



Enhancing global biosecurity: strategies for agile crisis response

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Key points

- Biosecurity encompasses a range of policy options that can sometimes contradict each other.
- International cooperation becomes challenging precisely when it is most keenly and urgently needed. Developing methods to transition from peacetime competition to contingency cooperation is critical.
- There will be no clear delineation between biosecurity and biosafety. It is vital that security policies encompass broader concerns, not solely focusing on the risk of terrorism.
- A multi-stakeholder approach is both essential and necessary.

Policy recommendations

- Promote an open innovation approach to biotechnology development. Governments should closely monitor activities by stakeholders in technology development and ensure their accountability.
- Monitoring the potential application of these technologies for military use is critical. It is necessary to share information on risk assessments related to biotechnology through an international framework.
- Establish international and regional response mechanisms for biosecurity and biosafety.

Introduction

The COVID-19 pandemic revealed that there are significant gaps in the international community's approach to the issues regarding biosecurity. The community's response framework for biosecurity is segmented by issues, with different response frameworks in place for each phase. A biosecurity crisis challenges the mode of response as the situation evolves because it evolves across issues. The Quad countries may assume special responsibility to manage a smooth transition by enhancing their own capability and updating information sharing.¹

Existing response measures and the role of the WHO

Until now, the international community has developed response measures for each area of issues regarding biosecurity. These include biosafety measures that deal with R&D, national biosafety measures when a problem involving biotechnology occurs, and international cooperation when a problem arises. However, while local responsiveness is necessary to determine the cause, the spread of an epidemic occurs before the source is clarified. So there is an urgent need to respond at the global level. The role of the WHO is essential in this context.²

Challenges in addressing biosecurity threats

In issues surrounding biosecurity, the nature of the problem differs between an act of terrorism and a pandemic. In the field of biotechnology research, new approaches are expected to emerge, such as synthetic biology, genome editing, and gene drive. Terrorists with knowledge of these technologies may emerge from domestic research institutes. If such technologies are freely available to those with malicious intent, there is a concern that existing pathogens may be created – they could be artificially synthesised or new pathogens with higher infectivity and contagiousness be created and used for bio-terrorism and other purposes. The threat of ‘in-house (or home grown)’ terrorists is prominent in Quad countries because of their technological sophistication and enhanced bio-industry.

Counterterrorism and ethics in research

For this reason, countries, especially Quad countries, will need to continuously screen domestic trends in biotechnology, along with the researchers involved. Since this information is personal, each country will need to strictly manage it. On top of this, an emphasis on a code of ethics for researchers, which would be standardised internationally, would be fundamental to counterterrorism measures.³ However, ethical principles or codes of conduct are not effective against those with malicious intent or lured by rewards to cooperate with terrorists. Therefore, it is necessary to develop response measures in the event of a problem.

Global response to pandemics and the role of the WHO

In the event of a pandemic, the foundation for a global response will be the information held by the local agencies concerned. Information accumulated by national health agencies will be provided to the WHO as needed. The WHO will use this information to implement the response at a global level. However, as demonstrated by COVID-19, the WHO lacks sufficient authority and skills to coordinate the response of each country at the global level. This includes security and public policy elements such as determining cause.

Cross-border challenges and limitations in current response strategies

This problem can be addressed on an individual basis in the case of bio-terrorism or bio-incidents. Each country’s public health authorities, police, and in some cases, their militaries, have the know-how and information necessary to respond to such incidents. However, when cross-border issues arise, know-how and information at the global level mean that there are constraints on handovers for security reasons.

Disparities in global biosecurity preparedness

Biosafety standards, which are part of biosecurity, are well-developed in some parts of the world, including Europe, the United States, and some Asian countries. However, countries in the global south have questions in terms of institutions, technology, and governance capacity. As was the case in COVID-19, where the management standards of Chinese bioresearch laboratories were called into question. Thus, even if the WHO and others call for assistance, they will not be able to respond in time to an emergency. In other words, there are structural problems in cooperation among response entities.

Flexible cooperation strategies in biosecurity

International organisations have developed international response method standards, but they leave it up to each country to decide how to implement them. This approach is not wrong, since each country has its political considerations. However, when the nature of the situation changes, it becomes difficult to respond due to the wide range of issues at stake in biosecurity. Fundamentally, the characteristic is that international cooperation is essential in a pandemic, whereas local responses are necessary in dealing with terrorism.

