



## COVID-19 Impacts on Preventing Infections: Prevent infections and reduce the spread of germs

Antimicrobial-resistant infections are amplified in health care. Germs spread among patients and across facilities. The inpatient population in 2020 was very different from the pre-pandemic population—hospitals saw higher numbers of sicker patients (hospitalization could not be avoided) who needed an extended length of stay. This increased their risk for resistant infections.

When done consistently and correctly, preventing infections is one of our greatest tools for combating antimicrobial resistance and saving lives.<sup>3</sup> We must continue building the national capacity for infection prevention and control to ensure these practices are put into action consistently.

As of 2017, dedicated infection prevention and control efforts in the United States contributed to reduced deaths from antimicrobial-resistant infections by 18% overall and by nearly 30% in hospitals.<sup>4</sup> However, the pandemic has undone much of this progress.

- ▲ Resistant hospital-onset infections and deaths both increased at least 15% during the first year of the pandemic. In a 2021 analysis, CDC also reported that, after years of steady reductions in healthcare-associated infections (HAIs), U.S. hospitals saw significantly higher rates for four out of six types of HAIs in 2020.<sup>5</sup> Many of these HAIs are resistant to antibiotics or antifungals.
- ▲ There were more and sicker patients during the pandemic who required more frequent and longer use of catheters and ventilators. This may have increased risk of HAIs and spread of pathogens, especially when combined with personal protective equipment and lab supply challenges, reduced staff, and longer lengths of stay.
- ▲ Acute care hospitals also saw more *Candida auris* cases, including in COVID-19 units.<sup>6</sup> *C. auris* has previously been a threat in post-acute care facilities (e.g., long-term care). The increased spread in hospitals could be a result of staffing and supply shortages and changes in infection prevention and control practices.

The United States has been building a solid foundation for public health preparedness and health systems resilience to address antimicrobial resistance. Before 2020, CDC highlighted the need for a strong foundation for health departments and healthcare facilities to rapidly identify and contain threats before they can spread. Prior to the pandemic, the *U.S. National Strategy for Combating Antibiotic-Resistant Bacteria* (CARB National Action Plan) set a goal that CDC double its investments in health departments to increase infection control and other prevention efforts.<sup>7</sup> In 2021, the U.S. government provided temporary funding to health departments through the COVID-19 pandemic that addresses some of these gaps. However, health departments will need sustainable resources to ensure these capacities can continue.

**Pandemic-related challenges hindered many infection prevention and control practices like hand hygiene, cleaning equipment, separating patients, and using personal protective equipment (PPE)—undoing some progress on combating antimicrobial resistance.**

Preventing infections is one of the greatest tools for combating antimicrobial resistance—saving lives and reducing healthcare costs.

**6 of the 18 most alarming antimicrobial resistance threats cost the U.S. more than \$4.6 billion annually<sup>8</sup>**

Vancomycin-resistant *Enterococcus (VRE)*



Carbapenem-resistant *Acinetobacter species*



Methicillin-resistant *Staphylococcus aureus (MRSA)*



Carbapenem-resistant *Enterobacterales (CRE)*



Multidrug-resistant (MDR) *Pseudomonas aeruginosa*



Extended-spectrum cephalosporin resistance in *Enterobacterales* suggestive of extended-spectrum  $\beta$ -lactamase (ESBL) production





### Investing in Healthcare Training & Education

It is essential to train anyone working in a healthcare setting on infection prevention and control and to maintain these practices to protect themselves, their coworkers, and their patients. CDC's [Project Firstline](#) was developed at the start of the pandemic to meet the infection control educational needs of the diverse U.S. healthcare workforce. Investing in healthcare workers, health departments, and programs like Project Firstline:

- Strengthens capacity to prevent, detect, and contain outbreaks of COVID-19 and antimicrobial-resistant infections.
- Expands infection prevention and control training and education to all types of healthcare staff.
- Allows local jurisdictions to provide surge capacity to facilities for clinical services.

In its first year, Project Firstline and partners:<sup>9</sup>

- Developed more than 130 educational products on proper infection prevention and control practices for COVID-19.
- Trained 33,300 U.S. healthcare workers via 300 educational infection prevention and control events.
- Registered more than 6,500 healthcare workers in continuing education courses through CDC's online learning platform.
- Launched an initiative with the American Hospital Association and the League for Innovation in the Community College to integrate enhanced infection prevention and control content into healthcare training at community colleges, including addressing disparities in healthcare training and access to resources for first generation or non-English speaking students.

### Assessments During the Pandemic Identified Infection Control Gaps

From January through July 2020, CDC's investments to build capacity in state and local health departments allowed them to perform 14,259 consultations in response to potential COVID-19 outbreaks at healthcare facilities.<sup>10</sup>



**14,259**  
Consultations

Outbreak consultations frequently included infection control assessments, which were conducted onsite or remotely using CDC's Infection Control Assessment and Response tools or similar tools adapted at the state or local level.



**2,105**  
Onsite assessments



**4,151**  
Remote assessments

Most of these assessments occurred in nursing homes or assisted living facilities.



Long-term care facilities

Infection control assessments and consultations were a critical component of the response to COVID-19 outbreaks, allowing facilities to rapidly address gaps in infection control practices and reduce the spread of COVID-19.



Closing infection control gaps



### What's Next: CDC is exploring investments in the U.S. infrastructure to better respond to the challenges of antimicrobial resistance and emerging threats simultaneously.

- Continuing to extend high-quality infection prevention and control training to all healthcare professionals.
- Increasing infection prevention and control implementation in facilities beyond hospitals, such as nursing homes and other long-term care facilities.
- Communicating clearly to the public and fostering conversations on topics like how germs spread and the importance of keeping hands clean.
- Identifying barriers to implementing and developing plans to maintain quality infection prevention and control practices while supporting efforts to respond to new threats.
- Increasing investments in state and local health departments, as part of the CARB National Action Plan.



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

Learn more: [www.cdc.gov/drugresistance/covid19.html](http://www.cdc.gov/drugresistance/covid19.html)