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# A Spreading Plague: Lessons and Recommendations for Responding to a Deliberate Biological Event

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## SUMMARY

On the eve of the 2019 Munich Security Conference, senior leaders from security, public health, humanitarian, and political sectors participated in a dramatic tabletop exercise designed to explore global capability to rapidly respond to a deliberate biological event. The exercise uncovered major gaps in coordination, information sharing, attribution, and financing. This report presents key findings and recommendations for urgent improvements to avoid catastrophic consequences of deliberate and other high-consequence biological events.

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## Acknowledgements

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## Executive Summary

**T**he risks of a global catastrophic biological event<sup>1</sup> are growing, intensified by an increasingly interconnected world, terrorist and state interest in weapons of mass destruction, global political instability, and rapid advances in biotechnology. International leaders and organizations today are unprepared to react with the kind of effective, coordinated response needed to investigate and identify the pathogen, prevent the spread of disease, and, most importantly, save lives. Without the right procedures and tools in place, there's little doubt that a rapidly spreading high-consequence biological event would place overwhelming stress on the people and institutions responsible for response. The lack of established procedures would very likely undermine the trust and cooperation needed between the health professionals, humanitarian responders, and security officials who would be aiming for a coordinated, effective international response.

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To address this preparedness deficit, the Nuclear Threat Initiative, Georgetown University's Center for Global Health Science and Security, and the Center for Global Development convened senior health, humanitarian, security, and political leaders to participate in a tabletop exercise designed to explore command, control, and coordination of an international response to an unusual and rapidly spreading biological event that began in the fictional country of "Vestia." The dramatic exercise uncovered major gaps in international coordination, information sharing, and attribution between health and security officials. It sparked disagreements among leading experts over whether a permanent United Nations-based coordinator is needed to facilitate coordination among the various entities responsible for pandemic response. And it uncovered divisions over committing attention and resources to finding the perpetrators as a way to deter future attacks.

In recent years, the international community has worked to address some of these issues. Following the 2014–2016 Ebola epidemic in West Africa, for example, officials made significant improvements to United Nations (UN) policies, plans, financing, and guidance<sup>2</sup> for epidemic responses. However, despite these changes, the ongoing Ebola outbreak in the Democratic Republic of Congo has now become the second largest in history, demonstrating weaknesses in global capability to stop outbreaks in insecure settings where healthcare workers are targeted by violence. Additionally, the system remains untested for *deliberate* biological events and other high-consequence pandemic scenarios—including those that spread rapidly and occur in unstable environments where existing health and humanitarian capabilities would quickly be overwhelmed and nations would compete for scarce resources to respond.

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<sup>1</sup> Schoch-Spana et al., "Global Catastrophic Biological Risks: Toward a Working Definition," *Health Security* 15, no. 4 (August 2017), <https://www.liebertpub.com/doi/full/10.1089/hs.2017.0038>.

<sup>2</sup> See <https://interagencystandingcommittee.org/principals/documents-public/final-iasc-system-wide-level-3-l3-activation-procedures-infectious>; and <https://www.who.int/features/qa/health-emergencies-programme/en/>.

In fact, only 10 percent of assessed countries have been able to demonstrate biosafety and biosecurity capacity to prevent deliberate and accidental outbreaks.<sup>3</sup>

Unfortunately, the Biological Weapons Convention (BWC) and its supporting process do not have the necessary resources to support an international response to such an event or state-sponsored attack, and it is unclear what role the BWC would play if an attack was claimed by a non-state group. Adding to the urgent need to address gaps in preparedness: desktop DNA printers, enabled by enzymatic synthesis, could soon make it even easier and cheaper to make and modify dangerous agents.<sup>4</sup>

Bill Gates issued a stark warning about this eventuality to top security and defense officials at the 2017 Munich Security Conference: “We ignore the link between health security and international security at our own peril,” he said. On the eve of the 2019 Munich Security Conference, 18 senior security, public health, and humanitarian leaders convened to respond to the fast-spreading plague that began in Vestia as a way to further explore known gaps in global preparedness to respond to a high-consequence, genetically engineered agent and to identify ways to close those gaps.



