Call to Action for the Elimination of Disparities in Health Outcomes for African Americans, Latinx, Persons of Color and other Underserved Persons Infected with COVID-19 in the United States.

To the Honorable Members of the United States Congressional Black Caucus:

As African Americans and also as infectious disease practitioners, Fellows and Members of the Infectious Disease Society of America, a professional organization of over 12,000 physicians, scientists and public health experts who specialize in infectious diseases, we the undersigned are collectively expressing our deepest concern regarding the shocking disparities in mortality rates recently reported among African Americans and Latinx infected with COVID-19 throughout the United States.

As infectious disease specialists serving underserved communities and advocating on behalf of African American, Latinx and other underserved populations, we respectfully appeal to you, the Esteemed Members of the Congressional Black Caucus, to embrace and support our effort and to elevate our concern to the attention of the highest-level health care policy makers within the administration immediately. We as African Americans seek to urgently collaborate with other medical and scientific organizations across the nation to acknowledge the impact of this disparity. We respectfully request that the Esteemed Members of The Congressional Black Caucus join other recognized medical and scientific societies in the formulation of strategies and execution of initiatives aimed at reducing the egregious and longstanding inequities in our national healthcare system now clearly exposed by the COVID-19 pandemic.

In this document, we shall propose a multi-pronged plan of specific actions as an initial step towards the reduction of health disparities focused within the care of patients with infectious diseases, our area of expertise. If implemented, the proposed interventions will reduce some of the barriers to care, which contributed to many of the fatalities reported during this pandemic and hopefully, decrease the likelihood of excess mortality impacting our communities in the future.

Prior to the current COVID-19 pandemic, the systematic willful dismantling of basic pillars of the national healthcare infrastructure including the Medicaid system and the Affordable Care Act (ACA) exacerbated pre-existing disparities and exerted a particularly devastating impact in low-income communities across this nation. Many individuals with chronic health conditions became unable to access preventive care and many patients with controllable disease such as diabetes and hypertension have gone untreated. This has in part, contributed to an excess in mortality among underserved African American and Latinx. Moreover, recent budget cuts to the Centers for Disease Control and Prevention, (CDC), the National Institutes of Health (NIH), and the Food and Drug Administration (FDA) and the lack of financial support for the Task Force on prevention of pandemics and emerging infectious disease threats more likely than not, severely impeded our national response to the COVID-19 pandemic.
BACKGROUND

According to recent data released by the CDC, over 90% of patients in a cohort study of 1,482 hospitalized due to COVID-19 had underlying medical conditions including hypertension, obesity, metabolic disorders such as diabetes, chronic lung diseases (e.g. asthma) and cardiovascular disease.¹ Chicago Mayor Lori Lightfoot announced that African Americans comprise 72% of COVID-19 related fatalities in her city yet they make up less than 30% of the population². The Mayor further indicated that in the State of Illinois, 43% of those who have died of COVID-19 were African Americans, while they comprise only 15% of the state population.

In the neighboring state of Michigan, African Americans account for 40% of COVID-19 related deaths and only 14% of the state population.³ In Milwaukee, Wisconsin, African Americans comprise 26% of the city population, while they account for nearly half of the 945 reported COVID-19 cases and 81% of 27 deaths as of early April, 2020. Public health authorities reported similar findings in the state of Louisiana, where African Americans account for 70% of deaths and comprise 33% of the population.⁴

The New York Times reported that in New York City, the epicenter of the COVID-19 outbreak, death rates among Latinx and African Americans were twice that reported amongst Whites. Age adjusted death rates were 22.8/100,000 population and 19.8/100,000 population among Latinx and Black/African American NYC residents compared to 10.8/100,000 among Whites and 8.1/100,000 among Asians.⁵

In a recent, televised White House Coronavirus Briefing, Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Disease notably stated: “The impact of COVID-19 is shining a very bright light on unacceptable health disparities for African Americans.” According to Dr. Fauci, the COVID-19 pandemic “has demonstrated the real weaknesses and foibles in our society”.⁶

As Infectious Disease physicians, scientists and public health experts, it is critical to ask: Why are these disparities in health outcomes occurring?

