Caring for America: Legislation to Support Patients, Caregivers, and Providers
Subcommittee on Health of the House Committee on Energy and Commerce
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On behalf of the Infectious Diseases Society of America

Chair Eshoo, Ranking Member Guthrie and members of the Subcommittee, thank you for the opportunity to testify today. I am Dr. Jeanne Marrazzo and I serve as the Director of the Division of Infectious Diseases at the University of Alabama at Birmingham (UAB) and as the Treasurer of the Infectious Diseases Society of America (IDSA). I have also served on the Governor of Alabama's COVID-19 task force. **On behalf of IDSA, I am pleased to offer support for the Bolstering Infectious Outbreaks (BIO) Preparedness Workforce Act and to speak to you about why this bill is needed and how it can help our bio-preparedness and infectious diseases (ID) workforce, support vulnerable communities and strengthen our preparedness for pandemics and other public health threats. I am also pleased to offer support for the Public Health Workforce Loan Repayment Act and the Dr. Lorna Breen Health Care Provider Protection Act.**

Addressing bio-preparedness and ID workforce shortages in Alabama and communities across the country is very important to me because I have seen firsthand the devastating effects that the COVID-19 pandemic has had on the communities in my state—with disproportionate effects on people most vulnerable to this disease —namely, people of color, people in rural areas, people living in poverty and those with common medical comorbidities like diabetes, heart disease and kidney disease. We need a stronger and more diverse workforce, equitably distributed to reach currently underserved areas, in order to meet the needs of all our patients and communities.

Challenges Facing the Bio-preparedness and Infectious Diseases Workforce

The COVID-19 pandemic and recent natural disasters have exposed weaknesses in our nation's preparedness for public health emergencies related to infectious diseases outbreaks, including insufficient ID workforce capacity at health care facilities. ID physicians and health care professionals lead health care facility preparedness and response teams and collaborate closely with public health officials. In addition, ID health care professionals are needed to care for patients with serious infectious diseases and are critical to help prevent the spread of infectious diseases.

Many communities across the U.S. lack infectious diseases expertise. A June 2020 study in the *Annals of Internal Medicine* found that 208 million Americans live in areas with little or no access to an ID physician and more than 80% of U.S. counties lack any ID expertise. Needs are particularly acute in rural areas. In Alabama, there is little to no access to ID care in our state's smaller and more rural communities. We must strengthen our bio-preparedness and ID workforce and ensure they are appropriately distributed across the country. During our COVID-19 surges, including our most recent wave driven by the Delta variant, nearly everyone who required intensive care had to go to regional medical centers, which quickly became overwhelmed. At my institution—the University of Alabama at Birmingham—we accepted as many patients as we could but still had to turn down transfers from Tuscaloosa and Huntsville as we were over capacity.

UAB also serves as a critical hub for HIV and hepatitis care and treatment serving patients from over 25 counties. While telehealth is an option for some of these patients, many Alabama residents do not have reliable Internet access and for some patients in-person visits are preferred or clinically necessary. Complicating our challenges is the fact that many rural hospitals have closed in Alabama in the last decade, reducing the options for residents in rural areas, in particular, to access both preventive and urgent ID care. This creates a disproportionate burden of care for referral centers in metropolitan areas, a trend perfectly exemplified by the emergent need for these centers to care for patients with COVID-19 during the height of the pandemic. These hospitals were overwhelmed, and care for non-COVID-19 conditions was often deferred or untended altogether. Growing our bio-preparedness and ID workforce, and ensuring these experts are located in rural and other underserved areas, is critical to ensure that we have the capacity to prepare for and respond to public health emergencies and address ongoing epidemics and infectious diseases threats.

Despite the urgent need for a robust bio-preparedness and infectious diseases workforce, the pipeline for ID physicians lags behind other specialties. In 2020, only 75% of infectious diseases training programs were able to fill all their slots, while many other internal medicine subspecialties (cardiology, rheumatology, gastroenterology, hematology, oncology, pulmonology and critical care) were able to fill from 96% to 100% of their training programs. This relative shortage of ID physicians is especially acute in areas with the greatest vulnerability to diseases like COVID-19. In Alabama, the majority of counties have no ID specialist at all and rely on informal telephone consultation with regional experts at referral centers like my institution. During the pandemic, I personally received phone calls from physicians caring for people with COVID-19 in rural hospitals, with questions ranging from indications for monoclonal antibody treatments to management of antiviral therapy in pregnant women to management of antimicrobial-resistant secondary infections acquired during prolonged hospital stays related to COVID-19. Ensuring a robust network of skilled and knowledgeable bio-preparedness and ID experts would position us to handle these challenges much more effectively—better treating our patients and strengthening our community response and capacity.