However, in the development of preparedness, terrorism requires coordinated international containment, whereas a pandemic requires enhanced local preparedness. In other words, the entities that should respond and the nature of cooperation are reversed between contingency response and peacetime preparedness. This switchover needs to be implemented flexibly as the situation evolves. Biosecurity policy needs to address this problem. Therefore, there are plenty of reasons why Quad countries should speak in one voice to induce other nations to accept those standards; in this manner shifting their focus from national implementation to international response.

Proposed solutions

To this end, I propose the following.

1. Develop universal biosafety guidelines and enhance capabilities in the global south.
 - Identify and bridge capacity gaps using strategies similar to UNSC Resolution 1540.
2. Share information on the characteristics of biosecurity crises.
 - Promote policy coordination before crises occur.
 - Ensure a smooth transition from individual to global crisis responses.
3. Create emergency response teams in Quad countries for terrorism and pandemic situations.
 - Set up a system for international cooperation with medical teams.
 - Regularly conduct response drills to avoid political interference during emergencies.
 - Establish ongoing collaboration with national health insurance organisations.

In detail

First, international universalisation of biosafety guidelines should be promoted as a basis for biosecurity. Capacity building in the countries of the global south is essential. Weak areas of their domestic governance increase the likelihood that terrorists will take advantage of them, leading to delays in response during a pandemic. However, the global south is a generic term for a diverse set of nations, and each nation has different governance capacities. Therefore, the first step is to visualise the gaps in capacity based on guidelines on biosafety, using a method similar to UNSC Resolution 1540.⁴

Second, promote sharing of the nature of the crisis concerning biosecurity. The difference in the character of the situation between terrorism and a pandemic creates a gap in the response. Therefore, the relative nature of the two crises should be promoted, and policy coordination should be promoted at the pre-crisis stage. This would allow for a seamless transition between individual responses and the global response.

Third, Quad countries should create emergency response teams that can be used for both terrorism and pandemic issues, and build capacity in each region. Many countries are already preparing to respond to emergencies. A system should be established whereby each country provides each other with internationally deployable medical teams. Furthermore, each region should conduct pre-assumptions and response drills so that political considerations do not play a role in the deployment of such teams.⁵ A process to evaluate the situation should also be established, and cooperation with the respective national health insurance organisations should be constantly checked.

Conclusion

Bio-crises are inevitable, and the requisite solutions are discernible from past experiences. Strengthening future crisis preparedness based on past lessons is imperative.

Notes

¹ The Japanese government proposed enhanced cooperation and information sharing in the BWC context. It is based upon its own lessons learned from the Ebola outbreak case. BWC/MSP/2019/MX.4/WP.3, accessed 4 December 2023,

<https://www.mofa.go.jp/mofaj/files/000507886.pdf>

² BWC established the Implementation Support Unit (ISU) to deal with biosecurity emergencies in 2006. It is clear from COVID-19 that the WHO and other relevant international institutions could not appropriately manage the case through those previous proposed and established mechanisms. However, the Quad may provide an alternative and focused implementation group since its political proximity among member states, and its sense of responsibility against peace and stability of the region. BWC/MSP/2018/MX.4/WP.7, accessed 4 December 2023,

<https://www.mofa.go.jp/mofaj/files/000393164.pdf>

³ Shuiichi Amano, "International Trend in Biosecurity," *Journal of International Security* (Japan), Vol.40, No.1, (June 2012)

⁴ Kiwako Tanaka, "Bio-Threat and Biosecurity as Agenda for International Security," *The Journal of Social Science* (Japan), No. 89, (2022), pp.139-164

⁵ A similar proposal was made previously and there may be some lessons to be learned. However, the Quad framework may work differently due to its political settings. <https://mhlw-grants.niph.go.jp/system/files/2005/057091/200500674A/200500674A0006.pdf>, accessed 4 December 2023



About the author

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About the Quad Tech Network

The Quad Tech Network (QTN) is an initiative of the NSC, delivered with support from the Australian Government. It aims to establish and deepen academic and official networks linking the Quad nations – Australia, India, Japan, and the United States – in relation to the most pressing technology issues affecting the future security and prosperity of the Indo-Pacific.

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