The available data do not substantiate any evidence of a relationship between these disparities and genetic or inherent differences in susceptibility of African American or Latinx populations to COVID-19. In reality, the disparities are most likely due to a combination of factors, which have cumulatively created a tragic “perfect storm” within the African American and Latinx communities. The magnitude of the disparities in death rates among African Americans and Latinx impacted by COVID-19 can be explained by several but not all-inclusive medical and socioeconomic factors:

1. Higher rates of preventable underlying comorbidities and higher incidence of acute medical conditions
2. Socioeconomic factors, which increase the risk for exposure to COVID-19 (such as greater representation in essential service industries)
3. Limited access to basic primary medical care and COVID-19 diagnostic testing due to lack of medical insurance coverage
4. Lack of awareness and misinformation

In this document we, as a group of African American infectious disease specialists and members/fellows of the IDSA, explore each of these important areas in detail and we shall propose solutions for consideration.

CONTRIBUTORS TO HEALTH DISPARITIES AMONG AFRICAN AMERICANS AND LATINX POPULATIONS DURING THE COVID-19 PANDEMIC.

1. Underlying Comorbidities and Chronic Medical Conditions

Underlying medical conditions including hypertension, diabetes, obesity and chronic respiratory disease play a major role in the excess mortality due to COVID-19. Nearly 90% of individuals had comorbid conditions in a recently published report of hospitalized COVID-19 patients. Within this cohort, 49.7% had hypertension, 48.3% were obese, 34.6% had chronic lung disease, and 27.8% had asthma, and approximately 28% reported diabetes and/or cardiovascular disease respectively. A wealth of studies has shown that rates of all these common, medically treatable conditions are significantly more prevalent among African Americans. In addition, Latinx as a group in the U.S., are much more likely than whites to be negatively impacted by asthma (e.g. higher prevalence of asthma noted among Latinx of Puerto Rican descent) or diabetes (higher rates of undiagnosed diabetes).

Table 1 lists the racial/ethnic distribution of the four most frequent underlying medical conditions known to increase the risk for severe complications, hospitalization and death due to infection with SARS-CoV-2 (COVID-19) in the United States.

Table 1: Prevalence of Health Conditions by Race/Ethnicity – United States

<table>
<thead>
<tr>
<th>Medical Condition</th>
<th>Non-Hispanic Black</th>
<th>Hispanic</th>
<th>Non-Hispanic White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>40.3%</td>
<td>27.8%</td>
<td>27.8%</td>
</tr>
<tr>
<td>Obesity (BMI ≥30)</td>
<td>49.6%</td>
<td>44.8%</td>
<td>42.0%</td>
</tr>
<tr>
<td>Diabetes/ Undiagnosed</td>
<td>17.9%</td>
<td>15.3%</td>
<td>12.4%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>13.9</td>
<td>13.6%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Asthma</td>
<td>11.7%</td>
<td>6.5%</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

Ref: 7,8,9,10

During the 2009 outbreak of influenza H1N1, researchers here in the U.S. recognized obesity as a significant risk factor for increased disease severity and mortality among infected individuals. In addition, obese individuals infected with certain strains of influenza virus may experience prolonged viral carriage creating a higher risk for transmission of infection to others. Moving forward, it will be important to determine through additional research, if the same may be true for COVID-19 as this could have public health implications.

2. Socioeconomic Factors
In New York City, African Americans and Latinx combine to account for the majority of the “Frontline Workers” in all of the six categories listed below. These jobs include healthcare, trucking and postal services, building construction and maintenance, grocery and pharmacy, childcare, and public transit. All these occupations place these employees at higher risk for exposure to COVID-19. For example, as of 4/9/2020, among the fatalities due to COVID-19 reported in New York City, 50 were New York City Metropolitan Transit Authority (MTA) employees.

It is reasonable to assume that within New York City, the majority of front-line workers also rely on public transportation, which further increases their risk for exposure to COVID-19. Also, of note, in contrast to many executive, managerial and white-collar occupations, none of these front-line workers can perform their occupational tasks remotely. We can reasonably assume that frontline workers in other large cities who are similarly overrepresented by African Americans and Latinx are experiencing similar disparities in COVID-19 related health outcomes.

