fantastic manufacturing network ... [and] transferred [our vaccine] to 25 manufacturing sites worldwide ... including CSL,” Prof Gilbert said.

Prof Gilbert said that it was the outbreak of the Ebola virus in 2014, and the world’s “really quite poor response to dealing with that” that pushed thinking about outbreak pathogens that were known to have caused previous outbreaks and stimulated the puzzle of vaccine development for those pathogens before future outbreaks.

“We are nowhere close to completing that puzzle, we have hardly begun it and we really need to return to that,” Prof Gilbert said.

“But it’s not just about the vaccines, it’s about the diagnostics ... and the social science studies of how people respond to these interventions,” Prof Gilbert said.

Prof Gilbert said “unfortunately [the pandemic] ... has probably moved out of the public eye, but we need to keep it there as there is a lot more we need to do to keep countries protected in the future”.

The University of Queensland’s Prof Paul Young said that in Australia “we are getting more and broader engagement by industry in focus on potential pandemic type agents and the development of both vaccines and therapeutics to combat those, as a toolkit”.

Prof Young said a future outbreak “will happen ... we can guarantee that, exactly whether it is a pandemic on the scale that we are currently seeing or a smaller epidemic is yet to be seen”.

“What we need to be thinking about in Australia is not just developing capabilities in the manufacturing phase, but also upstream development phases,” Prof Young said.

Prof Young said the biggest hurdle for most innovation coming out of research and development in Australia was whether a developing product could be translated into “actually going to phase I clinical trials”.

“It is an extraordinarily complex process; you need a lot of expertise .... but you also need to be able to make that product in the early stages, and that’s a very expensive prospect,” Prof Young said.

In developing an alternate “molecular clamp vaccine technology” at the University of Queensland, Prof Young said eight years of prior research had gone into development before the pivotal moment of receiving \$15 million in funding, over three years.

With the funding, Prof Young said researchers “were able to reach out and support a wider team, that included people at Doherty ... and ultimately CSL, who agreed to partner with us in early 2020”.

Prof Young said “ultimately it is about scale”.

“Research and development funding is sitting at 1.65 percent of [gross domestic product], which is in the bottom third of [Organisation for Economic Co-operation and Development] countries ... we need to be shifting that up to at least three percent,” Prof Young said.