This report presents key findings from the tabletop exercise in Munich and

offers recommendations from the event organizers, Elizabeth Cameron of the Nuclear Threat Initiative, Rebecca Katz of the Center for Global Health Science and Security at Georgetown University, and Jeremy Konyndyk of the Center for Global Development. The exercise was conducted under Chatham House Rule; the organizers made every effort to provide an accurate description of what transpired and of the findings generated. The report’s recommendations were informed by the discussion during the tabletop exercise *but should not be attributed to the event participants*.

An important note: Although the Vestia scenario was developed to exercise response to the deliberate use of a biological agent, much of what transpired also would apply to other high-consequence, unusual, or potentially globally catastrophic biological scenarios. As a result, the recommendations in this report also may be relevant for similarly devastating events involving unknown agents, accidentally released agents, or outbreaks occurring in insecure environments.

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<sup>3</sup> Data were drawn from the WHO Strategic Partnership for International Health Regulations (2005) and Health Security website (<https://extranet.who.int/sph/jee-dashboard>) on May 24, 2019. The information was derived from completed and published WHO Joint External Evaluations for the following indicators: P.6.1 Whole-of-government biosafety and biosecurity system in place for human, animal, and agriculture facilities; and P.6.2 Biosafety and biosecurity training and practices. Countries assessed as having demonstrated biosecurity and biosafety core capacity achieved an average score of 4.0 or greater.

<sup>4</sup> Robert F. Service, “New Way to Write DNA Could Turbocharge Synthetic Biology and Data Storage,” *Science* (October 2, 2018), <https://www.sciencemag.org/news/2018/10/new-way-write-dna-could-turbocharge-synthetic-biology-and-data-storage>; and Palluk et al., “De Novo DNA Synthesis Using Polymerase-Nucleotide Conjugates,” *Nature Biotechnology* 36, (June 18, 2018): 645–650, <https://www.nature.com/articles/nbt.4173>.

Many of the gaps in preparedness and response, as well as the conflicts among organizations, have been well known for years. The challenges to better coordination are significant, but they must not be viewed as intractable. Leaders across all sectors have an obligation to develop better systems, mechanisms, and procedures for saving lives and preventing future potentially catastrophic outbreaks. The risks are rising. It is time to meet this challenge.

## ORGANIZERS' RECOMMENDATIONS

### International Coordination

1. The Office of the United Nations Secretary-General (UNSG) should designate a permanent facilitator and/or unit devoted to coordinating the response to deliberate, high-consequence, or unusual biological events.
2. The UNSG, by December 2019, should designate a time-limited expert panel, led by the designated permanent facilitator and/or unit. The panel should develop specific tools to fill gaps in the response architecture relevant to deliberate biological events.

### Information Sharing

3. The UNSG and the World Health Organization (WHO) Director General should co-convene a meeting in 2020 to propose specific mechanisms to enable the rapid exchange of genetic information across sectors during a deliberate biological event and other high-consequence scenarios.

### Investigation and Attribution

4. The UN Secretary-General should ensure that a formal, clear, and regularly exercised process for investigation and attribution of an alleged use of biological weapons is robust and sustained. The aim of such a process is to help deter future use of biological weapons and to stop disease spread following an attack. This should include processes geared toward alleged state or non-state use of biological weapons and must include a more robust and rapidly deployable investigative team through the UN Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons (UNSGM).

### Financing for Response and Preparedness

5. UN Member States should urgently identify and rapidly increase financing for national pandemic preparedness across the public health and agricultural sectors, including for capabilities outlined within the WHO Joint External Evaluation (JEE). As part of this process, countries should establish benchmarks and prioritize financing for biosecurity and other security sector-related targets. This should be a multi-sectoral process that includes the private sector.

Full findings and recommendations begin on page 9.



## About the Exercise

### Purpose

The exercise was designed to identify gaps, allowing organizers to recommend improvements that can be made now—before an event occurs—in global capacity and ability to conduct coordinated, timely response operations and investigations into deliberate and other high-consequence or potentially globally catastrophic biological events.