Table 2: NYC Frontline Workers by Race/Ethnicity

<table>
<thead>
<tr>
<th>Front Line Work Category</th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery/Convenience/Pharmacy</td>
<td>19%</td>
<td>39%</td>
<td>16%</td>
<td>24%</td>
</tr>
<tr>
<td>Public Transit</td>
<td>41%</td>
<td>21%</td>
<td>9%</td>
<td>27%</td>
</tr>
<tr>
<td>Trucking/Warehouse Postal services</td>
<td>33%</td>
<td>27%</td>
<td>17%</td>
<td>22%</td>
</tr>
<tr>
<td>Healthcare</td>
<td>32%</td>
<td>22%</td>
<td>16%</td>
<td>27%</td>
</tr>
<tr>
<td>Child care/Homeless Service/Food Services</td>
<td>32%</td>
<td>35%</td>
<td>10%</td>
<td>22%</td>
</tr>
<tr>
<td>Building Cleaning Services</td>
<td>15%</td>
<td>60%</td>
<td>5%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Additional factors increasing the risk for COVID-19 exposure include multi-generational or unfavorable housing patterns, which are common among low-income persons, particularly recent immigrants from Latin American, African and Asian countries. At present, we don’t fully understand the magnitude of the pandemic in correctional facilities, especially in places where African Americans and Latinx are overrepresented and disparities could even be greater. However, large outbreaks have been reported in the states of Ohio, Arkansas, and Tennessee. According to the federal Bureau of Prisons (BOP), 1534 federal inmates and 343 staff tested positive for COVID-19, and there have been 31 federal inmate deaths as of 4/29/2020.

3. Limited Access to Basic Primary Medical Care and COVID-19 Testing.

As Members of the Congressional Black Caucus, you are aware that the Medicaid public health insurance program is intended particularly for people with low income, the elderly and the disabled. This program provides health coverage for one of every five Americans and finances the hospitals. In 2010, the Affordable Care Act (ACA) expanded Medicaid access to “non-elderly” low-income adults. In 2018, the current administration proposed enactment of an $800 billion dollar cut to the Medicaid
program, initially projected to take place incrementally over the subsequent ten years.\textsuperscript{16} Projected budgetary cuts to the Medicaid program would approach $1 trillion dollars over the subsequent 10 years. In addition, proposed reductions in the Medicare program by $750 billion over 10 years would also exert a negative impact on the bottom line of hospitals and medical providers.\textsuperscript{17}

A significant proportion of low-income persons throughout the United States rely on medical care provided by community-based public clinics. These healthcare centers, located in urban, suburban and rural areas rely primarily on Medicaid revenues. Limiting financial support to these clinics exerts a negative impact on the availability of preventive health services that can be offered. The Kaiser Family Foundation estimates that the projected 25\% in overall Medicaid cuts would result in loss of health insurance coverage for 14 million Americans.\textsuperscript{16} However, uninsured and under insured persons are less likely to seek medical care. Too often, they present to healthcare centers in advanced stage of illnesses, an unfortunate observation confirmed during the COVID-19 pandemic. These factors may also explain the severity of the infections, the more rapid progression of hypoxic respiratory failure, and the excessive rates of mortality in African American and Latinx who are overrepresented among the lower income and uninsured in the United States.

Existing evidence indicates that access to primary care is associated with longer and healthier lives. One recently published study estimated that the United States could avert up to 127,617 deaths/year through an increase in the number of primary care physicians.\textsuperscript{17}

Given the limited number of diagnostic testing resources nationally during the early phase of the pandemic, most COVID-19 community testing centers offered priority to symptomatic people referred by their physicians. The majority of these testing sites started in affluent communities and the lack of access to basic medical care in lower income communities has resulted in underserved populations being at even greater risk of unrecognized infection and community transmission. This also undoubtedly contributed to the delay in seeking medical care, and increased the likelihood of disease severity and fatal outcomes.

