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Strengthening Global Systems to Prevent and Respond to High-Consequence Biological Threats



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In March 2021, NTI partnered with the Munich Security Conference to conduct a tabletop exercise on reducing high-consequence biological threats. The exercise examined gaps in national and international biosecurity and pandemic preparedness architectures—exploring opportunities to improve prevention and response capabilities for high-consequence biological events. Participants included 19 senior leaders and experts from across Africa, the Americas, Asia, and Europe with decades of combined experience in public health, biotechnology industry, international security, and philanthropy.

This report, *Strengthening Global Systems to Prevent and Respond to High-Consequence Biological Threats: Results from the 2021 Tabletop Exercise Conducted in Partnership with the Munich Security Conference*, written by Jaime M. Yassif, Ph.D., Kevin P. O'Prey, Ph.D., and Christopher R. Isaac, M.Sc., summarizes key findings from the exercise and offers actionable recommendations for the international community.

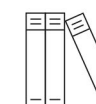
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Exercise Summary

Developed in consultation with technical and policy experts, the fictional exercise scenario portrayed a deadly, global pandemic involving an unusual strain of monkeypox virus that first emerged in the fictional nation of Brinia and spread globally over 18 months. Ultimately, the exercise scenario revealed that the initial outbreak was caused by a terrorist attack using a pathogen engineered in a laboratory with inadequate biosafety and biosecurity provisions and weak oversight. By the end of the exercise, the fictional pandemic resulted in more than three billion cases and 270 million fatalities worldwide.

Discussions throughout the tabletop exercise generated a range of valuable insights and key findings. Most significantly, exercise participants agreed that, notwithstanding improvements following the global response to COVID-19, the international system of pandemic prevention, detection, analysis, warning, and response is woefully inadequate to address current and anticipated future challenges. Gaps in the international biosecurity and pandemic preparedness architecture are extensive and fundamental, undermining the ability of the international community to prevent and mount effective responses to future biological events—including those that could match the impacts of COVID-19 or cause damage that is significantly more severe.



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Report Findings and Recommendations

Discussion among exercise participants led to the following **key findings**:

(The full findings are available on page 14 of the report.)

- **Weak global detection, assessment, and warning of pandemic risks.** The international community needs a more robust, transparent detection, evaluation, and early warning system that can rapidly communicate actionable information about pandemic risks.
- **Gaps in national-level preparedness.** National governments should improve preparedness by developing national-level pandemic response plans built upon a coherent system of “triggers” that prompt anticipatory action, despite uncertainty and near-term costs—in other words, on a “no-regrets” basis.
- **Gaps in biological research governance.** The international system for governing dual-use biological research is neither prepared to meet today’s security requirements, nor is it ready for significantly expanded challenges in the future. There are risk reduction needs throughout the bioscience research and development life cycle.
- **Insufficient financing of international preparedness for pandemics.** Many countries around the world lack financing to make the essential national investments in pandemic preparedness.

To address these findings, the report authors developed the following **recommendations**:

(The full recommendations are available on page 22 of the report.)

Bolster international systems for pandemic risk assessment, warning, and investigating outbreak origins

- The WHO should establish a graded, transparent, international public health alert system.
- The United Nations (UN) system should establish a new mechanism for investigating high-consequence biological events of unknown origin, which we refer to as a “Joint Assessment Mechanism.”

Develop and institute national-level triggers for early, proactive pandemic response

- National governments must adopt a “no-regrets” approach to pandemic response, taking anticipatory action—as opposed to reacting to mounting case counts and fatalities, which are lagging indicators.
- To facilitate anticipatory action on a no-regrets basis, national governments should develop national-level plans that define and incorporate “triggers” for responding to high-consequence biological events.

Establish an international entity dedicated to reducing emerging biological risks associated with rapid technology advances

- The international community should establish an entity dedicated to reducing the risk of catastrophic events due to accidental misuse or deliberate abuse of bioscience and biotechnology.
- To meaningfully reduce risk, the entity should support interventions throughout the bioscience and biotechnology research and development life cycle—from funding, through execution, and on to publication or commercialization.

Develop a catalytic global health security fund to accelerate pandemic preparedness capacity building in countries around the world

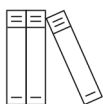
- National leaders, development banks, philanthropic donors, and the private sector should establish and resource a new financing mechanism to bolster global health security and pandemic preparedness.
- The design and operations of the fund should be catalytic—incentivizing national governments to invest in their own preparedness over the long term.

Establish a robust international process to tackle the challenge of supply chain resilience

- The UN Secretary General should convene a high-level panel to develop recommendations for critical measures to bolster global supply chain resilience for medical and public health supplies.

Click here to learn more about the November 23, 2021 launch event for this report on the margins of the Biological Weapons Convention Meeting of States Parties.

To learn more about NTI’s previous tabletop exercises at the Munich Security Conference, see our 2019 report, “A Spreading Plague,” and our 2020 report, “Preventing Global Catastrophic Biological Risks.”



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