BUILDING A RESILIENT HEALTH CARE FUTURE WITH BIOTECHNOLOGY

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Before the
U.S. Senate Committee on Finance
Subcommittee on Health Care

August 4, 2026

Chairman Young, Ranking Member Hassan, and distinguished members of the Subcommittee, thank you for holding today's hearing and for the opportunity to testify.

My name is Vera Luther and I am a practicing infectious diseases (ID) physician and section chief of infectious diseases at Dartmouth Health in New Hampshire. I have spent nearly two decades treating patients with serious and life-threatening infections, educating and training the next generation of ID physicians, and leading health system efforts to optimize antibiotic use and prevent healthcare associated infections. In addition, I recently earned a Master of Science in health informatics degree, which gave me a deeper understanding of how clinical data, health information technology systems, and AI technologies can be designed, governed, and applied to improve patient care and healthcare operations. I am a Fellow of the Infectious Diseases Society of America (IDSA), where I have held a variety of leadership roles. I served as the inaugural chair of IDSA's Antimicrobial Stewardship Curriculum Workgroup and recently completed my term as chair of IDSA's Training Program Directors' Community of Practice. IDSA represents over 13,000 infectious diseases physicians, scientists and health care professionals across the country. Our members care for patients with serious infections; conduct research, including clinical trials; and lead health system infection prevention, antimicrobial stewardship and emergency preparedness programs.

Strengthening biotechnology innovation is critical to support the resilience of communities across the country in the face of urgent and growing health threats, such as antimicrobial resistance (AMR).

AMR is not a future threat; it is a present-day crisis that is already killing Americans, driving up health care costs, and compromising the safety of routine surgery, organ transplantation, cancer chemotherapy and neonatal intensive care. AMR disproportionately burdens rural communities, where the infrastructure needed to fight it (e.g. infectious diseases specialists, clinical microbiology labs and rapid diagnostics) is often unavailable. I appreciate this opportunity to discuss how Congress can better equip clinicians, patients, caregivers and communities to confront AMR and other serious infectious diseases threats.

Summary

AMR is one of the most serious biological threats facing human health today. The top things that I want lawmakers to know, and which I will further describe in my testimony, are:

- The post-antibiotic era, in which some patients are left with zero effective treatments for their infections, is already here for many of the patients my colleagues and I care for every day. They are already facing lengthy hospitalizations, limb amputations and even death from infections that are resistant to our available antibiotics. Our patients need action now.
- AMR is not a single disease, but rather an array of difficult- or impossible-to-treat infections that make it more dangerous for us to provide many types of medical care, including cancer chemotherapy, hip and knee replacements, organ transplants, biologic therapies, cesarean

sections and other surgeries. Inaction on AMR means undoing nearly a century of medical progress.

- The most important thing lawmakers need to know about AMR is how to save patients' lives and protect modern medical care from this threat. For that, we need three things:
    - Novel antimicrobial drugs
    - Stewardship programs in our health care facilities to ensure antimicrobials are used appropriately
    - Infectious diseases physicians with the specialized training necessary to care for patients with resistant infections and to lead clinical trials and health system programs to prevent infections and optimize antimicrobial use.

Unfortunately, our pipelines of both antimicrobial drugs and ID physicians are in crisis.

Overview of top recommendations: How lawmakers can save patient lives and protect modern medicine from AMR and other biologic threats

- **Pass the PASTEUR Act:** The bipartisan Pioneering Antimicrobial Subscriptions to End Upsurging Resistance (PASTEUR) Act will revitalize the antimicrobial pipeline by shifting federal payments for antimicrobial drugs from the volume of drugs used to the value these drugs provide to patient care and public health. Antimicrobial drugs are precious resources that must be used judiciously to preserve their effectiveness. Because they are not used in high volumes, traditional economic models for drug development have failed to foster the pipeline of antimicrobial drugs patients need. PASTEUR would also invest in needed antimicrobial stewardship programs in rural, safety net and critical access hospitals; long-term care facilities; and outpatient settings in order to optimize antibiotic use, improve patient outcomes, reduce AMR and save money.
- **Build the infectious diseases workforce:** Because ID is the third lowest paid medical specialty, we fill fewer than half our training programs in the annual Match—creating a crisis in which many patients who need us cannot reach us at all or are traveling long distances and delaying care, all with devastating consequences. We need Congress to invest in our specialty with targeted payment incentives, an exemption from this year's major cuts to practice expense reimbursement, the development of ID quality measures and a mechanism to enable ID physicians to benefit from the cost-savings our work generates.

