Experiences of nurses responding to the COVID-19 outbreak at a long-term care hospital in Korea: A qualitative study
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Background: The COVID-19 pandemic revealed the fundamental vulnerability of long-term care hospitals (LTCFs) related to infection control and prevention (ICP). We examined the experiences of nurses who worked at a hospital where a COVID-19 outbreak occurred from February 24 to March 16, 2021. Method: This qualitative research was performed with 9 nurses who were engaged during the COVID-19 outbreak. We prepared a semi-structured questionnaire based on the main question, “How was the experience among the nurses during the outbreak, and what difficulties did they encounter while resolving the situation?” The data were collected through in-depth, individual interviews from May to August 2021 after the approval of the institutional review board, and the results were analyzed thematically.

Results: The average age of the participants was 52.1 years, and they had an average of 15.2 years of clinical experience. We extracted 4 themes and 16 subthemes from the results. The first theme, “sudden onset of the outbreak,” included the following subthemes: (1) found myself accustomed to COVID-19 and desensitized; (2) unavoidable occurrence despite compliance with ICP guidelines; (3) LTCFs are gradually recognized as a breeding ground for COVID-19 by the public; and (4) fear of spreading the infection in the hospital and of becoming a spreader. The second theme, “heavier workload,” included (1) daily overtime and extra shifts in violation of self-quarantine recommendations due to the shortage of nurses; (2) a barrage of phone calls from family members, other departments, public health centers, and hospitals where confirmed cases were transferred; (3) nursing assistants and private caregivers who do not have ICP knowledge as well as patients who do not cooperate due to cognitive impairment; and (4) accomplishing additional tasks while wearing personal protective equipment with some suffocation. The third theme, “emotions and lessons,” included (1) unsatisfied with the initial responses; (2) awareness of the entire infectious disease; (3) increased compassion and attachment for patients; and (4) take pride in the job and the profession as a nurse. The fourth theme, “necessary support and attention,” included (1) need to install isolation rooms and replenish infection control supplies; (2) need for ICP specialists in LTCFs; (3) need for continuous national-based monitoring on ICP for LTCFs; and (4) need to improve working environment and acknowledge nurses in LTCHs. Conclusions: Overall, participants expressed their experiences with the insufficient infection control and response system toward COVID-19 in the LTCH. To enhance ICP in LTCFs, customized policies, regulations, and financial support for infection control activities and ICP professionals must be established.

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Pseudomonas aeruginosa bacteremia mortality and resistance trends in the Veterans’ Health Administration (VHA) system
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Background: Pseudomonas aeruginosa is an important pathogen in the hospital setting; it has the ability to cause severe disease and a high mortality rate. Its increasing ability to elude even novel antimicrobial mechanisms of action is a significant cause for concern. More effective treatment options and increasing understanding of this pathogen likely effect P. aeruginosa incidence and severity; however, longer-term studies are lacking. The Veterans’ Health Administration (VHA) population is a socially, demographically, and medically distinct entity, representing a rich source of data for studying contributing factors to P. aeruginosa infection and mortality. We sought to identify the system-wide case count and mortality rate of P. aeruginosa bacteremia and the rate of resistance to antipseudomonal agents over the course of several years. We described trends observed over the study period.

Methods: We utilized the nationwide VHA database to identify all inpatients with a positive blood culture for P. aeruginosa treated between January 1, 2009, and December 31, 2020. We identified the annual count of bacteremia cases and associated 30-day mortality rate.
Additionally, we determined rates of resistance to antipseudomonal agents. **Results:** In total, 7,480 cases of *P. aeruginosa* bacteremia were identified. The total case count of *P. aeruginosa* bacteremia decreased from 774 in 2009 to 519 in 2014, then remained relatively stable. The 30-day mortality rate decreased from 26.5 in 2009 to 19.3 in 2019, but this rate increased to 23.6 in 2020 (Fig. 1). The fluoroquinolone class had the highest resistance rate at 23%, followed by ceftazidime, cefepime, and the carbapenem class with rates of ~15%–16%. All classes were noted to have decreased resistance over time (Fig. 2).

**Conclusions:** Occurrences, mortality rate, and associated resistance of *P. aeruginosa* bacteremia across the VHA system generally decreased during the study period. Potential explanations for these observations include improved infection control measures, more effective therapeutic agents, and enhanced antimicrobial stewardship efforts. The increased mortality in 2020 could be related to concomitant COVID-19 or the result of delayed medical care in the pandemic setting. Limitations of this study include inability to identify causative factors for observed trends and potential variability between labs affecting the rates of observed resistance. Additionally, VHA data may not be representative of entire adult population. Future studies could explore the relationship between *P. aeruginosa* bacteremia and infection prevention and antimicrobial stewardship efforts and could describe associations between *P. aeruginosa* and COVID-19 and identify risk factors associated with *P. aeruginosa* bacteremia and mortality.

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