TABLETOP EXERCISE

Event 201

This training tabletop exercise is based on a fictional scenario. The inputs experts used for modeling the potential impact were fictional. It is a teaching and training resource for public health and government officials.

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The Johns Hopkins Center for Health Security in partnership with the World Economic Forum and the Bill and Melinda Gates Foundation hosted Event 201, a high-level pandemic exercise on October 18, 2019, in New York, NY. The exercise illustrated areas where public/private partnerships will be necessary during the response to a severe pandemic in order to diminish large-scale economic and societal consequences.

Statement about nCoV and our pandemic exercise

In recent years, the world has seen a growing number of epidemic events, amounting to approximately 200 events annually. These events are increasing, and they are disruptive to health, economies, and society. Managing these events already strains global capacity, even absent a pandemic threat. Experts agree that it is only a matter of time before one of these epidemics becomes global—a pandemic with potentially catastrophic consequences. A severe pandemic, which becomes "Event 201," would require reliable cooperation among several industries, national governments, and key international institutions.

About the Event 201 exercise

Event 201 was a 3.5-hour pandemic tabletop exercise that simulated a series of dramatic, scenario-based facilitated discussions, confronting difficult, true-to-life dilemmas associated with response to a hypothetical, but scientifically plausible, pandemic. 15 global business, government, and public health leaders were players in the simulation exercise that highlighted unresolved real-world policy and economic issues that could be solved with sufficient political will, financial investment, and attention now and in the future.

The exercise consisted of pre-recorded news broadcasts, live "staff" briefings, and moderated discussions on specific topics. These issues were carefully designed in a compelling narrative that educated the participants and the audience.

The Johns Hopkins Center for Health Security, World Economic Forum, and Bill & Melinda Gates Foundation jointly propose these recommendations.

Purpose

In recent years, the world has seen a growing number of epidemic events, amounting to approximately 200 events annually. These events are increasing, and they are disruptive to health, economies, and society. Managing these events already strains global capacity, even absent a pandemic threat. Experts agree that it is only a matter of time before one of these epidemics becomes global—a pandemic with potentially catastrophic consequences. A severe pandemic, which becomes "Event 201," would require reliable cooperation among several industries, national governments, and key international institutions.

Recent economic studies show that pandemics will be the cause of an average annual economic loss of 0.7% of global GDP—or $570 billion . The players' responses to the scenario illuminated the need for cooperation among industry, national governments, key international institutions, and civil society, to avoid the catastrophic consequences that could arise from a large-scale pandemic.

Similar to the Center's 3 previous exercises—Clade X, Dark Winter, and Atlantic Storm—Event 201 aimed to educate senior leaders at the highest level of US and international governments and leaders in global industries.

It is also a tool to inform members of the policy and preparedness communities and the general public. This is distinct from many other forms of simulation exercises that test protocols or technical policies of a specific organization. Exercises similar to Event 201 are a particularly effective way to help policymakers gain a fuller understanding of the urgent challenges they could face in a dynamic, real-world crisis.

Scenario

Details about the scenario are available here.

Recommendations

The next severe pandemic will not only cause great illness and loss of life but could also trigger major cascading economic and societal consequences that could contribute greatly to global impact and suffering. The Event 201 pandemic exercise, conducted on October 18, 2019, vividly demonstrated a number of these important gaps in pandemic preparedness as well as some of the elements of the solutions between the public and private sectors that will be needed to fill them. The Johns Hopkins Center for Health Security, World Economic Forum, and Bill & Melinda Gates Foundation jointly propose these recommendations.

When/where

Friday, October 18, 2019
8:45 a.m. – 12:30 p.m.
The Pierre hotel
New York, NY

Audience

An invitation-only audience of nearly 130 people attended the exercises, and a livestream of the event was available to everyone. Video coverage is available here.

Exercise team

Eric Toner, MD, is the exercise team lead from the Johns Hopkins Center for Health Security. Crystal Watson, DrPH, MPH and Tara Kirk Sell, PhD, MA are co-leads from the Johns Hopkins Center for Health Security. Ryan Morhard, JD, is the exercise lead from the World Economic Forum, and Jeffrey French is the exercise lead for the Bill and Melinda Gates Foundation.