4. Lack of Awareness: “Misinformation & Disinformation”

The current COVID-19 pandemic reminds us all about the importance of clear and consistent communication with the public using all types of media outlets. At the onset of this pandemic, as witnessed during the early years of the HIV epidemic, many in the African American community and other underserved groups received incorrect information from unreliable sources. This misinformation endangered the lives of numerous individuals. Today, with the various forms of electronic media capabilities, misinformation and propaganda spread much more rapidly and challenge the status of credible sources of information. This has recently been compounded by unclear messages from leaders of the Federal and State Governments. We, as African
American Infectious Disease specialists urge The Congressional Black Caucus to collaborate wherever possible with the IDSA and other medical and scientific organizations to develop strategies to combat the dissemination of misinformation to our vulnerable populations across this nation. Moreover, we encourage our organization to explore opportunities for collaboration with all of our national, regional and local policy makers and Health Departments to join in efforts to combat misinformation related to COVID-19.

5. Bridging Entry of Eligible Underrepresented Populations into Clinical Trials and Compassionate Drug Use

The underrepresentation of racial and ethnic minorities in clinical trials across multiple disease areas has been well documented. Limited participation of race/ethnically diverse populations in clinical trials makes it difficult to extrapolate the results following approval of new, life-saving therapies. The dearth of diverse community participation in clinical trials brings further uncertainty of the risks and benefits of many approved treatments among minority populations including African Americans and Latinx.

Numerous clinical trials designed to evaluate preventive and therapeutic interventions are currently underway enrolling patients with COVID-19 infection or at risk for infection throughout the world. As of April 11, 2020, an expert advisory panel of the Infectious Diseases Society of America (IDSA) has encouraged clinical research involving the following groups of clinical trials for persons infected with COVID-19 and under treatment by physicians:

- **Remdesivir**
  This antiviral agent showed 68% clinical improvement in compassionate use and very promising results in an ongoing large, international, randomized, placebo-controlled trial. Dr. Anthony Fauci broke the news at the White House on April 29, 2020. He stated: “The data shows that remdesivir has a clear-cut, significant, positive effect in diminishing the time to recovery”.

- **Lopinavir/ritonavir**
  An antiviral agent used to treat persons with HIV.

- **Hydroxychloroquine or Hydroxychloroquine/azithromycin**
  Hydroxychloroquine and (hydroxychloroquine and azithromycin) were demonstrated in a small non-comparative study to decrease in the duration of viral shedding in persons infected with COVID-19. Some of the individuals enrolled were asymptomatic while the majority had “mild symptoms”. Recent safety concerns particularly those linked to adverse cardiac events have prompted a cautious approach to interventions, which include hydroxychloroquine alone or hydroxychloroquine in combination with azithromycin. To date, limited published data on the efficacy of hydroxychloroquine alone or in combination with azithromycin remain inconclusive.

- **Convalescent Plasma**
The concept of treating infections with plasma containing “neutralizing antibody” is well known in the field of infectious diseases. Knowledge of this concept triggered national efforts through regional blood centers to identify individuals who have recently recovered from COVID-19 and solicit the collection of plasma from these individuals. The plasma containing antibody is extracted via a process known as plasmapheresis and the extracted plasma has been administered to individuals acutely ill with COVID-19.

- Tocilizumab (Anti IL-6 receptor antibody)

Interleukin 6 is a pro-inflammatory cytokine. It is believed that morbidity and mortality in some patients with COVID-19 may be occurring during apparent recovery and may be caused not by COVID-19 infection per se but rather by an exaggerated immune response to the virus. This exaggerated response referred to as “Cytokine Storm” may trigger a cascade of events resulting in inflammation of organs such as the lungs, kidneys, abnormalities in coagulation and ultimately fatal outcomes. It has been postulated that the blockage of certain receptors may prevent this inflammatory reaction and thereby prevent further damage to the various organs. Tocilizumab is a compound normally used for the treatment of autoimmune/inflammatory disorders.