Priorities for biotechnology to address health threats such as AMR

Antimicrobial resistance and novel antimicrobial development

AMR refers to pathogens' natural ability to evolve to resist the effects of antimicrobial drugs, ultimately making those drugs ineffective. While resistance occurs in nature and is a consequence of any antimicrobial use, the overuse and misuse of antimicrobials in humans, animals and the

environment greatly increase the speed at which resistance develops, significantly shortening the time for which antimicrobial drugs remain effective and reducing the number of useful antimicrobials. Antimicrobials are unlike any other therapeutic in that use in one individual can impact efficacy in the rest of the population.

It is essential that we take AMR seriously, and that means investing in the research and development of novel antimicrobials. Resistant infections already kill millions of people a year, and they're putting modern medicine in serious jeopardy. In the US alone, AMR is linked to 170,000 deaths annually.[1] The post-antibiotic era is not just a looming threat — for many patients it is already here. AMR is a crisis not only for individual patients but for our entire health care system. National health care costs linked to infections from six of the biggest AMR threats are estimated to be more than $4.6 billion annually.[2] $1.9 billion of these costs are estimated to be borne by Medicare.[3] Multiple studies have found that the costs of treating infections associated with cancer and organ transplants, surgical site infections and urinary tract infections all increase substantially when the infection is resistant to front-line antibiotics.[4,5,6,7]

We must invest in the development of novel antimicrobials because antimicrobials enable and sustain modern medicine. Most medical advances carry a risk of infection and rely upon antimicrobials. Consider procedures like cancer chemotherapy, organ transplants, hip and knee replacements, cesarean sections, other surgeries and complex medical care. All of these procedures that save and enhance human lives carry the risk of infection. Clinicians are only able to provide this care because they have safe and effective antimicrobials to prevent and manage infectious complications. But as our antimicrobial arsenal diminishes, our modern medical gains are unraveling, and patients are facing devastating consequences. Statistics alone do not convey what antimicrobial resistance does to a patient and a family. Consider a few examples, that my colleagues and I regularly face — the details have been altered to protect patient privacy, but the clinical realities they reflect are typical of what we see on a regular basis:

> **Patient vignette 1: When there are no antibiotic choices left**
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> *A 30-year-old mother of four young children was hospitalized with a severe and life-threatening form of lupus and placed on advanced immunosuppressive drugs for treatment. Her treatment resulted in a prolonged hospitalization and she developed a pneumonia due to a carbapenem-resistant Enterobacterales (CRE) organism — one of the pathogens the Centers for Disease Control and Prevention (CDC) has flagged as an urgent threat. She was started on broad spectrum, combination antibiotic therapy. However, the pneumonia continued to progress and her infection became increasingly resistant. The bacteria*

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[1] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2821%2902724-0/fulltext
[2] https://www.cdc.gov/drugresistance/solutions-initiative/stories/partnership-estimates-healthcare-cost.html
[3] https://academic.oup.com/cid/article/74/6/1070/6374434
[4] https://acsjournals.onlinelibrary.wiley.com/doi/full/10.3322/caac.21697.
[5] https://www.reuters.com/investigates/special-report/usa-uncounted-costs/#:~:text=However%2C%20at%20$5.7%20million%2C%20the,to%20overall%20U.S.%20healthcare%20costs
[6] https://pmc.ncbi.nlm.nih.gov/articles/PMC9481497/#:~:text=At%20multivariate%20analysis%2C%20only%20iterative,to%20prevent%20with%20current%20strategies
[7] https://www.sciencedirect.com/science/article/pii/S2212109921000261

eventually entered her bloodstream. When our microbiology lab identified the organism in the blood culture, the susceptibility report that shows which antibiotics will be effective in killing the bacteria showed a pan-resistant strain, meaning no antibiotics would be effective. We tried several different combinations of antibiotics, including novel therapies; however, she tragically died from her infection.