### Participants

The tabletop convened 18 current and former senior leaders with decades of combined experience leading public health responses, humanitarian operations, peacekeeping missions, law enforcement and security investigations, and financing for health emergencies. Participants were asked to consider the scenario and candidly discuss gaps in mechanisms, coordination, and information sharing across the UN system for responding to high-consequence deliberate biological events.

### Scenario

The fictitious scenario begins in winter 2018 as an emergency meeting is called by the WHO Director General in response to a request for assistance from the nation of Vestia, a country embroiled in civil unrest whose UN-recognized government relies on an international military coalition to cope with an ongoing, but nearly extinguished, insurgency. Vestia's leaders are dealing with an unusual outbreak in an area of the country recently vacated by a terrorist organization. People are complaining of flu-like symptoms—and they are dying fast, with a case fatality rate of 80 percent. The disease appears to be pneumonic plague, and the antibiotics typically used to treat plague aren't working.



With cases spreading to Europe and the United States, the WHO declares a Public Health Emergency of International Concern, and the Prime Minister of Vestia asks the United Nations Secretary-General for an investigation into alleged use of a biological weapon.

As the scenario progresses, the agent is sequenced and found to be genetically engineered and antibiotic resistant. The scenario ends with a terrorist group claiming responsibility and intelligence reports linking that group to a potential state sponsor.

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## Questions for Exploration

The complex scenario was developed, in part, to resemble recent experiences related to the use of chemical weapons in Syria and past and ongoing Ebola crises. During the UN-led investigation into the 2013 use of chemical weapons in Syria, standard operating procedures for the investigation of alleged use, led by the Organisation for the Prohibition of Chemical Weapons (OPCW), in support of the UN Office of Disarmament Affairs (UNODA), were largely created *ad hoc*. Similarly, the UN struggled with command and control during the 2014–2016 Ebola response, ultimately deciding to build a command-and-control “health-keeping” mission—UN Mission for Ebola Emergency Response (UNMEER)—which under-performed and was criticized as ineffective. Additionally, the ongoing Ebola outbreak in the Democratic Republic of Congo is fueled by political instability and fear.

So it was not a surprise to find that the combination of security, humanitarian, and public health dimensions of the crisis played during the Munich exercise caused confusion and placed a substantial strain on leaders responsible for national, regional, and international response. The goal was to expose the roots of that strain and confusion so that organizers could identify clear recommendations for urgent action to address the gaps in organization and capacity faced by our current international system for responding to high-consequence biological events.

To that end, leaders were asked to respond to specific questions throughout. Among them:

- Who and what organizations are in charge of addressing Vestia’s early request for assistance?
- How would the UN respond to Vestia’s request for an investigation into a possible biological attack?
- Should there be a specific UN lead for an overarching coordination in a crisis such as this? If so, who and in which organization?
- Amid signs that the outbreak was unusual, what would trigger the involvement of security agencies, such as UNODA and INTERPOL?
- Who should be in charge of communications to manage public anxiety and prevent unnecessary actions that could negatively impact economies?



- How should sample collection and analysis be conducted and information be shared among the various involved public health, security, and humanitarian actors?
- How should sensitive security information be made available to national governments and responders?

## Key Discussion Points

Three key overarching questions guided the discussion—and in some cases, prompted significant disagreement:

**1. How should overarching coordination be achieved for a deliberate biological event?**

*With no single stakeholder holding a clear coordinating role across all aspects of a response to a deliberate biological event, leaders worked to identify existing entities that should be responsible for coordination and debated whether a new entity or structure is required.*

**2. How should information between sectors be shared and coordinated across different aspects of an attribution investigation, public health response, and humanitarian operation?**

*Acknowledging barriers to information sharing that could hinder effective public health, humanitarian, and attribution responses to a deliberate biological event, leaders struggled with a lack of transparent information-sharing mechanisms for organizations involved in the public health response, attribution investigation, and humanitarian operation that could result in a breakdown in overall response.*

**3. How should an attribution investigation for a deliberate biological event be conducted during an active public health and humanitarian response?**

*The exercise uncovered gaps in standard operating procedures and mechanisms for deploying an attribution investigation during an ongoing public health emergency, and participants underscored that mechanisms for coordination and communication among UNODA, national and regional investigative teams, and INTERPOL have not been well defined for situations that have the potential to include both terrorist and state involvement.*

This exercise was not focused on national preparedness, although tabletop participants appropriately highlighted the importance of national preparedness and major financing shortfalls in filling global health security gaps. The scenario was designed to identify recommendations that would improve inter-organizational response. The event organizers recognize and strongly support international efforts to speed national action planning for health security and to mobilize national and donor-based resources to swiftly fill gaps and enhance preparedness.

