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The State of the Aviation Industry:
Examining the Impact of the COVID-19 Pandemic

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Good morning, Chairman Wicker and Ranking Member Cantwell, my Senator, and distinguished Members of the Committee. Thank you for the opportunity to testify during this unusual time and via this novel medium about health, safety and travel during the ongoing COVID-19 pandemic. My name is Hilary Godwin and I am the dean of the University of Washington's School of Public Health and a professor at in the Department of Environmental and Occupational Health Sciences. I am trained as a chemist, with over 20 years of experience in environmental chemistry and environmental health, and specialize in how environmental factors impact the health of individuals and populations.

As we enter the next phase of the pandemic, resumption of regular commercial flights will be pivotal to economic recovery. However, this will pose significant public health challenges. As the volume of passengers and frequency of air travel begins to increase, the aviation industry and public health officials must work together to prioritize:

1. Keeping airports safe;
2. Keeping airplanes safe; and
3. Keeping the public safe.

Why this virus is different

To understand the challenges that the aviation industry will face as regular commercial flights resume, it is helpful to provide context about why this virus is different from other respiratory pathogens (such as seasonal influenza or the common cold). These include:

- The majority of Americans have not yet been infected with COVID-19 and hence are vulnerable to infection.[1]
- We do not know whether those individuals who have already been infected with COVID-19 but have recovered are immune to future infection.[2]
- We do not have a vaccine or validated treatments for COVID-19, and it likely will take more than a year for these to become widely available.[3]
- Not everyone who is infected with COVID-19 and who is capable of transmitting it to others shows symptoms.[4]

As a result of these factors and limited testing and contract-tracing capacity in early phases of the pandemic, the United States has had to rely upon non-pharmaceutical interventions such as community-level social distancing. While we race to expand our testing and contact-tracing capacities, these other factors will continue to complicate our response and re-opening.

Other factors that will complicate our ability to recover from COVID-19 include:

- Different countries, states and communities have experienced the pandemic at different

[1] https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html
[2] https://www.scientificamerican.com/article/what-immunity-to-covid-19-really-means/
[3] https://www.gatesnotes.com/Health/What-you-need-to-know-about-the-COVID-19-vaccine?WT.mc_id=20200430100000_COVID-19-vaccine_BG-EM_&WT.tsrc=BGEM
[4] Arons MM, Hatfield KM, Reddy SC, et al. Presymptomatic SARS-CoV-2 infections and transmission in a skilled nursing facility. N Engl J Med. DOI: 10.1056/NEJMoa2008457.

times and with different severities.

- We expect there to continue to be regional differences in COVID-19 prevalence, which means that travel between these communities creates opportunities for re-seeding the pandemic in communities that have low levels of transmission, as occurred during the 1918 flu pandemic.[5]
- Within the US, different states have different capacities and are responding to the pandemic in different ways.

Keeping Airports Safe

Our first priority as our nation transitions from critical travel only and regular commercial flights resume will be to keep airports safe both for employees and for travelers. Maintaining safety will be challenging because of the inherent nature of airports and travel. Typically, millions of individuals flow through airports, including travelers coming from and traveling to different locations around the globe. The probability that healthy individuals will interact with one or more individuals who are infected but may not know increases exponentially as the number of people passing through the airport increases. Thus, it is critical to reduce the number of close contacts that each person has, to require individuals to wear masks and/or gloves, and to lower the chances of virus transfer via surfaces. Key strategies include:

- Developing and deploying effective communications for employees and travelers that reinforce the importance of good hand hygiene practices and adherence to other measures designed to lower the risks of transmission while in the airport;

[5] Saunders-Hastings PR, Krewski D. Reviewing the History of Pandemic Influenza: Understanding Patterns of Emergence and Transmission. Pathogens. 2016 Dec 6;5(4):66. doi: 10.3390/pathogens5040066.

- Maintaining social distancing in all airport areas, including curbside, check-in, security screening, intra-airport shuttles and light rail systems, concessions, lounges, restrooms, boarding queues, baggage claim areas, rental car shuttles and parking lots;
- Limiting access to the airport to travelers and employees only;
- Screening individuals for symptoms (e.g., elevated temperature) before admitting them to the airport environment;
- Minimizing physical contact between employees and passengers (e.g., during screening processes), particularly where higher risk passengers such as the elderly require employee assistance;
- Requiring employees and travelers to wear masks in the terminal;
- Requiring employees to wear gloves (and to change them regularly);
- Frequently disinfecting high-touch surfaces (including those in restrooms and concession stands);
- Making hand sanitizer readily available throughout airports and allowing passengers to bring their own hand sanitizer through security.