Patient vignette 2: Elective surgery can become a high-stakes gamble

A marathon runner in his 50s who worked a manual labor job underwent a routine total knee replacement. He developed a surgical site infection with methicillin-resistant Staphylococcus aureus (MRSA) that later grew resistant to multiple additional agents and progressed to a deeper infection. He underwent three additional surgeries to remove and eventually replace the hardware, months of intravenous antibiotic therapy through a home infusion line and nearly a year away from work. The procedure that was supposed to decrease his pain and restore his mobility instead became a year-long ordeal. This is illustrative of what happens to modern medicine broadly when resistant organisms make routine procedures unsafe.

Patient vignette 3: Devastating medical and financial consequences from a resistant urinary tract infection

A woman in her 60s living in a small town was admitted to her local critical access hospital with what appeared to be a routine urinary tract infection. The hospital had no on-site infectious diseases physician and no rapid molecular diagnostics; it took nearly three days to get a culture result back from a reference laboratory two hours away. Empiric antibiotics did not cover the resistant organism (an extended-spectrum beta-lactamase [ESBL]-producing E. coli) that was eventually identified in her urinary tract and bloodstream. By the time an effective antibiotic was started, she had progressed to septic shock and required transfer by helicopter to a tertiary center. She survived, but only after three weeks in the intensive care unit, dialysis for acute kidney injury, and a hospital bill that her family is still working through. Had a rapid diagnostic test been available at her local hospital, her definitive therapy could have started three days sooner.

Patient vignette 4: The rural stewardship gap

At a critical access, rural hospital I supported through a telehealth stewardship consultation, a hospitalist described the reflex to "shoot broad" with antibiotics. This reflex was not out of carelessness, but because there is no infectious diseases consultant on site, culture results take days to return from an outside reference lab, and the clinical stakes of under-treating a patient with possible sepsis are so high. This is a rational response to an under-resourced system, but it is precisely the pattern that accelerates resistance. Nationally, nearly half of small and rural hospitals operate without any infectious diseases specialist on staff, even though they routinely diagnose and treat patients with resistant infections.

A few key areas where AMR poses a major threat to patients:

- **Cancer:** Cancer and many cancer treatments can weaken the immune system. Infections are a primary or associated cause of death in 50% of patients with cancer, as AMR can make these infections difficult or impossible to treat.[8] Sadly, my colleagues and I have seen patients cured of cancer only to succumb to infections caused by resistant bacteria.
- **Implantable medical devices:** Prosthetic joints, pacemakers, implantable defibrillators, ventricular assist devices for patients with serious heart disease and other implantable devices can easily become infected. In many cases, removal of these devices may be impossible or impractical, and patients may face recurring or chronic infections that can become increasingly resistant.
- **Biologics:** Certain biologics that are used to treat a wide range of conditions such as rheumatoid arthritis, psoriasis, and inflammatory bowel disease weaken the immune system, making individuals more susceptible to infections.
- **Organ transplants:** In 2025, 49,064 organ transplants were performed nationwide. With the exception of 2020, transplants have increased each year since 2013.[9] Patients who receive an organ transplant require immune-suppressing medications so their bodies won't reject the transplant. Unfortunately, this increases their risk of infection and their risk of AMR infections. Further, the dwindling arsenal of antimicrobial drugs available to support these patients means many of them face death due to infection despite a successful transplant.
- **Maternal mortality:** Sepsis is the body's overwhelming and life-threatening response to untreated infections, which can result in organ failure and death. It is the second leading cause of pregnancy-related deaths. AMR exacerbates the risk of sepsis by making infections much more difficult to treat. Infection or sepsis causes roughly 10% of pregnancy-related deaths in the United States. Pregnancy-related infections that can lead to sepsis can be associated with miscarriages, C-sections, prolonged or obstructed labor, and mastitis (breast infection).[10]
- **Cystic fibrosis:** People with cystic fibrosis (CF) face a heightened, life-long risk of infections because of the thick sticky mucus in their lungs. Routine use of antibiotics in CF care is medically necessary; however, too many people with cystic fibrosis find themselves battling difficult-to-treat infections for which existing antibiotics are not effective.
- **Opioid use:** The opioid epidemic is also fueling the spread of resistant infections, including life-threatening heart valve infections, skin and soft tissue infections, bone and joint infections, and more. The CDC estimates that individuals who inject drugs are 16 times

[8] https://acsjournals.onlinelibrary.wiley.com/doi/full/10.3322/caac.21697
[9] https://unos.org/media-resources/releases/u-s-surpasses-49000-organ-transplants-while-deceased-organ-donations-dip/
[10] https://www.sepsis.org/sepsisand/pregnancy-childbirth/

more likely to experience an invasive MRSA infection.[11] This is particularly frightening as the opioid crisis continues to worsen.

