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March 8, 2019

The Honorable Raul Grijalva
Chairman
Natural Resources Committee
United States House of Representatives
1511 Longworth House Office Building
Washington, DC 20515

The Honorable Rob Bishop
Ranking Member
Natural Resources Committee
United States House of Representatives
123 Cannon House Office Building
Washington, DC 20515

RE: Climate Change: Impacts and the Need to Act

Dear Chairman Grijalva and Ranking Member Bishop,

The Infectious Diseases Society of America (IDSAs) would like to thank you for holding this important hearing on our world's climate. IDSAs represents more than 11,000 physicians and scientists dedicated to promoting public health through excellence in research, education, prevention, and patient care. We urge the Committee to include infectious disease complications relating to climate change in future efforts, including related hearings and legislative proposals.

IDSAs recognizes climate change and its impacts as a public health emergency in the United States and around the world. Many infectious diseases are likely to be affected by the changes in weather and geography that climate change brings. Current epidemiologic patterns may be altered. These changes could shift how infectious diseases (ID) physicians, researchers, and the public health system evaluate and prepare for many infectious diseases including waterborne, zoonotic, vector-borne, and infectious diseases related to population displacement. Below IDSAs is pleased to offer some more specific examples of how climate change will impact infectious diseases, as well as some recommendations for your consideration. We would be happy to serve as a resource to the subcommittee on this important issue.

Waterborne Infectious Diseases

As sea levels rise and the frequency of severe and extreme weather events increases, the incidence of waterborne diseases is likely to increase. We already recognize that flooding and extreme weather like hurricanes put stress on sewer and water sanitation systems which can increase the likelihood of acquiring waterborne infections such as leptospirosis and cholera through direct contact or consumption of an unclean water supply. For example, after Hurricane Maria crippled Puerto Rico in 2017, the sewer systems were overwhelmed with regular overflows and flooding that occurred for several weeks after the initial storms. Dozens of cases of leptospirosis with at least three confirmed deaths occurred as a consequence. Similarly, coastal warming in the Pacific Northwest has increased the detection and range of *Vibrio* spp. water contamination.

Zoonotic Infectious Diseases

Climate change affects the habitats and behaviors of many kinds of wildlife. As animals adapt to changing environments, they may interact with new species and ecosystems. Disruption of ecosystems can be associated with the emergence or re-emergence of zoonotic diseases through exposure to new or rare animal disease vectors. This can be seen in the increasing diversity of influenza strains as well with neglected tropical diseases where host animals and vectors are forced into closer contact with both each other and humans. Examples of zoonotic infections that are affected by climate include hantavirus infections, animal pox viruses and leptospirosis. Many more also are linked with vector-borne diseases noted in the next paragraph.

Vector-borne Diseases

As the planet warms, vectors such as ticks and mosquitos have the potential to spread and inhabit expanded geographic areas. This could place new populations at risk of vector-borne disease, and according to the Centers for Disease Control and Prevention, cases of vector-borne disease in the United States tripled from 2004-2016. New populations are particularly at risk due to lack of immunity, preparedness and public health infrastructure to address diseases not previously encountered. Lyme and other tickborne disease incidences have increased significantly in the past two decades and have become more common in areas not previously thought to be endemic for these diseases. This troubling trend coincides with increases in the geographic range, abundance, and seasonal duration of various tick species in North America and Europe. This habitat expansion has followed steadily increasing ambient temperatures, including into far northern and high-altitude ecosystems.

Population Displacement

As climate change leads to increases in more frequent and severe storms in some areas, it also may decrease the availability of arable and pastoral lands, food supply and quality, and potable water elsewhere. These changes, and the ensuing conflicts over remaining resources are likely to cause mass migrations and drive populations from rural into sprawling urban areas. Any time large populations are displaced and forced to migrate, either temporarily or permanently, the incidence of waterborne and respiratory infections increases dramatically.

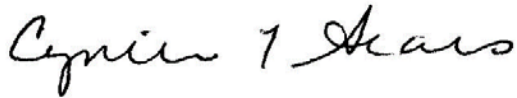
Recommended Actions:

- Advance policies to decrease carbon emissions, critical to slowing global warming.
- Provide education and resources for communities to promote adaptation and resilience for the anticipated impacts of climate change.
- Increase investment in public health infrastructure and workforce to improve monitoring for and response to adverse health impacts of climate change, such as enhanced vector surveillance and human disease tracking for vector-borne diseases.
- Authorize additional research on climate change including:
 - Research to develop prevention strategies for waterborne, zoonotic, and vectorborne diseases.
 - Long-term studies to assess the relationships between weather variables and infectious diseases determinants.
- Multidisciplinary research to develop predictive models of the impact of climate on the epidemiology of infectious diseases, with a focus on characteristics that can inform public health interventions.
- Include the infectious disease risks associated with natural disasters, population displacement, and climate change in comprehensive disaster response activities.

- Incentivize individual lifestyle behaviors to reduce our environmental footprint.

Again, we would like to thank the Committee for beginning to examine some of the myriads of issues related to the impacts of climate change. IDSA is happy to be a resource as the Committee considers public health consequences of climate change, and we ask that the known as well as likely infectious diseases complications be included in your ongoing discussions. If you have any questions, please contact Colin McGoodwin, IDSA's Program Officer for Public Health Policy (cmcgoodwin@idsociety.org).

Sincerely,

A handwritten signature in black ink that reads "Cynthia Sears". The signature is written in a cursive, flowing style.

Cynthia Sears, MD, FIDSA
President, IDSA