Exercise team members are Tom Inglesby, MD; Anita Cicero, JD; Randy Larsen, USAF (retired); Caitlin Rivers, PhD, MPH; Diane Meyer, RN, MPH; Matthew Shearer, MPH; Matthew Watson; Richard Bruns, PhD; Jackie Fox; Andrea Lapp; Margaret Miller; Carol Miller; and Julia Cizek.

Event 201 was supported by funding from the Open Philanthropy Project.

Players

The following prominent individuals from global business, government, and public health were exercise players tasked with leading the policy response to a fictional outbreak scenario in the Event 201 pandemic tabletop exercise:

- Latoya D. Abbott +
- Sofia Borges +
- Brad Connett +
- Chris Elias +
- Timothy Grant Evans +
- George Fu Gao +
- Avril Haines +
- Jane Halton +
- Matthew J. Harrington +
- Martin Knuchel +
- Eduardo Martinez +
- Stephen C. Redd +
- Hasti Taghi +
- Lavan Thiru +
- Adrian Thomas +

Recommendations

Public-private cooperation for pandemic preparedness and response

Download the recommendations (PDF)

A call to action

The next severe pandemic will not only cause great illness and loss of life but could also trigger major cascading economic and societal consequences that could contribute greatly to global impact and suffering. Efforts to prevent such consequences or respond to them as they unfold will require unprecedented levels of collaboration between governments, international organizations, and the private sector. There have been important efforts to engage the private sector in epidemic and outbreak preparedness at the national or regional level.[1,2] However, there are major unmet global vulnerabilities and international system challenges posed by pandemics that will require new robust forms of public-private cooperation to address.

The Event 201 pandemic exercise, conducted on October 18, 2019, vividly demonstrated a number of these important gaps in pandemic preparedness as well as some of the elements of the solutions between the public and private sectors that will be needed to fill them. The Johns Hopkins Center for Health Security, World Economic Forum, and Bill & Melinda Gates Foundation jointly propose the following:

1. **Governments, international organizations, and businesses should plan now for how essential corporate capabilities will be utilized during a large-scale pandemic.** During a severe pandemic, public sector efforts to control the outbreak are likely to become overwhelmed. But industry assets, if swiftly and appropriately deployed, could help to save lives and reduce economic losses. For instance, companies with operations focused on logistics, social media, or distribution systems will be needed to enable governments' emergency response, risk communications, and medical countermeasure distribution efforts during a pandemic. This includes working together to ensure that strategic commodities are available and accessible for public health response. Contingency planning for a potential operational partnership between government and business will be complex, with many legal and organizational details to be addressed. Governments should work now to identify the most critical areas of need and reach out to industry players with the goal of finalizing agreements in advance of the next large pandemic. The Global Preparedness Monitoring Board would be well positioned to help monitor and contribute to the efforts that governments, international organizations and businesses should take for pandemic preparedness and response.

2. **Industry, national governments, and international organizations should work together to enhance internationally held stockpiles of medical countermeasures (MCMs) to enable rapid and equitable distribution during a severe pandemic.** The World Health Organization (WHO) currently has an influenza vaccine virtual stockpile, with contracts in place with pharmaceutical companies that have agreed to supply vaccines should WHO request them. As one possible approach, this virtual stockpile model could be expanded to augment WHO's ability to distribute vaccines and therapeutics to countries in the greatest need during a severe pandemic. This should also include any available experimental vaccine stockpiles for any WHO R&D Blueprint pathogens to deploy in a clinical trial during outbreaks in collaboration with CEPI, GAVI, and WHO. Other approaches could involve regional stockpiles or bi- or multinational agreements. During a catastrophic outbreak, countries may be reluctant to part with scarce medical resources. A robust international stockpile could therefore help to ensure that low and middle resource settings receive needed supplies regardless of whether they produce such supplies domestically. Countries with national supplies or domestic manufacturing capabilities should commit to donating some supply/product to this virtual stockpile. Countries should support this effort through the provision of additional funding.