No infectious disease physician goes into the field wanting to tell a patient we've run out of options, yet that conversation is happening more often as our antimicrobial arsenal runs dry. Despite the urgent and increasing need for novel antimicrobials to treat resistant infections, the current pipeline is shrinking and fragile. A 2025 analysis identified only 90 antimicrobials in development, down from 97 in 2023. Only 15 of those are considered innovative, and only five target what experts have identified as critical priority pathogens—meaning those pathogens that are particularly deadly and for which we have the fewest or no treatment options.[12] Given that most drugs in development do not ultimately secure FDA approval, and that there is a wide array of drug-resistant bacteria and fungi for which new therapies are needed, the current pipeline is grossly inadequate. In addition, the vast majority of antimicrobial innovation comes from small biotech firms that typically face more economic vulnerabilities than large companies.

There are unique economic barriers that have dramatically limited antimicrobial innovation. Antimicrobials are typically taken for a very short duration to treat acute illnesses, meaning they generate far less revenue than drugs for chronic conditions, which patients can take for years or even lifetimes. Antimicrobials must also be used judiciously, only when they are truly needed, in order to protect them from the development of resistance. This limited use, while critical from a clinical and public health perspective, further limits a developer's ability to earn a return on their investment. In addition, there are significant financial and logistical barriers to conducting clinical trials to develop novel antimicrobial drugs. Trials are costly and require significant resources. Further, investors are reluctant to support trials for drugs that are unlikely to produce much revenue. Patients with the infections that need new antimicrobials most are often incredibly sick with multiple serious health conditions, making them difficult to enroll in trials. Because infections can progress so rapidly, often in a matter of hours, physicians often begin treatment very quickly, and initial treatments can make someone ineligible for a clinical trial. Ideally, researchers want to begin developing a drug when an infection is still relatively rare, so that the drug can be available before the infection spreads to larger numbers of people. But small patient populations also make it difficult to conduct clinical trials.

The bipartisan PASTEUR Act, authored and introduced by Senators Michael Bennet and Todd Young, provides an urgently needed solution that would revitalize novel antimicrobial development in the U.S. by paying for the value that antimicrobials provide rather than just the quantity of antimicrobials we use. Under PASTEUR, HHS could grant contracts to developers of truly novel antimicrobials that address unmet patient needs instead of paying for the amount of antibiotics used by Medicare and other federal payers. These contracts would provide a reasonable, predictable source of revenue, which is essential to stimulate and sustain the lasting innovation needed to meet patient needs now and in the future. Importantly, under PASTEUR, novel antimicrobials would be evaluated through an objective scoring system, and only those that are

[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7045815/#:~:text=Data%20from%206%20sites%20of,develop%20invasive%20MRSA%20infections%20than

[12] https://iris.who.int/server/api/core/bitstreams/b2e9ae1b-2e5f-425d-902a-4f9d4f3a33db/content

truly innovative and positively impact patients, health systems and public health will be eligible for contracts.

While multi-drug-resistant infections are currently costing our health systems and the federal government dearly, novel antibiotics have the potential to reduce health care costs significantly. Studies have shown that new antibiotics with activity against high-priority resistant pathogens can reduce costs by reducing hospital length of stay, preventing future infections and averting adverse events such as kidney injury.[13,14,15]

New rapid diagnostics

An effective response to antimicrobial resistance and infectious diseases threats depends on robust surveillance and early detection systems that allow us to know, and ultimately predict, what pathogens are circulating in a community before they escalate into outbreaks. Surveillance provides the situational awareness needed to detect emerging resistance patterns, identify unusual disease clusters and anticipate shifts in pathogen behavior early enough to intervene. Technology is central to modernizing this capability: Genomic sequencing can track the emergence and spread of resistant strains in near real time, wastewater and environmental monitoring can flag community-level trends before clinical cases surge, and digital platforms that integrate laboratory, clinical and epidemiological data can support predictive modeling of outbreak trajectories. Artificial intelligence and machine learning tools are increasingly able to synthesize these disparate data streams to forecast where and when threats are likely to emerge, giving public health systems a critical head start.