African Americans and Latinx may have limited access to COVID-19 trials and compassionate use programs because most studies are conducted at large tertiary academic medical centers where linkages to community based primary care practices may not exist. The NIH and others have already launched urgently needed COVID-19 vaccine trials. There is an opportunity to maximize enrollment of underrepresented racial and ethnic minority populations into COVID-19 clinical therapeutic and vaccine trials. This effort will require education and commitment from researchers and clinical trial funding agencies. It is critical to dispel any myths or mistrusts proactively to avoid hurdles such as those encountered during the recent resurgence of measles. Similar issues also limited initial participation of underrepresented populations in early antiretroviral trials. It is also critical to involve and collaborate with local leaders who are trusted within communities of color. This most certainly is yet another reason why the support of The Congressional Black Caucus is so essential.

In addition, we appeal to FDA and NIH to proactively collaborate with appropriate federal agencies, pharmaceutical sponsors, and academic medical centers to assure inclusion of underrepresented racial/ethnic groups most heavily impacted by the COVID-19 pandemic.

As a group of African American infectious disease specialists and members of IDSA, we have recommended that our Society collaborate with other professional organizations such as the National Medical Association, the Association of Black Cardiologists and leadership of Historically Black Colleges and Universities. These institutions and societies have historically served communities of color and can provide guidance in the development of awareness campaigns for communities, educational initiatives and cultural competence programs for practitioners. As the organization dedicated to the
care of patients with infectious diseases and the prevention of communicable diseases, the Infectious Disease Society of America (IDSA) can be instrumental in setting up task forces and/or advisory panels that will support the ongoing efforts of the CDC, NIH, and FDA, as well as other professional and community organizations.

We, as African American infectious diseases specialists, respectfully urge the Honorable Members of the Congressional Black Caucus to actively support broad initiatives aimed at increasing the recruitment and enrollment of underrepresented patient populations into clinical trials. Importantly, we also respectfully urge the Distinguished Members of the Congressional Black Caucus to collaborate with the NIH, CDC and industry sponsors to increase the participation of African American and Latinx clinical investigators.

We sincerely hope that the Distinguished Members of the Congressional Black Caucus will respond to this “Clarion Call”.

SUMMARY & RECOMMENDED ACTIONS:

Summary:

- As of April 30, 2020, more than 1,064,572 people in the United States have been diagnosed with COVID-19 with over 61,669 deaths reported.
- About 90% of seriously ill and hospitalized COVID-19 patients have underlying medical conditions.
- Mortality associated with COVID-19 has disproportionately affected members of the African American and Latinx communities in cities and states across the country.
- In the City of New York, African Americans and Latinx comprise the majority of frontline workers placing them at higher risk for contracting SARS-Cov2 infection. Similar patterns of occupations are likely in other urban centers.
- As of April 28, 2020, there have been at least 5,000 cases of COVID-19 among meat processing workers resulting in at least 17 deaths. This pandemic has impacted 62 separate plants across 23 states. Recent outbreaks of COVID-19 in the meat processing industry have disproportionately impacted underserved and often undocumented persons working in the meat packing industry plants located predominantly in rural areas of Midwestern and southern states. A disproportionate number of these workers are Latinx or in many cases immigrants from other countries who have limited access to health care services. The current outbreaks of COVID-19 among workers in meat packing plants and in Dougherty County Georgia represent a harbinger of events, which may significantly impact regions of the mid-west and southeast, spared the brunt of the pandemic thus far.
- In many areas of the U.S., long term care and assisted living facilities with vulnerable elderly immunocompromised residents account for a sizeable percentage of COVID-19 related mortality.
- One out of five Americans rely on Medicaid but recent and proposed long-term funding cuts have created new barriers to primary care and worsened health care
disparities. These underlying disparities have undoubtedly contributed to the excess mortality among African Americans and Latinx with COVID-19

- Budget reductions and re-structuring of the U.S Food and Drug Administration (FDA) has hampered the capability of the agency to analyze data, expedite reviews and approvals of applications for both diagnostic tests and therapeutic agents for COVID-19.
- Social distancing, quarantine and isolation of persons infected with COVID-19 have proven effective in controlling the spread of disease and thereby limiting morbidity and mortality. This has been most vividly demonstrated in the State of California.