3. **Countries, international organizations, and global transportation companies should work together to maintain travel and trade during severe pandemics. Travel and trade are essential to the global economy as well as to national and even local economies, and they should be maintained even in the face of a pandemic.** Improved decision-making, coordination, and communications between the public and private sectors, relating to risk, travel advisories, import/export restrictions, and border measures will be needed. The fear and uncertainty experienced during past outbreaks, even those limited to a national or regional level, have sometimes led to unjustified border measures, the closure of customer-facing businesses, import bans, and the cancellation of airline flights and international shipping. A particularly fast-moving and lethal pandemic could therefore result in political decisions to slow or stop movement of people and goods, potentially harming economies already vulnerable in the face of an outbreak. Ministries of Health and other government agencies should work together now with international airlines and global shipping companies to develop realistic response scenarios and start a contingency planning process with the goal of mitigating economic damage by maintaining key travel and trade routes during a large-scale pandemic. Supporting continued trade and travel in such an extreme circumstance may require the provision of enhanced disease control measures and personal protective equipment for transportation workers, government subsidies to support critical trade routes, and potentially liability protection in certain cases. International organizations including WHO, the International Air Transport Association, and the International Civil Aviation Organization should be partners in these preparedness and response efforts.

4. **Governments should provide more resources and support for the development and surge manufacturing of vaccines, therapeutics, and diagnostics that will be needed during a severe pandemic.** In the event of a severe pandemic, countries may need population-level supplies of safe and effective medical countermeasures, including vaccines, therapeutics, and diagnostics. Therefore, the ability to rapidly develop, manufacture, distribute, and dispense large quantities of MCMs will be needed to contain and control a global outbreak. Countries with enough resources should greatly increase this capability. In coordination with WHO, CEPI, GAVI, and other relevant multilateral and domestic mechanisms, investments should be made in new technologies and industrial approaches, that will allow concomitant distributed manufacturing. This will require addressing legal and regulatory barriers among other issues.

5. **Global business should recognize the economic burden of pandemics and fight for stronger preparedness.** In addition to investing more in preparing their own companies and industries, business leaders and their shareholders should actively engage with governments and advocate for increased resources for pandemic preparedness. Globally, there has been a lack of attention and investment in preparing for high-impact pandemics, and business is largely not involved in existing efforts. To a significant extent this is due to a lack of awareness of the business risks posed by a pandemic. Tools should be built that help large private sector companies visualize business risks posed by infectious disease and pathways to mitigate risk through public-private cooperation to strengthen preparedness. A severe pandemic would greatly interfere with workforce health, business operations, and the movement of goods and services.[3] A catastrophic-level outbreak can also have profound and long-lasting effects on entire industries, the economy, and societies in which business operates. While governments and public health authorities serve as the first line of defense against fast-moving outbreaks, their efforts are chronically under-funded and lack sustained support. Global business leaders should play a far more dynamic role as advocates with a stake in stronger pandemic preparedness.

6. **International organizations should prioritize reducing economic impacts of epidemics and pandemics.** Much of the economic harm resulting from a pandemic is likely to be due to counterproductive behavior of individuals, companies, and countries. For example, actions that lead to disruption of travel and trade or that change consumer behavior can greatly damage economies. In addition to other response activities, an increase in and reassessment of pandemic financial support will certainly be needed in a severe pandemic as many sectors of society may need financial support during or after a severe pandemic, including healthcare institutions, essential businesses, and national governments Furthermore, the ways in which these existing funds can now be used are limited. The International Health Regulations prioritize both minimizing public health risks and avoiding unnecessary interference with international traffic and trade. But there will also be a need to identify critical nodes of the banking system and global and national economies that are too essential to fail – there are some that are likely to need emergency international financial support as well. The World Bank, the International Monetary Fund, regional development banks, national governments, foundations, and others should explore ways to increase the amount and availability of funds in a pandemic and ensure that they can be flexibly used where needed.