However, technology and testing alone are not sufficient. Interpreting the results of increasingly sophisticated diagnostic and surveillance tools, and translating them into sound clinical and public health action, requires deep expertise in infectious diseases. Skilled professionals are needed to make sense of complex susceptibility profiles, distinguish colonization from true infection, and advise on appropriate management and treatment strategies. This makes sustained investment in infectious diseases workforce development essential: Without a pipeline of trained clinicians, laboratorians and epidemiologists, even the most advanced diagnostic and surveillance technologies will fail to translate into better patient outcomes or a more resilient public health response.

We also need new rapid diagnostic tests to enable faster onset of accurate treatments, optimal use of antimicrobial drugs, infection prevention and surveillance. Hospital studies demonstrate that faster pathogen identification and antimicrobial susceptibility testing can generate approximately $1,000 in savings per patient with bloodstream infections by enabling earlier appropriate therapy, with institution-wide savings ranging from $200,000 to $900,000, depending on program scale and setting.[16, 17, 18] By enabling rapid, accurate multiplex PCR diagnostics, hospitals can cut length of stays by one to two days per patient with acute respiratory infections.[16]

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[13] https://link.springer.com/article/10.1007/s40121-022-00607-x
[14] https://academic.oup.com/cid/article/72/Supplement_1/S34/6123352
[15] https://journals.sagepub.com/doi/10.1177/0018578720985436
[16] https://pubmed.ncbi.nlm.nih.gov/31383498/

Diagnostics are a key tool for antimicrobial stewardship programs, whose purpose is to ensure that patients receive optimal antimicrobial therapy for the best possible outcome. This also helps prevent inappropriate antibiotic use, thereby helping to slow or limit the development of resistance. The more rapidly diagnostic tests can identify whether a patient has a bacterial, fungal, or viral infection, pinpoint the specific pathogen, and determine that pathogen's susceptibility to our available drugs, the more impactful our stewardship programs can be. When embedded in antimicrobial stewardship programs, diagnostic tests can reduce antimicrobial consumption by approximately 22% to 36% without raising infection-related readmissions or mortality.[17]

Beyond developing new tools, improving access to existing diagnostics is equally critical. Many effective, already validated tests remain out of reach in numerous clinical settings due to cost, limited laboratory infrastructure, workforce shortages, supply chain gaps, or lack of reimbursement pathways, particularly in low resource and rural settings. Expanding access means investing in point-of-care platforms that do not require extensive laboratory infrastructure, strengthening supply chains to prevent stockouts, building laboratory and workforce capacity to run and interpret tests, and ensuring reimbursement and procurement policies keep pace with clinical need. Without deliberate efforts to close these access gaps, the benefits of even the best designed diagnostics will remain unevenly distributed, leaving many patients and communities without the tools needed to detect and respond to infectious threats in time.

Investments in research and development of diagnostics and data collection to further inform the optimal use of diagnostics is critical to support our responses to antimicrobial resistance and other infectious disease threats.

Stable domestic manufacturing for medical supplies

Shortages of existing antibiotics, blood culture vials and other critical medical supplies greatly impede routine health care and our ability to prepare for and respond to outbreaks and other emergencies. According to the June 2026 report from the American Society of Health-System Pharmacists, which tracks U.S. drug shortages, antimicrobials are currently the second most common drug class experiencing shortages, with 19 injectable antimicrobials and 13 non-injectable antimicrobials experiencing active shortages.[18]

As an infectious diseases physician, I have seen firsthand the negative impact of these shortages on patients and public health. When front-line antibiotics are not available, we often have to turn to drugs that may be less effective, have more side effects or greater toxicity, or are broader spectrum, meaning they can have a greater negative impact on a patient's gut microbiome and more rapidly generate antibiotic resistance among more species of bacteria. Unfortunately, drug shortages have become so common that managing them has become a way of life in our hospitals, but that should not be the case. We owe our patients better care.