Data published by Medscape in 2020 indicate that average annual salaries for ID physicians are below all other medical specialties except pediatrics, family medicine, endocrinology and public health, and even below the average salary for general internal medicine, although ID training and certification requires an additional two to three years of study and training. Given that the average medical student debt is $200,000, the ID specialty is not a financially feasible choice for many. Through IDSA's work to engage and support medical students and residents, including through mentorship, surveys and focus groups, we have found a high level of interest in ID. However, financial challenges are frequently cited as a barrier for newly trained physicians to enter and stay in this specialty. Of concern as we work to improve health equity, individuals from populations underrepresented in medicine are more likely to have educational debt and higher levels of debt upon graduation, making financial concerns a potentially greater barrier for them to enter ID. The BIO Preparedness Workforce Act will directly address the financial barriers to bio-preparedness and ID careers by providing new opportunities for loan repayment targeted specifically at these professional areas with an explicit goal of diversifying the workforce.

In addition to physicians, a team of health care professionals is important to our bio-preparedness and response efforts and these disciplines also are facing serious retention and recruitment challenges. Clinical laboratory professionals, infection preventionists, ID trained pharmacists, advanced practice nurses and physician assistants are all critical to helping health care facilities prevent, prepare for and respond to public health emergencies.

Twenty-five percent of health care facilities are reporting a vacant infection preventionist position, with more than half of long-term care facilities seeing an infection preventionist leave within the last 24 months. These shortages are likely to grow in the future, as 40% of the infection preventionist workforce will be entering retirement age within the next 10 years.

Throughout the pandemic, shortages of clinical laboratory personnel, such as microbiologists, have limited our testing capacity for COVID-19 and many other infectious diseases. Results of a survey published in 2019 showed a total vacancy rate for clinical microbiologists of just over 10%. Results also reveal that more than 17% of microbiology department employees are expected to retire in the next 5 years.

ID trained clinical pharmacists, who partner with ID physicians to lead antimicrobial stewardship programs to direct optimal use of antimicrobial drugs—including COVID-19 therapeutics—are also in short supply. A 2018 survey of the acute care U.S. stewardship workforce found pharmacist and physician FTE to bed staffing ratios to be well below recommended levels necessary for demonstrable stewardship program effectiveness, based on work by the Veterans Health Administration and others.

These workforce shortages demonstrate why the BIO Preparedness Workforce Act is so urgently needed.

In many rural communities in Alabama, poverty and lack of access to health care puts Black and Latinx populations at greater risk for infectious diseases. ID workforce shortages are limiting our ability to prevent and treat HIV and viral hepatitis, and infections associated with opioid and other substance use. A study of the HIV workforce conducted in 14 southern states, including Alabama, found that more than 80% of those states' counties had no experienced HIV clinicians, with the disparities being greatest in rural areas. Making it possible for ID experts to live and work in these underserved communities through loan repayment would help to reduce new HIV cases and improve outcomes for those living with HIV and hepatitis C. Diversifying the ID workforce also will be important to meet the needs of all our Alabama communities.

Critical Role of the Bio-preparedness Workforce

As the COVID-19 pandemic has powerfully demonstrated, every community needs a strong bio-preparedness workforce to mount rapid, effective responses to pandemics and other infectious diseases epidemics and threats. Trained staff in health care facilities (including physicians, clinical pharmacists, physician assistants, advanced practice registered nurses, infection preventionists and laboratory professionals) are essential to develop and update response and surge capacity plans and protocols; collaborate with state and local health departments; train health care facility personnel; purchase and manage equipment (such as personal protective equipment or PPE) for bio-emergencies; execute readiness assessments; repurpose areas of a health care facility to manage patient influx; communicate with the public; perform infection prevention and control; develop and validate new diagnostic tests; and conduct antimicrobial stewardship to ensure that treatments for infectious diseases are used appropriately to yield optimal patient outcomes. Throughout the COVID-19 pandemic, as new therapeutics were authorized, their availability was often limited, and their administration was often complex. Our antimicrobial stewardship teams have been essential in determining the most effective and efficient ways to use our limited supplies of life-saving agents to provide the greatest benefits to our patients.