7. **Governments and the private sector should assign a greater priority to developing methods to combat mis- and disinformation prior to the next pandemic response.** Governments will need to partner with traditional and social media companies to research and develop nimble approaches to countering misinformation. This will require developing the ability to flood media with fast, accurate, and consistent information. Public health authorities should work with private employers and trusted community leaders such as faith leaders, to promulgate factual information to employees and citizens. Trusted, influential private-sector employers should create the capacity to readily and reliably augment public messaging, manage rumors and misinformation, and amplify credible information to support emergency public communications. National public health agencies should work in close collaboration with WHO to create the capability to rapidly develop and release consistent health messages. For their part, media companies should commit to ensuring that authoritative messages are prioritized and that false messages are suppressed including though the use of technology.

Accomplishing the above goals will require collaboration among governments, international organizations and global business. If these recommendations are robustly pursued, major progress can be made to diminish the potential impact and consequences of pandemics. We call on leaders in global business, international organizations, and national governments to launch an ambitious effort to work together to build a world better prepared for a severe pandemic.

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[1] Global Health Security: Epidemics Readiness Accelerator. World Economic Forum. https://www.weforum.org/projects/managing-the-risk-and-impact-of-future-epidemics. Accessed 11/19/19

[2] Private Sector Roundtable. Global health Security Agenda. https://ghsagenda.org/home/joining-the-ghsa/psrt/. Accessed 11/19/19

[3] Peter Sands. Outbreak readiness and business impact: protecting lives and livelihoods across the global economy. World Economic Forum 2019. https://www.weforum.org/whitepapers/outbreak-readiness-and-business-impact-protecting-lives-and-livelihoods-across-the-global-economy . Accessed 12/5/19

Resources

Fact Sheets

The Center's scholars researched these topics to inform the scenario.

CAPS: The Pathogen and Clinical Syndrome (PDF)
Communication in a pandemic (PDF)
Event 201 Model (PDF)
Finance in a pandemic (PDF)
Medical countermeasures (PDF)

The Event 201 scenario

Event 201 simulates an outbreak of a novel zoonotic coronavirus transmitted from bats to pigs to people that eventually becomes efficiently transmissible from person to person, leading to a severe pandemic. The pathogen and the disease it causes are modeled largely on SARS, but it is more transmissible in the community setting by people with mild symptoms.

The disease starts in pig farms in Brazil, quietly and slowly at first, but then it starts to spread more rapidly in healthcare settings. When it starts to spread efficiently from person to person in the low-income, densely packed neighborhoods of some of the megacities in South America, the epidemic explodes. It is first exported by air travel to Portugal, the United States, and China and then to many other countries. Although at first some countries are able to control it, it continues to spread and be reintroduced, and eventually no country can maintain control.

There is no possibility of a vaccine being available in the first year. There is a fictional antiviral drug that can help the sick but not significantly limit spread of the disease.

Since the whole human population is susceptible, during the initial months of the pandemic, the cumulative number of cases increases exponentially, doubling every week. And as the cases and deaths accumulate, the economic and societal consequences become increasingly severe.

The scenario ends at the 18-month point, with 65 million deaths. The pandemic is beginning to slow due to the decreasing number of susceptible people. The pandemic will continue at some rate until there is an effective vaccine or until 80-90 % of the global population has been exposed. From that point on, it is likely to be an endemic childhood disease.

Videos

Highlights Reel

Selected moments from the October 18th Event 201 Exercise (Length: ~12 minutes)