## EXERCISE PARTICIPANTS

### KEYNOTES

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Secretary General, International Federation of Red Cross and Red Crescent Societies  
Co-Chair, Global Preparedness Monitoring Board  
Former Director of Partnerships and Resource Development, UN International Children's Emergency Fund

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Co-Chair, Global Preparedness Monitoring Board  
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Former Director-General of the World Health Organization  
*Remarks and views delivered in absentia*

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## Findings and Recommendations

The Munich exercise identified major gaps in overarching coordination, communication, information sharing, and attribution between public health, humanitarian, and security actors during a deliberate biological event.

Key themes to address were:

- Overarching international coordination
- Information sharing
- Investigation and attribution
- Financing for response and national preparedness.

Under each theme, the organizers provided recommendations addressing concerns raised during the exercise. These recommendations reflect the views of the event organizers and should not be attributed to the participants in the tabletop exercise.

### **THEME** Overarching International Coordination

#### Findings

The senior leaders gathered in Munich hotly debated the utility of a permanent, single, non-operational facilitator for deliberate biological events. All participants agreed that, while the WHO likely would lead the public health response for a deliberate biological event, the complex political and security challenges would exceed the expertise and capabilities of the WHO—making it poorly suited to coordinate the overall, multi-mission effort for a high-consequence event.

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**A number of participants affirmed the need for a more clear designation of roles and leadership arrangements across the UN structure ...**

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Some participants called for a single facilitator within the UN and outside of the WHO to be designated in advance of such an event. These experts noted that national governments and regional organizations would quickly be overwhelmed during a deliberate and globally spreading biological event. They argued that a formalized, overarching facilitator within the UN could serve as a deterrent to the future use of biological weapons. However, other participants argued against the designation of such a person in favor of a more *ad hoc* approach that would designate a lead facilitator depending on the circumstances of the event. These participants also warned against the creation of an operational facilitator, warning that the facilitator could create confusion among UN entities that should each have their own defined role and field operational functions. A number of participants affirmed the need for a more clear designation of roles and leadership arrangements across the UN structure for high-consequence, rapidly spreading, deliberate biological events, noting that this would better facilitate response, given the need for coordination between public health, humanitarian, and security operations and attribution investigation.

Finally, participants noted that the scenario relied upon a cooperative state (Vestia). In other circumstances, sovereign countries that ultimately have a lot of power to decide whether to report or to allow investigation into an outbreak that is spreading within and beyond its borders may not be as cooperative.

Participants also made the following observations during the exercise:

- The UN has historically appointed, largely on an *ad hoc* basis, special representatives to coordinate responses to particularly challenging events, including the use of chemical weapons in Syria and the case of the UN Mission for Ebola Emergency Response (UNMEER). However, this approach can place the appointed facilitator in a position of starting from scratch, without a foundation or staff to build upon.
- The designation of an identified “coordinator” or “special representative of the UNSG” in advance could facilitate unified engagement between the public health, humanitarian, and investigative functions during a deliberate biological event. Such a pre-existing designation could also serve as a deterrent against reload during the current crisis and/or future biological weapons use.
- On the other hand, existing approaches that do *not* rely on a pre-existing facilitator or coordination function, but instead would designate a special envoy or overarching coordinator once an event has begun, could allow for a response geared toward the specific nature of the event in question. Such an approach also would respect the existing UN structure and unity of effort for humanitarian and disaster response.
- An entirely new response structure, created outside of existing instruments and specific to deliberate biological events, could be confusing. However, a mechanism for incorporating an attribution investigation function into an ongoing UN humanitarian and public health response to a pandemic event is needed, and the current system has no such mechanism in place.