**Recommended Actions:**

- We respectfully request that the Congressional Black Caucus joins the undersigned African American infectious disease specialists and members of the Infectious Disease Society of America (IDSA) to recommend that the current Administration immediately restores full funding of the FDA, the NIH and the Centers for Disease Control and Prevention to the pre-2017 levels of funding or higher. In particular, we call for the immediate reinforcement of the CDC Surveillance and Preparedness Programs.
- We respectfully request support from the Honorable Members of the Congressional Black Caucus to join the undersigned African American infectious disease specialists and members of IDSA to demand for the reinstatement of the National Security Council Unit, which focused on “Pandemic Preparedness”. The reinstatement will ensure coordination of the federal outbreak and disaster preparedness, improve future national and international responses to emerging infectious disease threats, and minimize future social and economic disruption. Moreover, the reinstatement will result in the enhancement of effective and rapid mitigation efforts, and thereby lower morbidity and mortality.
- We respectfully request that the Honorable Members of The Congressional Black Caucus along with IDSA leadership, collectively express strong opposition to planned reductions in Medicaid and Medicare budgets, which will seriously damage hospital preparedness throughout the country and endanger the lives of patients, health care professionals and first responders.
- We respectfully request support of the Congressional Black Caucus in the continued recommendation for a federal response for “expanded access to COVID-19 testing”. Moreover, there is an unmet need not only for antibody testing but also for detailed analysis of all currently available COVID-19 diagnostic assays and a standardization of the diagnostic testing with regard to sensitivity and specificity, which heretofore has not been clearly defined. Moving forward, rigorous analysis and standards, which existed must be brought to bear balance with the obvious needs for the rapid response required.
- We respectfully request The Congressional Black Caucus to support adequate funding for the NIH to perform coronavirus research focusing on zoonosis, genetics,
and pathogenesis, transmission, clinical spectrum, and diagnostic tools, as well as new therapeutic modalities and vaccines.

- There must be support for research to expeditiously analyze results of antibody testing, interpretation of results and to address multiple issues related to immunity to COVID-19 among those who have recovered from the infection, which to date remains unknown.
- We request that The Honorable Members of the Congressional Black Caucus join the undersigned African American infectious disease specialists and IDSA leadership in advocating for increased representation and inclusion of underserved populations such as African Americans and Latinx in epidemiologic studies (serosurveys), clinical trials designed for the prevention of COVID-19 (vaccines and therapeutics) and therapeutic research aimed at persons infected with COVID-19 and those with critical illness.
- We also urge the Congressional Black Caucus along with our IDSA leadership to join other leaders in the medical and scientific community to urge all officials to enact and where applicable continue enforcement of the measures involving social distancing. We share concern expressed by medical leaders such as Dr. Anthony Fauci that the premature discontinuation of these measures, which have thus far limited the spread of COVID-19 will increase the risk of a "rebound" and ultimately contribute to further fatalities disproportionately impacting the African American and Latinx Communities.
- We call upon The Congressional Black Caucus to leverage the collective clout of over 12,000 infectious disease specialists and public health scientists of IDSA in reducing the disparities in morbidity and mortality experienced among African American and Latinx patients due to COVID-19.

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SIGNATORS:

Virginia D. Banks MD MBA FIDSA, Northeast Ohio Infectious Disease Associates Youngstown, Ohio

Judith Absalon, MD, MPH, FIDSA, Adjunct Professor, City University of New York, Graduate School of Public Health & Health Policy, New York

Adaora A. Adimora, MD, MPH, Sarah Graham Kenan Distinguished Professor of Medicine, Professor of Epidemiology, the University of North Carolina at Chapel Hill

Upton Allen MD FIDSA, Bastable-Potts Chair in Infectious Diseases Research Professor, Paediatrics and Institute of Health Policy, Management & Evaluation Senior Associate Scientist and Chief, Division of Infectious Diseases/Hospital for Sick Children, Interim Head, Transplant and Regenerative Medicine Centre, Department of Paediatrics, University of Toronto

Vladimir Berthaud MD MPH FACP FIDSA, Professor of Medicine, Director, Division of Infectious Diseases, Meharry Medical College, Nashville, Tennessee

Oni J. Blackstock MD, MPH, Internist, HIV Specialist and Public Health Specialist, New York, NY