The bio-preparedness workforce in health care facilities was instrumental in leading clinical trials to support the extremely rapid development of COVID-19 diagnostic tests, therapeutics and vaccines. In particular, ID physicians were often responsible for enrolling patients in clinical trials and ensuring diverse representation in trials. But many patients do not live close enough to sites with the necessary workforce and are thus often not given the opportunity to enroll in a trial. Nearly all the patients we enrolled at UAB into the ACTT trials, the large studies that NIH funded to determine the optimal management of COVID-19 in hospital settings, were from the Birmingham metropolitan areas; these patients thus had the advantage of early access to investigational agents that were eventually shown to be superior to placebo in treating the disease. A larger and more diverse workforce that is more effectively distributed in rural areas is needed to expand access to clinical trials and ensure that future clinical trials reflect the populations we serve.

Experts in our health care facilities trained in bio-preparedness and ID are also among our most trusted messengers to communicate public health information to patients. When COVID-19 vaccines became available, physicians, pharmacists and nurses were routinely cited as some of the most effective public ambassadors to educate people about the vaccines, the safety and efficacy data supporting their use, the benefits of vaccination and the risks of remaining unvaccinated.

The disproportionate impacts of COVID-19 and of longstanding epidemics and ID threats like HIV, viral hepatitis, infections associated with opioid use and antimicrobial resistance highlight the need to ensure a diverse, culturally competent workforce and a workforce that is equitably distributed through all communities, including rural and other currently underserved areas.

Lack of a sufficient workforce is hampering our response to COVID-19 and other infectious diseases threats, as well as our preparedness for future public health emergencies. Workforce shortages also contribute significantly to burnout among our existing workforce. Throughout the pandemic, supporting my staff and colleagues—trying to maintain some level of optimism and resilience in the face of devastation—has been my greatest challenge. At some points during the pandemic, we had as many as four deaths per day in our intensive care unit. This level of tragedy has been particularly hard on our younger health care professionals, and I am very concerned about burnout and our ability to retain and support this workforce. Our teams providing care during the pandemic have been stretched thin, from covering the intensive care units for those critically ill from COVID to administering monoclonal antibodies to treat those in clinic to managing the serious infections that result from long stays in the hospital.

In addition to pandemics, bio-preparedness and infectious diseases professionals are critical to responses to mass casualty events and natural disasters, such as hurricanes, floods and wildfires. A 2018 article about health risks associated with severe flooding found that infections are a common reason individuals seek health care after a flood. Cellulitis and deeper skin infections frequently complicate common wounds in patients injured by fast-moving water, trying to escape floodwaters, or cleaning up after floods. Acute respiratory infection is often the most common infectious disease after flooding. Disruption of housing and overcrowding in shelters following hurricanes, floods or wildfires can increase the risk of transmission of respiratory viral pathogens. Direct contact with floodwater, with immersion, near drowning, or aspiration, can lead to infections of the lower respiratory tract and may be complicated by pulmonary necrosis and abscess formation. The risk of gastroenteritis after flooding is highest in areas with poor hygiene or an inadequate supply of clean drinking water, though outbreaks of diarrheal diseases are common even in resource-rich areas, particularly if the integrity of sewage systems is compromised. Leptospirosis, a spirochetal zoonosis causing an acute febrile illness, has

increasingly been recognized as a pathogen associated with flooding and extreme weather events. Mosquito-borne diseases may occur at an increased rate after flood events. Serious burns sustained during wildfires can also easily become infected.

Value of the Infectious Diseases Workforce

Infectious diseases physicians improve health outcomes and lower health care costs, particularly for the most seriously ill patients. Studies have indicated that infectious diseases physician care of patients with serious infections is associated with improved patient outcomes. Early intervention by an ID physician for hospitalized patients with serious infections is associated with significantly lower mortality and readmission, shorter hospital and ICU length of stay, and lower Medicare costs. Our ID workforce in Alabama has been critical to providing not only specialized care, but also advice on allocation of scarce treatment resources.