- A mapping exercise might be useful to determine roles and responsibilities across the UN system for the response to a deliberate biological event. Such an exercise could identify disparate needs for personnel, training, laboratory confirmation, information sharing, and stockpiling of personal protective equipment and medical countermeasures that might arise in such an instance.
- Coordinated public affairs and risk communications between affected countries and within the UN will be critical to minimize public anxiety during a deliberate biological event.
- Because affected countries retain their sovereignty during an outbreak, effective response and attribution will rely on cooperation between and among affected states and the UN system.

## Organizers' Recommendations

**The Office of the United Nations Secretary-General should designate a permanent facilitator and/or unit devoted to coordinating the response to deliberate, high-consequence, or unusual biological events.**

During the initial days and weeks of a deliberate biological event, through the creation and release of a new or engineered agent or another high-consequence scenario, there likely will be a great deal of confusion about what has happened, what caused it, and whether the event was naturally occurring, accidental, or deliberate.

Designating a person and/or unit within the Office of the UNSG would provide vital cross-sector communication and coordination function. Such a facilitator and/or unit should:

- Be clearly authorized and empowered to serve a facilitation function in charge of coordinating response but should not have direct operational responsibilities. Rather, the facilitator should be responsible for convening key institutions and developing aligned plans to respond to and address the specific challenges that arise from deliberate and other unusual high-consequence biological events.
- Exist outside of the WHO, the UN Office for the Coordination of Humanitarian Affairs (UNOCHA), or UNODA—but have engagement from all three—to be able to engage, coordinate, and facilitate action across and among these three organizations and with the UNSG.
- Use “peacetime” where there is no immediate crisis to plan, conduct regular exercises, and identify and fill gaps in standard operating procedures to promote unity of effort across the public health, humanitarian, and security-led responses when events occur. In addition the designated facilitator and/or unit, working in coordination with the UNSG, the WHO, UNODA, and UNOCHA, should develop guidance for information and data sharing for the public during the response to a deliberate biological event.
- Work with the UN Operations and Crisis Centre (UNOCC) to conduct annual exercises for deliberate biological events and other potentially globally catastrophic biological scenarios to understand gaps and deter deliberate use.

**The UNSG, by December 2019, should designate a time-limited expert panel, led by the designated permanent facilitator and/or unit. The panel should develop specific tools to fill gaps in the response architecture relevant to deliberate biological events.<sup>5</sup>**

An expert panel should:

- Present recommendations for adoption to fill existing gaps in the international response architecture for deliberate biological events by September 2020.
- Initiate a mapping exercise to assess which parts of the UN system would be involved in a response to a deliberate biological event, which laboratories could contribute, which existing international instruments, mandates, or other authorities are relevant, and which new authorities and information-sharing needs and structures might be required. This activity should include reviewing the existing UN Health Cluster Guidelines<sup>6</sup> and Inter-Agency Standing Committee (IASC) Protocol and could draw upon existing efforts to map key stakeholders.<sup>7</sup>
- Update or develop UN system guidance to specifically outline how each involved organization will work with others to share information, including during events involving security organizations and disparate data streams.

## **THEME** Information Sharing

### Findings

Exercise participants generally agreed that involved parties, including security leaders, have a “duty to share” any information that could aid the public health and humanitarian response during a deliberate biological event. They discussed barriers to such information sharing, noting fundamental tensions among (a) the need for transparency and sharing information about samples and genetic data to maximize the efficacy of the public health response; (b) the need for humanitarian responders to maintain political neutrality and independence to gain and maintain safe access to populations in conflict zones; and (c) the tendency of national and international organizations to conceal information gained through security investigative channels for the purpose of determining the source of the attack.

Participants also made the following observations during the exercise:

- It will be important—and very difficult—to overcome barriers to information sharing among public health response, humanitarian efforts, and attribution investigators.
- It will be challenging to identify a specific mechanism to allow rapid sharing of security sector data between international organizations and with national governments. Participants also expressed

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<sup>5</sup> While this tabletop exercise focused on a deliberate biological release, these recommendations would also apply to other high-consequence scenarios, as well as outbreak responses that must take place in politically unstable or insecure environments.

