COVID-19 cited in significant increase in healthcare-associated infections in 2020

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After years of steady reductions in healthcare-associated infections, significantly higher rates of four out of six routinely tracked infections were observed in U.S. hospitals, according to a Centers for Disease

Control and Prevention analysis of data from the National Healthcare Safety Network (NHSN) published today in *Infection Control & Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America. Increases were attributed to factors related to the COVID-19 pandemic, including more and sicker patients requiring more frequent and longer use of catheters and ventilators as well as staffing and supply challenges.

"COVID-19 created a perfect storm for antibiotic resistance and healthcare-associated infections in healthcare settings. Prior to the pandemic, public health—in partnership with hospitals—successfully drove down these infections for several years across U.S. hospitals," said Arjun Srinivasan, M.D., CDC's Associate Director of Healthcare Associated Infection Prevention Programs. "Strengthening infection prevention and control capacities works. This information emphasizes the importance of building stronger, deeper and broader infection control resources throughout healthcare that will not only improve our ability to protect patients in future pandemics but will also improve patient care every day."

For this analysis, researchers used data collected through NHSN, the nation's largest healthcare-associated infection surveillance system, which is used by nearly all U.S. hospitals to fulfill local, state, or federal infection reporting requirements.

Major increases were found in 2020 compared to 2019 in four serious infection types: central line-associated bloodstream infections, catheter-associated urinary tract infections, ventilator-associated events, and antibiotic resistant staph infections. The largest increases were bloodstream infections associated with central line catheters that are inserted into large blood vessels to provide medication and other fluids over long periods. Rates of central line infections were 46% to 47% higher in the third and fourth quarters of 2020 compared to 2019.

With dramatic increases in the frequency and duration of ventilator use, rates of ventilator-associated infections increase by 45% in the fourth quarter of 2020 compared to 2019. The CDC analysis found sharp increases in standardized infection rates, indicating that the increases were not simply a reflection of more devices being used.

"Infection control practices in COVID-19 wards often adapted to shortages of personal protective equipment, responded to fear of healthcare personnel, and did not always lend themselves to better infection prevention," said Tara N. Palmore, M.D., and David K. Henderson, M.D., of the National Institutes of Health, in an editorial that accompanied the study. "The success of the previous several years, with steady declines in rates of these (healthcare-associated) and device-related infections, further accentuated the upswings that occurred in 2020."

The study found that two other types of infection remained steady or declined during COVID-19. Surgical-site infections rates did not increase as fewer elective surgeries were performed, largely in operating rooms with uninterrupted infection control processes that were separate from COVID wards. In addition, no increase was found in Clostridioides Difficile, or C. diff, a serious bacterial infection that occurs after antibiotic use. The study said lower rates of C. diff may be a result of increased focus on hand hygiene, environmental cleaning, patient isolation, and use of personal protective equipment.

"Basic infection control practices must be hardwired into practice so that they are less vulnerable when the health care system is stressed," the editorial concluded, "One approach might be to designate clinical staff to be added to the hospital epidemiology team to allow for rapid expansion of effort to support a pandemic response."

More information: Tara N. Palmore, David K. Henderson.