Event 201 Pandemic Exercise: Highlights Reel
COVID-19 vaccine • A COVID-19 vaccine is a vaccine intended to provide acquired...
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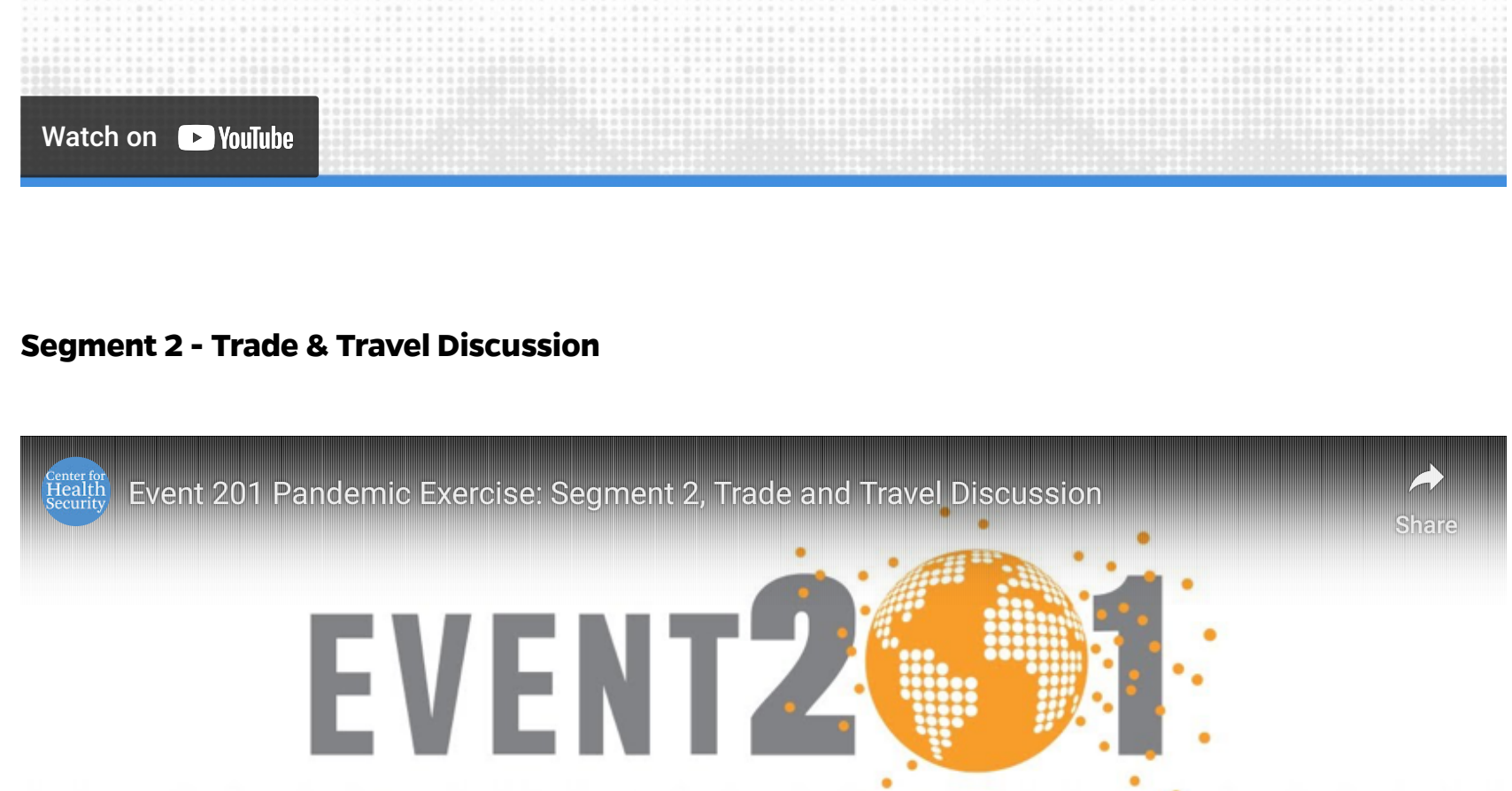
Videos of Event 201

These five segments include discussions among high-level leaders of global businesses, governments, policy and public health. (Length ~3 hours)