<sup>6</sup> Health Cluster Guide (June 2009), <https://www.who.int/health-cluster/resources/publications/hc-guide/en/>.

<sup>7</sup> Responding to Deliberate Biological Events, Georgetown University Medical Center, Center for Global Health Science and Security, [https://ghss.georgetown.edu/dbe\\_response](https://ghss.georgetown.edu/dbe_response).

concern that the involvement of INTERPOL, UNODA, and security elements within national governments—depending on whether a terrorist, state, or both are suspected—will further complicate information sharing during a deliberate biological event.

- The overriding imperative of stopping an outbreak should be to alleviate suffering, and there should be no restrictions on information sharing that could impede rapid public health and humanitarian response.
- The sharing of genetic data during this scenario could be impeded, due to an interpretation of the Nagoya Protocol on Access and Benefit-sharing,<sup>8</sup> which was developed in 2010 as a supplementary agreement to the 1992 Convention on Biological Diversity. Advance mechanisms, such as pre-existing Material Transfer Agreements, offer one possible approach for ensuring rapid data-sharing during an outbreak, while also protecting national sovereignty and rights for future data publication.
- Creating and maintaining a firewall between information gathered during an attribution investigation and information gathered from a public health investigation may be important to rapidly attribute the attack and prevent “reload,” or a quickly recurring attack. However, mechanisms for rapid, secure information sharing between health and security officials will be essential for stopping the disease spread and saving lives.
- In a conflict zone, there will be tension between security operations and medical relief operations. If humanitarian involvement in containing an outbreak is viewed as tied to or supporting the security response—particularly through information-sharing—it could undermine efforts to contain the outbreak. For this reason, humanitarian workers are likely to be reticent about the use of their data in an attribution investigation, which may hinder information sharing between sectors during an event.



## Organizers' Recommendation

**The UNSG and the WHO Director General should co-convene a meeting in 2020 to propose specific mechanisms to enable the rapid exchange of genetic information across sectors during a deliberate biological event and other high-consequence scenarios.**

Information sharing during a high-consequence biological crisis, including a deliberate biological event, should be prioritized first and foremost as part of an effective public health and humanitarian response to save lives. At the same time, it also is vital to investigate and attribute an attack to stop disease spread and prevent further use.

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<sup>8</sup> The Nagoya Protocol on Access and Benefit-Sharing, Convention on Biological Diversity, <https://www.cbd.int/abs/>.

- The UNSG and the WHO Director General should collaborate now—in advance of a high-consequence biological event—to create conditions that will enable rapid sharing of genetic data and samples. Standing Material Transfer Agreements to facilitate data and sample sharing should be explored.
- In advance of a deliberate biological event, the UNSG, the WHO, INTERPOL, and UNOCHA should urgently clarify the mechanism(s) for information sharing between security organizations and with UN Member States, including through the use of functional exercises across organizations and sectors.

## **THEME** Investigation and Attribution

### Findings

The tabletop exercise scenario intentionally included claims of terrorist use and a link to a potential state sponsor. In this context, participants discussed mechanisms for launching an attribution investigation for deliberate biological events. They noted that previous efforts to respond to deliberate chemical weapons events, including the stand-up of investigative and attributive mechanisms related to use of chemical weapons in Syria, were personality dependent, conducted on an *ad-hoc* basis, and succeeded largely through the designation of strong leadership by the UNSG and through the extensive expertise available at the OPCW.

Participants also made the following observations during the exercise:

- There is disagreement over the immediacy for focusing on an attribution investigation during a deliberate biological event. Experts with significant public health or humanitarian experience generally argued that an attribution investigation should take a backseat to the public health and humanitarian responses; those who served in more security-focused positions argued that attribution investigation would be vital to stop another attack and, ultimately, to the understanding needed to stop disease spread.
- It is unclear whether, and—if so—how, an attribution investigation could or should be “firewalled” from public health and humanitarian responses. Public health leaders who participated in the tabletop exercise expressed concern that a firewall would negatively impact the response to the spreading outbreak, while security professionals urged consideration of a firewall as essential to an effective attribution.
- Cooperation from sovereign national governments in affected countries will be vital for a successful UN-led attribution investigation, and is a requirement for an effective investigation to take place within sovereign boundaries. For example, the UN fact-finding mission in Syria occurred on the basis of an invitation from the Government of Syria.
- There is a strong potential for government collapse in a relatively weak affected state, which could create an additional hurdle for a UN-led attribution investigation.