Virginia Caine MD, Director Marion County Public Health Department Infectious Disease Consultant, Indiana University Medical center, Indianapolis, Indiana, Associate Professor of Medicine, Past President American Public health Association, Former Member, National Centers for Disease Control & Prevention Emergency Preparedness Committee

Christopher da Costa, MD, PhD, FACP, FIDSA, Consultant Physician Reviewer, CBER, US Food and Drug Administration, White Oak, MD

Michelle Flores-Moore, MD, MS, Associate Professor of Medicine, Director, Infectious Diseases Fellowship Training Program, University of North Carolina School of Medicine, Chapel Hill, North Carolina

Dial Hewlett Jr MD FACP FIDSA, Division of Disease Control, Westchester County Department of Health, New Rochelle, NY, Infectious Disease Consultant, Co-Chair Infection Control & Prevention, Calvary Hospital, Bronx, NY. Adjunct Associate Clinical Professor of Microbiology & Immunology New York Medical College, Valhalla, N.Y.
Livette Johnson, MD, Associate Professor of Medicine, Division of Infectious Diseases, Meharry Medical College

Celia Maxwell MD FACP FIDSA, Professor of Medicine, Principal Investigator for Ryan White EIS Part C, Associate Dean for Research, Howard University School of Medicine, Washington, DC

Mona Rigaud MD, MPH, FIDSA, Pediatric Infectious Diseases, Brooklyn, New York

Patricia Whitley Williams MD, Professor of Pediatrics, Department of Pediatrics, Chief, Division of Allergy, Immunology & Infectious Disease, Associate Dean for Inclusion and Diversity, New Brunswick, New Jersey

Bonnie M. Word MD, FAAP, FIDSA Pediatric Infectious Diseases, Houston Travel Medicine Clinic Houston, Texas

Appendix: The Infectious Disease Specialist

Infectious diseases represent the most impactful specialty in medicine as illustrated by the coronavirus pandemic and the news media headlines made by diseases outbreaks such as SARS, MERS, and Ebola, Zika, and Chikungunya, as well as chronic infections like HIV and hepatitis. Although many infections can be averted through increased awareness, education, vaccinations and preventive measures, people continue to suffer a heavy toll from infectious diseases. Malaria, tuberculosis, HIV, diarrheal illnesses, and acute respiratory syndromes remain major causes of morbidity and mortality around the world. Infection is the main cause of death in people with many chronic comorbidities including cardiovascular, pulmonary, and renal disease, as well as cancer and autoimmune disease. Moreover, too many people die of hospital-acquired infections each year and the number of people facing antibiotic resistance in the United States is still too high. According to the CDC, more than 2.8 million antibiotic-resistant infections occur in the United States each year, and more than 35,000 people die as a result. In addition, nearly 223,900 people in the United States required hospital care for *C. difficile* and at least 12,800 people died in 2017. The infectious disease specialist plays a major role in improving quality-of-life and reducing mortality. For example, prompt infectious disease consultation can prevent amputation, preserve transplanted organs, and avoid unnecessary procedures, thereby reduce hospital length of stay, save healthcare costs, and improve productivity. The terms disease eradication (smallpox and poliomyelitis) and elimination (HIV and hepatitis C) apply almost exclusively to infectious diseases. The infectious disease specialist is a gatekeeper, a medical detective, and an expert in communicable disease. The specialty requires broad knowledge in microbiology, immunology, epidemiology, geography, human behavior, cost-effectiveness analysis, and clinical medicine. The daily schedule spans over long work hours of detailed medical history and physical examination, methodic clinical decision-making, and carefully crafted communication. The increase volume of international travel and global trade, climate changes, and population displacements due to wars or economic challenges, and pervasive social, racial/ethnic, and environmental disparities can only aggravate the impact of future pandemics. Unfortunately, there is a critical shortage in infectious diseases specialists at a time when they are sorely needed. The United
States will never be prepared for other unknown/unexpected pandemics if we do not address this shortage. Infectious disease specialists will continue to lead the effort in education, disease management, prevention, control, and research to eradicate COVID-19 on the planet.