Segment 1 - Intro and Medical Countermeasures (MCM) Discussion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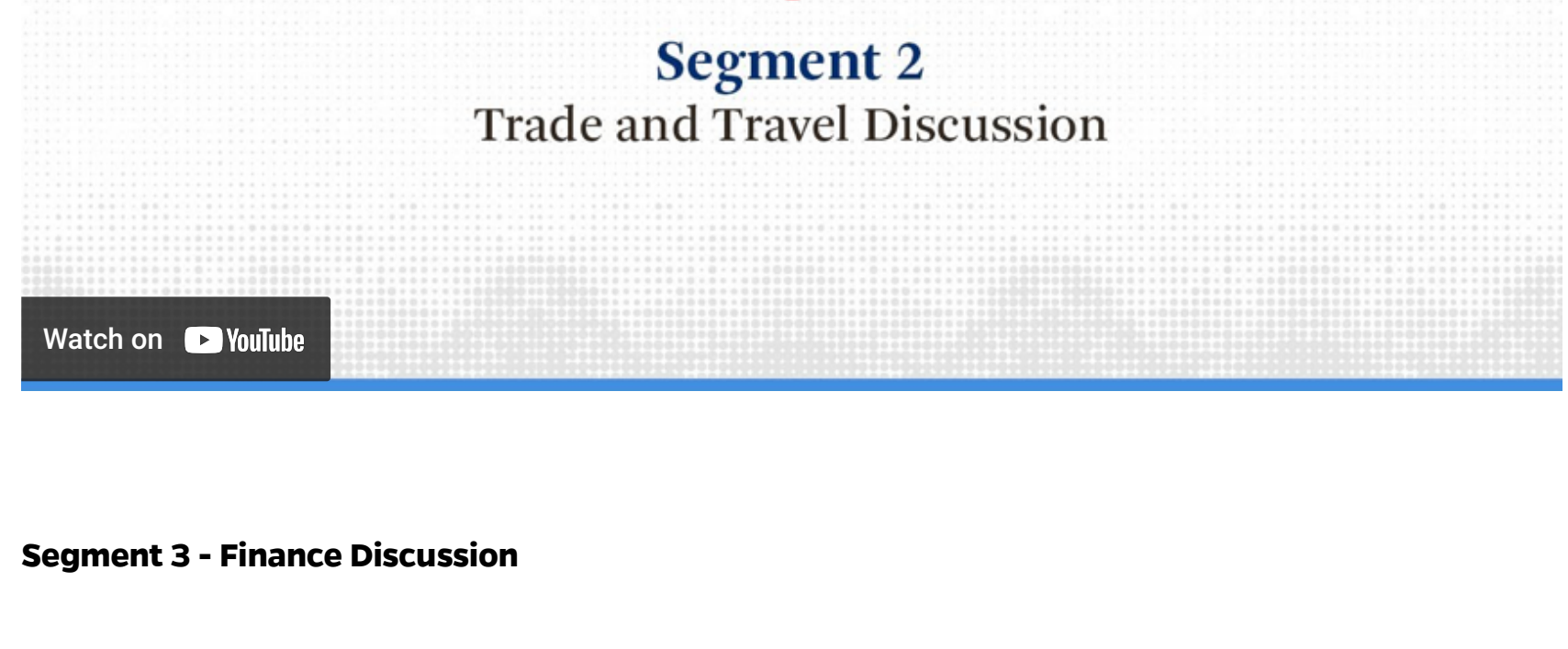
Segment 2 - Trade & Travel Discussion


Event 201 Pandemic Exercise: Segment 2, Trade and Travel Discussion
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Segment 3 - Finance Discussion

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Segment 4 - Communications Discussion and Epilogue Video

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Segment 5 - Hotwash and Conclusion

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Segment 5
Hotwash and Conclusion

Watch on YouTube

Photos

View photos from the Event 201 pandemic tabletop exercise held on October 18, 2019, in New York, NY.

Media

Event 201 Media +

Contact

Exercise inquiries

Subject matter questions about Event 201 should be directed via email to Eric Toner, MD, exercise team lead and senior scholar at the Center.

Media inquiries

Members of the media who have questions about Event 201 should email centerhealthsecurity@jhu.edu.

For all inquiries, please email centerhealthsecurity@jhu.edu.