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Establishing a Joint Assessment Mechanism for Discerning the Source of Pandemics of Uncertain Origin

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The COVID-19 pandemic has led to tremendous loss of life, severe economic damage, and exacerbated sociopolitical instability around the world. COVID-19 has revealed that national governments and the international community are deeply unprepared to respond to pandemics, highlighting shared vulnerability to catastrophic biological risks. Future public health emergencies—whether natural, intentional, or accidental in origin—could be as devastating or worse.

Urbanization, global travel and trade, environmental degradation, and continued state and non-state interest in biological weapons make epidemics and pandemics more likely. According to the 2021 [Global Health Security \(GHS\) Index](#)—which measures national-level capacities to prevent, detect, and respond to emerging pandemics—no country is adequately prepared for high-consequence biological events.

Bolstering our ability to determine the origins of potential pandemics is critical to facilitating swift, lifesaving action as the world becomes increasingly vulnerable to fast-moving infectious diseases. International travelers can move dangerous pathogens from around the globe before the world knows of the threat. While mechanisms exist to investigate naturally occurring outbreaks as well as those suspected to result from deliberate biological weapons use, there is currently no instrument for assessing biological events of unknown origin. The [Nuclear Threat Initiative](#) (NTI) is working with international partners to develop a global [Joint Assessment Mechanism](#) (JAM) to fill this critical gap. Ensuring seamless outbreak origin assessments means global decision makers can move more quickly and decisively to minimize the health and economic costs of

high-consequence biological events while also guarding against future risks.

Spotlight on Latin America & the Caribbean

The Latin America and the Caribbean (LAC) region have significant material and political interests that point toward supporting the JAM's development; the JAM can leverage current LAC strengths while also providing focus for areas of potential improvement.

LAC faces growing pandemic risks like the rest of the world, and regional characteristics highlight particular vulnerabilities. The economic fallout from COVID-19 harmed the LAC region more than average. While global output fell by 3.3 percent in 2020, it fell across the LAC region by 7 percent, and in some South American countries by more than 10 percent. Several countries are also highly dependent on tourism. Institutions that can correctly identify the source of an outbreak, so it can be mitigated, can help to restore economic confidence more quickly.

The Amazon basin provides a locus of economic potential, but rapid deforestation and economic development have also increased the risk of zoonotic spillover events. According to the [Global Health Security Index](#), the LAC region

lags in policy mechanisms to prevent the emergence of pathogens, particularly in Amazon countries. The region also falls below global averages for early detection and reporting of epidemics of international concern. While the region does benefit from effective, rapid response and mitigation capabilities once an epidemic spreads, better attribution of an epidemic's origins is also critical for an effective response.

The Joint Assessment Mechanism: Discerning Outbreak Origins for a Safer World

The rapidly evolving biological risk landscape requires that the international community have the capability to swiftly discern outbreak origins to mount a robust response and to guard against future risks. Currently, the [United Nations Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons](#) (UNSGM) has the authority to investigate allegations of deliberate biological weapons use. The World Health Organization has robust operational capabilities and a strong comparative advantage in assessing naturally emerging infectious disease outbreaks, and this is also

the political comfort zone of its member states. However, there is no existing mechanism to assess events of unknown origin that fall between the scope of these two specific mechanisms.

While the WHO has established the Scientific Advisory Group for the Origins of Novel Pathogens, it remains unclear how far WHO is willing or able to go in assessing the origins of human-caused high-consequence biological events. Additionally, the Biological Weapons Convention (BWC) has procedures for convening consultative meetings of States Parties or for lodging allegations with the UN Security Council about the development, possession, or use of biological weapons; these complaints could be taken up by the Security Council and investigated. However, in the 47 years since the BWC came into force, there have been no investigations despite ongoing concerns about noncompliance. This inaction calls into question both the utility of and trust in existing procedures.

The proposed JAM would be a UN-based mechanism designed to address cases when it is unclear if an outbreak emerged naturally or was deliberately or accidentally released. Requiring an internationally diverse roster of technical experts to conduct ongoing data analysis and

the operational capability to rapidly launch on-site assessments, the JAM would take full advantage of modern bioinformatics, data science, and AI to respond to today's risk environment. With a mandate to establish the facts surrounding the origin of an unusual outbreak, the JAM's approach would be transparent, evidence-based, fast-acting, and legitimate in the eyes of the international community.

The JAM can build on existing UN investigative capabilities and bridge gaps between them. As a forward-looking mechanism, it would not investigate the origins of COVID-19, but it would meet UN Secretary-General António Guterres' [call](#) for greater investment in preparedness capabilities to address future pandemics.

NTI originally recommended establishing the JAM in its 2020 report [“Preventing Global Catastrophic Biological Risks”](#), which was based on a senior-level tabletop exercise hosted in conjunction with the Munich Security Conference. The exercise highlighted gaps in international capabilities to assess pandemic origins, and the concept of the JAM emerged as a means of addressing this gap.

There is considerable support among

international stakeholders for establishing the JAM within the office of the UN Secretary-General, as this would provide the necessary authority to activate and deactivate as necessary. This location would also facilitate cooperation with existing UN institutions to share information, expertise, and resources. Reliably establishing the facts about an outbreak will bolster the international community's ability to prevent or respond to the next high-consequence biological threat.

Several open questions remain about how best to build political support for the mechanism, how it would interface with existing UN mechanisms, what its core functions would be, how to incentivize compliance, and how best to leverage the scientific and technological tools at its disposal.

For example, a key challenge lies in securing the cooperation of a country identified as the source of an outbreak when the JAM requests access to conduct on-site assessments. Developing greater incentives and stronger global norms for cooperation will therefore be extremely important.

A well-designed JAM would improve international security. Reliably determining that a pandemic is naturally occurring can quell

suspicious about accidental or deliberate origins. If traced to a laboratory accident, a country could be assisted in strengthening its biosafety and biosecurity systems. The mechanism could also deter malicious actors from using biological weapons by making it more likely that they would get caught.

Creating the JAM and ensuring that it addresses the modern biological risk landscape will require a broad coalition of support from UN member states. Establishing such a mechanism could reinforce the considerable strengths of the LAC region's health security capabilities. While no one knows when or where the next high-consequence biological event will occur, having the capacity to establish the facts about an outbreak of unknown origin is critical to ensuring that the world is better prepared.

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