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Covid-19 has shown the world is not prepared for potential bioweapons

By Professor Nayef Al-Rodhan

Workers at a mobile Covid-detection unit in Marseille Photo: Christophe Simon / AFP / Getty Images

- We must not confuse realistic threats with Covid conspiracies
- The world was not ready for Covid - it can't afford to be unprepared for a bioweapon
- The one silver lining of Covid has been rehearsing for a potentially far worse outbreak

Despite some breathless headlines in recent months, scientists now seem to agree that Covid-19 was not cooked up in a lab. The origins of the virus remain unclear – though a recent study published in Nature, co-authored by the University of Sydney's Professor Edward Holmes, suggests a number of working theories about how exactly the virus transmitted from bats to humans.

Nonetheless, the plausibility of the laboratory theory, and the huge impact of the coronavirus itself, raise serious questions about the kind of work being done on diseases, their potential dual use as bioweapons and the ability for governments to stop them.

The key and frightening takeaway from this outbreak is that tracing the exact origins of a virus is very difficult. This bodes poorly for future outbreaks, whether accidental or deliberate.

Worse still has been the distinct lack of cooperation between states in tracking and tracing the virus, and sharing information. The fact that a pandemic is global by definition does not seem to have stopped some government insisting that information should remain national or regional at best.

The disorganisation that has characterised much of the Covid response may have only a limited impact on the management of this particular virus. However, were we in the future to face a man-made virus – likely to be much more dangerous since created with malicious intent – the issue of locating its origins and stifling its spread would not just be a public health priority, but a national and international security crisis. A sufficiently lethal virus could even pose an existential risk to our species.

Yet the experience of the novel coronavirus suggests that the international community is simply not prepared for the potential impact of accidental future pandemics, a bioweapon, or any deadly man-made disease. The only silver lining of having endured Covid-19 is that the world has had a dress rehearsal for something similar or potentially even worse.

Next time we might require far more equipment than face masks and ventilators, and much better and quicker international cooperation to procure it.

Scientists and political theorists have warned about the risks of pandemics in the past, only for their advice to go unheeded. We cannot repeat that mistake. Preparing for potential pandemics or bioweapons must now be a top global priority.

Whatever the existing security measures are for studying diseases and bioweapons, all governments need to undertake serious reviews about what is being studied and what its effects and potential risks are as soon as possible. As we've learnt, before thinking of treatments or cures, the chief areas of concern with any new virus relate to the origin, tracing, determining fatality levels and properties relating to transmissibility.

Drastically enhanced international investment in developing technologies in these spheres, and establishing international treaties and protocols relating to them is urgent.

Strict oversight mechanisms for lab work will of course be important, but most governments will have been scared off funding any unnecessary research in this sphere, having seen how difficult it is to prevent the spread of such diseases across borders.

The sobering reality is that an attempt to deploy a bioweapon, be it by a rogue state or a non-state actor, risks a civilisational catastrophe. As this year has shown only too starkly, it will be nigh on impossible to confine an outbreak to a pre-determined geography, given how connected and interdependent the world has become.

And be in no doubt that biological weapons have been and remain a very plausible threat, with numerous cases of use in history. Nor are they solely a weapon of mass destruction, capable of wreaking havoc on a grand scale – bioweapons could also be used for targeted assassination attempts. This means that everyone will be at risk, including the perpetrators themselves.

Biological weapons are different from other Weapons of Mass Destruction, and in many ways the most destructive variety of WMD. The effects of a biological attack can take several days or weeks to appear, which can inhibit a fast response.

Bioweapons can also only target living things (humans, or indeed crops and livestock) and have no impact on infrastructure or equipment. Contrary to a nuclear program, for instance, developing a biological warfare program does not necessarily require significant technical and financial investments

and capabilities. Information on the production of biological weapons is widespread on internet, and this represents a major issue when it comes to ensuring the non-proliferation of such weapons.

Biological weapons are different from biological agents, which represent one of the elements that composes a weapon. As such, not all biological agents have been, or can be, turned into a weapon. The weaponisation process of a biological agent is specific and not so common. A biological weapon has three components: a biological agent, some additives to support the stability and dissemination of the agent, and a delivery system.

Early international conventions and treaties have sought to regulate the production and use of biological weapons. The most prominent is the Biological Weapons Convention (BWC), signed in 1972. Today signed by 170 countries, the Convention bans the use of biological weapons in war and prohibits the development, production, acquisition, stockpiling, or transfer of such weapons.

However, the proliferation of biological weapons is difficult to detect and quantify. To make things more difficult, there are no verification or inspection procedures to prove the signatories are compliant to the Convention. Additionally, 16 Member States of the UN still had not signed nor ratified the treaty by 2013.

With all that in mind, it's vital that the next UN Biological Weapons Convention, set for 2021 in Geneva, addresses these missing components in our existing legislative infrastructure.

It is also important not to confuse these realistic threats with other coronavirus conspiracies. Given what we already know about biological weapons, it seems unlikely that recent viruses such as Covid-19 or Ebola could actually be weaponised. For one thing, these are not airborne viruses – meaning that to be used as a biological weapon, they would have to rely on human-to-human transmission, rather than delivery via, say, an aerosol, which is known to be the most efficient way to spread a biological agent.

Equally importantly, the likelihood that this virus was created by biologists in the BSL4 Lab in Wuhan is very low, since SARS-CoV-2 does not look like any viruses already known to the scientific community, which could have served as a base to create a new virus.

But although Covid-19 is not, as far as we know, a bioweapon concocted in a lab, the fact it could have been, and that we weren't prepared for it, suggests we haven't been taking this issue as seriously we should have been. This has been the worst pandemic in living memory, it's absolutely vital that we keep it that way.

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