Shortages can occur for various reasons, including insufficient manufacturing capacity, increases in demand and raw materials issues. Many of these root causes are exactly where biotechnology

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[17] https://academic.oup.com/cid/article/44/2/159/328413

[18] https://www.ashp.org/drug-shortages/shortage-resources/drug-shortages-statistics?loginreturnUrl=SSOCheckOnly

can make a difference. Modern biomanufacturing platforms, including engineered microbial production strains, cell-free synthesis systems and modular, single-use bioreactors, can be reconfigured far more quickly than traditional chemical manufacturing lines. This allows facilities to pivot production toward whatever antibiotic or supply is in short supply, rather than being locked into a single product for years at a time. This flexibility also reduces dependence on the small number of overseas facilities and narrow raw-material supply chains that make the current system so fragile: A disruption at one plant or one active pharmaceutical ingredient supplier can trigger shortages nationwide.

Biotechnology can also help us anticipate and buffer against shortages before they reach patients. Distributed, smaller-scale biomanufacturing units, sometimes called "manufacturing-in-a-box," can be deployed regionally or even co-located with hospital systems, shortening supply chains and enabling faster surge production during outbreaks. Synthetic biology techniques are also opening new routes to producing older, harder-to-manufacture antibiotics more efficiently, and to engineering novel antimicrobials, including bacteriophage-based therapies, that could ease pressure on the shrinking pipeline of effective drugs. On the diagnostics side, innovations such as engineered blood culture media, biosensors and rapid molecular diagnostics can reduce reliance on the specific glass vials and reagents that have themselves been subject to repeated shortages, while also getting patients onto targeted therapy faster and reducing unnecessary use of broad-spectrum drugs.

I'm grateful for congressional efforts to prioritize domestic manufacture of medical supplies and hope it will bring tangible relief soon. But that effort will go further, and faster, if it explicitly invests in these newer biomanufacturing technologies — not just rebuilding capacity for how we've always made these products, but building the more resilient, adaptable production systems that biotechnology now makes possible.

Ensuring patients benefit from biotechnology innovation

Antimicrobial stewardship

Developing novel antimicrobials is only one essential piece of a successful response to AMR. It is equally important that infections are diagnosed accurately and that antimicrobial drugs are used appropriately.

Antimicrobial stewardship programs aim to optimize antibiotic use, ensuring patients receive the right drug, at the right dose, for the right duration, to treat the right diagnosis and pathogen, while minimizing resistance and adverse effects. These programs have been found to improve patient outcomes, reduce inappropriate antibiotic use and lower health care costs.[19, 20] Nationwide, 98% of hospitals report having implemented all seven of the core elements of antimicrobial stewardship recommended by CDC[21] and as required by the Joint Commission and the Centers for Medicare and Medicaid Services (CMS). Despite this important progress, many opportunities remain to improve antimicrobial therapy and reduce inappropriate antibiotic use in hospitals.

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[19] https://academic.oup.com/cid/article/66/7/995/4851152
[20] https://pubmed.ncbi.nlm.nih.gov/27246783/
[21] https://www.cdc.gov/antibiotic-use/stewardship-report/current.html

While many hospitals can meet stewardship requirements on paper, they often lack the resources and experienced staff necessary to fully implement medically recommended stewardship protocols and to extend the benefits of stewardship to all patients. Studies have found consistent gaps between necessary levels of physician and pharmacist staffing and existing staffing levels, as well as insufficient access to rapid diagnostics needed to guide timely, targeted antimicrobial decisions. A 2018 study found that each 0.50 increase in physician and pharmacist full-time employee support for a stewardship program predicted a 1.48-fold increase in the odds of the program demonstrating effectiveness.[22]

The bipartisan PASTEUR Act would provide much needed resources to rural, critical access and safety net hospitals and long-term care facilities to support their antimicrobial stewardship programs. Further, the bill would create a pilot program to begin implementing stewardship in outpatient settings, with a focus on settings like retail clinics and urgent care facilities that have high levels of antimicrobial use.

Infectious diseases workforce shortages

Without a robust infectious diseases workforce across the country, communities will lack resilience in the face of major health threats, and patients will be unable to access and benefit from the latest research advances. We need ID doctors to prevent, diagnose and treat serious infections, conduct research (including clinical trials), and lead health system programs for infection prevention, antimicrobial stewardship and emergency preparedness and response.

