



What role should the Academy play in supporting engineers in preparing our lines of defence for the next pandemic?

The world is still reeling from COVID-19. But whilst we work to recover our systems and reflect on lessons learnt, the risk of the next pandemic is ever present.

Engineers played an essential role in pandemic response, including:

- Designing non-pharmaceutical interventions, such as ventilation and masks
- Leveraging big data for modelling, contact tracing and early warning systems
- Ramping up industrial capacity for essential production
- Enabling core systems (e.g. the grid and broadband networks) to adapt to changing demand
- Upgrading and streamlining global supply chains

However, the full potential of engineering was not realised due to a lack of effective coordination with other fields such as health, policy or civil society. And the significance of engineering contributions is still unsung, which puts us at risk of repeating the same mistakes. There is also the risk that attention will slip away from long-termism in the face of any number of other urgent and immediate issues. How can we ensure that preparedness systems are kept warm - and that engineers are at the heart of this?

Complex problems will not be solved in siloes. It is time for joined-up, big picture thinking; sharing knowledge and working together. The Academy is uniquely positioned to facilitate interdisciplinary and international collaboration.

This discussion is an opportunity to share knowledge and perspectives on what we need to be prepared for the next pandemic. Participants are encouraged to: share case studies and innovative solutions; discuss what sorts of skills and expertise needs to be mobilised to address this problem; and ideate on possible solutions.

We can consider concrete interventions, such as new technology for speeding up vaccine development or preventing transmission in public spaces, and systems-level issues, such as how to ensure that engineers work side by side with other sectors to optimise results.

The outcomes of these discussions could lead to concrete steps taken by The Academy: from informing programme activities; to funding research, education or innovation; to promoting recognition of engineering and engineers; or developing policy recommendations.