- A leadership deficit is likely during a deliberate biological event, due to the absence of a specific established entity, such as the OPCW for chemical weapons, which could provide personnel and support for an investigation into the alleged use of biological weapons. However, participants also did not believe it would be possible or politically feasible to create an “O-P-B-W” and also did not recommend assigning a biological weapons-focused investigative mission to the OPCW.
- In lieu of a specific organization tasked with conducting an attribution investigation, there is an urgent need for a trained global roster of experts available to respond to deliberate and other high-consequence biological events. A cadre of pre-designated, trained, and exercised experts to perform fact-finding investigations is necessary.
- It is vital to hold accountable those who deploy weapons of mass destruction and related crimes, particularly for the purpose of deterring future actors and reinforcing norms against biological weapons use.
- Politics at the UN, including ongoing and unrelated political disagreements among P-5 countries, likely will impact the effectiveness and outcomes of any UN-led attribution investigation, even in the event of a pre-designated, independent, and impartial coordinator.

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**The BWC, UNODA, and INTERPOL currently lack the authority, workforce, and mandate to handle such an event.**

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## Organizers’ Recommendation

**The UN Secretary-General should ensure that a formal, clear, and regularly exercised process for investigation and attribution of an alleged use of biological weapons is robust and sustained. The aim of such a process is to help deter future use of biological weapons and to stop disease spread following an attack. This should include processes geared toward alleged state or non-state use of biological weapons and must include a more robust and rapidly deployable investigative team through the UN Secretary-General’s Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons (UNSGM).**

There is no question that world leaders will quickly call for an investigation into the source of a spreading deliberate biological attack to identify the perpetrator(s) and deter further use. However, the source of an attack could be unknown and difficult to determine during an already confusing and globally spreading outbreak, and it is unclear which organization(s) would have the resources, workforce, and protocols to lead the security-related investigation—particularly if the source of the attack remains unclear for any length of time. The BWC, UNODA, and INTERPOL currently lack the authority, workforce, and mandate to handle such an event.

- The UNSGM should provide UNODA with the resources and authorities necessary for conducting UNSGM fact-finding missions, which would include an attribution investigation mandate, whether the alleged use was the result of a terrorist or a state-sponsored attack. UNODA should develop clear protocols for operations, including best practices for collaboration with wider humanitarian and public health operations that may already be underway.
- The UNSGM should be regularly exercised for biological scenarios, with access to a roster of trained and globally diverse experts.

- The UNSG, in coordination with UNODA, the WHO, and INTERPOL, should designate a specific, trusted laboratory network responsible for receiving evidence and samples related to an attribution investigation for a deliberate biological event, as well as determining chain of custody. Use of such a laboratory network should be regularly exercised.
- Countries should establish specific guidance and memoranda of understanding for linking security organizations, including law enforcement officials, to public health and veterinary agencies in the event of a suspected deliberate biological event. National Action Plans for Health Security, which follow the WHO International Health Regulations (IHR) JEE process, should prioritize milestones for achieving this requirement.

## **THEME** Financing for Response and National Preparedness

### Findings

Global financing for pandemic response continues to be severely lacking, including resources for evacuating public health and humanitarian responders, stockpiling and distributing personal protective equipment, appropriately isolating and quarantining affected individuals, and rapidly developing, distributing, and dispensing medical countermeasures. Although the exercise was not intended to address existing major gaps in national preparedness, participants emphasized the relationship between a country's capabilities and an effective international response to a deliberate biological event.

Participants also made the following observations:

- The private sector would like to assist in the response to a deliberate or otherwise high-consequence biological event; however, there is currently no framework (“receptor site”) in place that would allow private companies to plug into a response and provide assets in a more coordinated way.
- Medical countermeasures and personal protective equipment will be vital in curbing the spread of the outbreak in the scenario. Globally coordinated protocols for developing, stockpiling, distributing, and dispensing medical countermeasures will be crucial.
- A larger workforce is needed for responding to high-consequence biological events, including training for frontline health workers.
- Better global biosurveillance capabilities are required to drive data, advance analytics, and forecast outbreak spread.