Agencies like CMS, along with the Joint Commission and state licensing boards, rightfully require antimicrobial stewardship and infection prevention programs to track and reduce hospital-acquired infections and antimicrobial resistance. These programs significantly improve patient care. Yet, our current reimbursement models severely undercompensate the infectious diseases specialists required to lead these exact programs, driving a shortage of the experts hospitals need. We are mandating that health systems meet rigorous, resource-intensive regulatory standards, while relying on a payment structure that makes it financially unsustainable to recruit and retain the workforce necessary to fulfill them.

The ID workforce is in crisis. Nearly 80% of counties in the U.S. do not have a single ID physician. In last year's annual "Match" in which residents are placed in specialty training programs, only 45% of ID physician training programs filled, while most other specialties fill all or nearly all of their programs. Across the country, patients are often forced to travel several hours to see an ID specialist. Those delays in accessing ID specialty care result in higher health care costs and worse patient outcomes. Many hospitals spend months to years trying to hire new ID physicians when they have an open position and often have to limit their infection prevention and antimicrobial stewardship practices due to workforce shortages.

Despite two-three years of dedicated specialty training, ID physicians are among the third lowest paid specialty, below even general internal medicine, the primary specialty that all ID physicians are trained in. Medical students accrue significant educational debt, which drives them toward higher paying specialties. Surveys of medical students and residents consistently find high levels of

[22] https://doi.org/10.1093/cid/ciy255

interest in ID as a very intellectually stimulating and personally rewarding field, but also consistently demonstrate that financial barriers prevent many resident physicians from ultimately pursuing specialty fellowship training in ID.

I urge this subcommittee to advance legislative solutions to improve compensation for infectious diseases physicians, such as:

- Provide payment incentives for infectious diseases and other undervalued specialties, such as internal medicine (of which ID is a subspecialty)
- Exempt non-procedural health care services (including infectious diseases) from cuts to practice expense reimbursement that took effect in 2026 and have resulted in an average reimbursement cut of 6% to ID physicians
- Direct CMS to utilize existing program management funds to support quality measure development for infectious diseases, a specialty with very few quality measures, to enable ID physicians to meaningfully participate in value-based payment opportunities
- Establish a mechanism for ID physicians to benefit from the cost-savings that their work generates

Importantly, Congress has already built one important tool to address this debt burden, but it remains unfunded. The 2022 PREVENT Pandemics Act authorized the Bio-Preparedness Workforce Pilot Program, part of the broader Public Health Workforce Loan Repayment Program, which would offer loan repayment to infectious diseases, HIV and emergency preparedness health care professionals who commit to working in health professional shortage areas, medically underserved communities, federal health facilities such as VA clinics, or Ryan White–funded clinics. This is precisely the kind of targeted incentive needed to draw more physicians into infectious diseases and into the communities, including rural communities, that need them most. Four years after authorization, this program has never received a dollar of funding. I urge Congress to appropriate $5 million to launch the Bio-Preparedness Workforce Pilot Program, along with funding for the Public Health Workforce Loan Repayment Program as a whole.

Unique needs in rural communities

Rural communities, like many of the ones I serve in New Hampshire, face many of the same health care threats as their urban or suburban counterparts when it comes to things like antimicrobial resistance and emerging infectious diseases. But they have serious capacity limitations that must be addressed to ensure that all Americans, including those living in rural areas, have access to high-quality health care and can benefit from the latest medical research advances. One key example is that ID workforce shortages are particularly acute in rural areas.

As researchers are developing new therapeutics, diagnostic tests and other medical products, the needs of rural communities should be considered from the start by keeping qualities like portability, durability and ease of use top of mind. Products that do not require specialized transportation or storage are ideal, when feasible. Engaging clinicians from rural communities in product design can help ensure that products meet our logistical constraints and workflow challenges.

Once again, I am grateful to this committee for holding today's hearing, and I hope that this hearing will catalyze meaningful legislative progress on AMR. The patient examples I provided you are just a

sample of the millions of real people whose lives are impacted by multidrug resistant infections across our country. It is with all of them in mind that I look forward to working with you to advance solutions for AMR and other serious biologic threats.