Additional strategies that could be considered include:

- Requiring employees and/or travelers to attest to being asymptomatic prior to travel (e.g., prior to reporting to work each day for employees and during the check-in process and prior to boarding for passengers).
- Using point of care tests for current COVID-19 infection at entry points to airports when these tests become widely available.

Keeping Airplanes Safe

Second, as the number of individuals who are flying increases, it will be critical to keep airplanes safe for both employees and travelers. This will be inherently challenging because airplanes are enclosed spaces where potentially large numbers of individuals are in close contact with each other for extended periods of time, which are the conditions under which human-to-human transfer is most likely to occur. Key strategies include:

- Developing and deploying effective communications for employees and travelers that reinforce the importance of good hand hygiene practices and adherence to other measures designed to lower the risks of transmission while on airplanes;
- Requiring crew and passengers to wear masks or cloth face coverings;
- Regularly disinfecting high-touch surfaces (including those in the lavatories) during flights;
- Requiring HEPA filtration systems be used on all planes/ during all flights;
- Thoroughly disinfecting planes between flights;
- Creating social distancing during the flight (e.g., through selective assignment of seats).

Additional strategies that could be considered include:

- Limiting food and beverage services and consumption on flights, particularly short ones. Food and beverage service requires attendants to interact with large numbers of passengers in succession and also requires passengers to remove masks (to consume food and beverages).

Keeping the Public Safe

A final, but equally important, priority is to keep the public safe. Air travel inherently involves transporting individuals from one region to another and hence increases the chance of re-introducing the virus in areas where it has been eliminated or transmission has been substantially reduced. Key strategies that can help to reduce the risk of re-seeding the pandemic are:

- Requiring that all flight manifests be maintained, including current contact information for all passengers on both domestic and international flights and ideally where they have traveled in the past two weeks. Federal, state and local health departments, the Department of Homeland Security, and the aviation industry must work together to develop a system that allows state, territorial and local health departments to access this information quickly in the event that a recent traveler to their jurisdiction is subsequently found to be infected with COVID-19, so that they can contact individuals who came into close contact with the infected individuals while traveling.
- Developing national regulations or guidance for US airports and flights that originate from or terminate in the United States. While most public health measures are left to the discretion of states, it would be extremely difficult to communicate and enforce a patchwork set of regulations and guidance for travelers going from one state to another or entering the US and passing through different states.

Final Notes

To summarize, careful consideration needs to be given when making decisions that impact density of individuals in airports and on airplanes. Normally, economic considerations drive increasing the density of people in both the airport and on planes. COVID-19 changes this

equation: public health considerations must play a far greater role than before this pandemic. Developing and implementing regulations and/or guidance that promote safety in the aviation industry can also help business by making individuals feel more comfortable returning to air travel and smooth the transition back to more regular travel levels. While each of the strategies discussed here comes with inherent limitations and poses its own logistical challenges, combining them together creates a "net" that will help to reduce overall risk to the millions of individuals who work in, travel using, and benefit from the aviation industry each day.

Notably, new information about the pandemic, as well as new tools to control its spread and manage its impacts, are available almost daily. As such, public health officials need to be equal partners in all phases of planning for air travel resumption, and the industry must position itself to rapidly respond to new guidance and integrate evidence-informed control practices.

Mr. Chairman, Ranking Member Cantwell and distinguished Committee members, I recognize that air travel is a critical part of our nation's economy. But, as we resume air travel, we must prioritize keeping airports, airplanes, and the public safe. As I've laid out, we can improve safety by implementing a variety of measures to limit virus transmission throughout the travel continuum. The aviation industry and lawmakers must also work closely with federal, state, territorial and local health agencies to rapidly integrate new information, ensure that communities have the plans, tools and resources to identify potentially exposed individuals during and after air travel, as well as ensure sufficient healthcare capacity in high volume destinations. Public health professionals must be involved in these conversations and throughout the planning process. I thank you again for this opportunity and l welcome your questions.