### Organizers' Recommendation

**UN Member States should urgently identify and rapidly increase financing for national pandemic preparedness across the public health and agricultural sectors, including for capabilities outlined within the WHO JEE. As part of this process, countries should establish benchmarks and prioritize financing for biosecurity and other security sector-related targets. This should be a multi-sectoral process that includes the private sector.**

No matter how synchronized the UN system becomes for addressing deliberate biological events, substantial deficits remain in financing, national governance, and country and community-level preparedness for preventing, detecting, and responding to any high-consequence biological event, particularly one that spreads rapidly and globally.

- UN Member States should prioritize financing for the WHO Health Emergencies Programme, the UNSGM, humanitarian operators, and other relevant programs required for effective response to a high-consequence or deliberate biological event.
- All UN Member States should undergo external evaluations and publish and finance gaps identified by a WHO JEE and the World Organisation for Animal Health (OIE) Performance of Veterinary Services Pathway assessment.<sup>9</sup> The G-7 and G-20 should urgently prioritize assistance to fill global preparedness gaps in 2019 and 2020.
- Costs to implement the National Action Plans for Health Security should be estimated and financed for each country that has undergone a JEE. These should include financing for biosecurity and other security-sector related targets, as well as the other capabilities within the WHO JEE. At least 80 percent of costed plans should be completed by the end of 2019 for countries that have already undergone a JEE. In addition, countries should strive to meet the target outlined in the Global Health Security Agenda 2024 Framework: “By 2024, more than 100 countries that have completed an evaluation of health security capacity will have undergone planning and resource mobilization to address gaps, and will be in the process of implementing activities to achieve impact. These countries will strengthen their capacities and demonstrate improvements in at least five technical areas to a level of ‘Demonstrated Capacity’ or comparable level, as measured by relevant health security assessments, such as those conducted within the WHO IHR Monitoring and Evaluation Framework.”<sup>10</sup>
- In 2019 and 2020, international organizations, including the WHO, UNODA, and the World Economic Forum, should convene private sector companies to identify gaps and concrete next steps to strengthen the capability of companies to provide assets to assist with international response for deliberate biological attacks and other high-consequence biological events.

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<sup>9</sup> Strategic Partnership for International Health Regulations (2005) and Health Security (SPH), <https://extranet.who.int/sph/>; and World Organization for Animal Health, <http://www.oie.int/solidarity/pvs-pathway/>.

<sup>10</sup> Global Health Security Agenda (GHSA) 2024 Framework (November 2018), <https://www.ghsagenda.org/docs/default-source/default-document-library/ghsa-2024-files/ghsa-2024-framework.pdf?sfvrsn=4>.

## Additional Resources

A range of background materials prepared for the exercise is available at [https://ghss.georgetown.edu/dbe\\_response/ttx](https://ghss.georgetown.edu/dbe_response/ttx).

A glossary that defines the terminology and acronyms used in this report and in responses to deliberate biological events more generally is available at [https://ghss.georgetown.edu/dbe\\_response/glossary](https://ghss.georgetown.edu/dbe_response/glossary).



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# About the Organizing Institutions

## Nuclear Threat Initiative

The Nuclear Threat Initiative works to protect our lives, environment, and quality of life now and for future generations. We work to prevent catastrophic attacks with weapons of mass destruction and disruption—nuclear, biological, radiological, chemical, and cyber.

## The Center for Global Health Science and Security at Georgetown University

Directed by Dr. Rebecca Katz, the Center for Global Health Science and Security at Georgetown University was established in September 2016. The Center's multi-disciplinary team develops evidence for action, providing decision makers with the tools they need for sustainable capacity building to prevent, detect, and respond to public health emergencies. The team incorporates expertise in epidemiology, microbiology, virology, animal and human health systems, demography, economics, finance, statistics, and law.

## Center for Global Development

The Center for Global Development works to reduce global poverty and improve lives through innovative economic research that drives better policy and practice by the world's top decision makers.





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