ID physicians are essential components of teams caring for patients receiving transplants or cancer chemotherapy, as such patients are at significant risk for infectious diseases that could dramatically complicate their care and threaten their lives.

Antibiotic stewardship programs implemented by multidisciplinary teams including ID physicians and ID trained pharmacists have been found to improve cure rates, reduce adverse events, lower health care costs and decrease inappropriate antibiotic use that drives antibiotic resistance. Antibiotic resistance further compromises our preparedness by diminishing our arsenal of treatments for secondary infections that typically complicate pandemics and other mass casualty events.

The infectious diseases workforce is central to preventing, treating and eventually stopping ongoing public health epidemics and emerging threats, including HIV, viral hepatitis and bacterial and fungal infections that are on the rise due to the opioid use and other substance use epidemics. A robust HIV workforce is critical to ending the HIV epidemic in the United States within the next decade, which is an ambitious but achievable goal. In addition, expanding clinical workforce capacity for viral hepatitis was recently identified as a key element of the Department of Health and Human Services *Viral Hepatitis National Strategic Plan for the United States: A Roadmap to Elimination 2021 – 2025.*

BIO Preparedness Workforce Act, H.R. 5602

The bipartisan *BIO Preparedness Workforce Act,* H.R. 5602, introduced by Representatives Trahan (D-MA) and McKinley (R-WV) is needed to ensure an adequate supply and aid recruitment of bio-preparedness and ID health professionals. IDSA is deeply grateful to Representatives Trahan and McKinley for their outstanding leadership on this important legislation. Existing loan repayment programs, which mostly focus on primary care, do not offer opportunities specifically for service related to bio-preparedness activities or for infectious diseases care. This bill would establish a loan repayment program with two important categories of eligibility: 1) health care professionals who spend at least 50% of their time working in bio-preparedness in a health care facility; 2) health care professionals who spend at least 50% of their time providing infectious diseases care in underserved areas or federally funded facilities.

This bill is supported by a growing list of organizations, including AIDS Institute, American Association for the Study of Liver Disease, American Dental Association, American Hospital Association, American Medical Association, American Society for Microbiology, Association for Professionals in Infection

Control and Epidemiology, HIV Medicine Association, Infectious Diseases Society of America, Johns Hopkins Center for Health Security, National Rural Health Association, Society for Health Care Epidemiology of America, Society of Infectious Diseases Pharmacists, University of Wisconsin Health System, University of Wisconsin School of Medicine and Public Health, Vivent Health and the Wisconsin Medical Society

Public Health Workforce Loan Repayment Act, H.R. 3297

IDSA is also pleased to support the Public Health Workforce Loan Repayment Act, H.R. 3297, and we thank Representatives Crow (D-CO), Burgess (R-TX), Eshoo (D-CA) and Guthrie (R-KY) for their leadership on this important bill to promote the recruitment of public health professionals at local, state and tribal public health agencies. Recruitment into our public health workforce is compromised by our fragile public health infrastructure and lack of funding. Public health professionals at our state, local and tribal health departments work hand in hand with bio-preparedness and infectious diseases health care professionals at our health care facilities to ensure well-coordinated preparedness efforts and responses to pandemics and other infectious diseases threats. Our public health workforce is critical to conduct surveillance, support testing and vaccination campaigns, communicate with the public and promote prevention and wellness.

Dr. Lorna Breen Health Care Provider Protection Act, H.R. 1667

Lastly, IDSA is proud to support the Dr. Lorna Breen Health Care Provider Protection Act, H.R. 1667, introduced by Representatives Wild (D-PA) and McKinley (R-WV). Prolonged, significant additional work (both direct patient care and programmatic response activities) in an environment of health risks, uncertainty, and overwhelming loss of patient lives has contributed to severe burnout among health care professionals, leading some to consider early retirement and threatening the future of this critical workforce. Providing new resources to improve mental health and prevent burnout, support suicide prevention, promote resiliency and remove barriers to accessing mental health care are all critical strategies to support our health care workforce.

Conclusion

I thank the Subcommittee for holding today's hearing. The Infectious Diseases Society of America and I welcome the opportunity to work with you to advance these critical pieces of legislation to ensure that our nation has the workforce we need to prepare for future pandemics and respond to longstanding and emerging infectious diseases threats.