Health Policy Impact on Healthcare-Associated Infections and Nurses' Responsibilities for Professional Awareness and Engagement

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Article

Abstract

A significant public health concern is healthcare-associated infections (HAIs) prevalent in hospitals, nursing homes, and outpatient treatment centers. HAIs threaten staff and patient safety. Reducing and eliminating HAIs can save lives and reduce healthcare costs. Legislators and healthcare professionals are significant in developing health policies to reduce HAIs and improve patient care quality. Policies combat this problem by establishing mandatory surveillance programs funded by the state and federal governments. Health policy also governs HAIs through payment systems to encourage best practices for preventing HAIs. Various methods are used to determine if outcomes, e.g., lower rates of infections, are attributable to the policies. Nurses play a vital role in shaping health policy through professional awareness, research, leadership, and engagement.

Key Words: Healthcare-associated infections, Health policy, Infection control policy, Bloodstream Infections, Hospital-acquired infections, Infection prevention and control, and nursing, sepsis, antimicrobial resistance, policymaking

While preventable and costly, healthcare-associated infections (HAIs) are prevalent in acute care hospitals, nursing homes, specialized home care, and outpatient treatment centers (e.g., hemodialysis centers). The Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), regulatory agencies, and researchers have similar but varying definitions of healthcare-associated infections (<u>Cardoso et al., 2014</u>). For example, the National Healthcare Safety Network (NHSN) at the CDC defines healthcare-associated infections as "a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or their toxin(s) that was not present on admission to the acute care facility" (CDC, 2013, p. 17-1). State statutes, such as North Carolina Administrative Code 10A NCAC 41A.0106, define HAIs because they are acquired due to healthcare exposure. A cadre of agencies, organizations, and individual health professionals (nurses, physicians, and others) have as the focus of their mission and quality initiatives to eliminate infections, particularly HAIs. Public policy has a significant role to play in these efforts to reduce and eliminate HAIs. This article aims to discuss legislation governing healthcare-associated infections and one health profession's (nursing) responsibility for professional awareness and engagement in health policy to reduce HAIs and, thus, improve patient care quality.

Background and Significance

Florence Nightingale was the first nurse to write about and provide infection prevention interventions (Nightingale, 1969). More recently, policymakers have focused on preventable infections as far back as the 1950s and 1960s (Dixon, 2011; Stone et al., 2015). For example, an

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epidemic of penicillin-resistant *Staphylococcus aureus* infections in the 1950s drew attention to the need to prevent what is now known as healthcare-associated infections, which initially focused on hospital-acquired infections (Dixon, 2011). Healthcare-associated infections significantly threaten staff and patient safety in healthcare environments. However, despite literature and healthcare statistics detailing the troublesome effects of healthcare-associated infections, these remain a major public health concern (Raveis et al., 2014; Magill et al., 2018). As a result, national objectives to reduce HAI have been established as a public health concern.

Furthermore, collaborative efforts between state and federal agencies have prevented HAI in the United States. According to the CDC, between 2019 and 2020, the nation had fewer healthcare-associated Clostridioides difficile (C. diff) infections and surgical site infections (SSI). Unfortunately, during that same period, ventilator-associated events (VAE), central lineassociated bloodstream infections (CLABSI), and methicillin-resistant Staphylococcus aureus (MRSA) had higher rates (CDC, 2021b). Thus, the HAI problem persists as a contributor to high morbidity and mortality and excessive healthcare costs (Danna, 2018; Forrester et al., 2021; Magill et al., 2018). Furthermore, given the prevalence and impact of healthcare-associated infections, this issue remains a priority for healthcare epidemiologists, infection preventionists, the CDC, and health professionals such as nurses (Srinivasan et al., 2012).

The Prevalence of Healthcare-Associated Infections

The prevalence of healthcare-associated infections differs depending on the definition of healthcare-associated infections. Healthcare-associated infections are the most frequent untoward event in healthcare delivery worldwide, resulting in approximately 1.7 million patients worldwide being affected by healthcare-associated infections (Haque et al., 2018) and half a million in the U.S. annually (Healthy People 2030, n.d.a). In the U.S., the CDC estimates that one in every 31 patients experiences an HAI (CDC, 2021b). Healthcare-associated infections in acute care hospitals have resulted in approximately 75,000 deaths annually (Hsu, 2015). Catheter-associated urinary tract infections, surgical site infections, central-line-associated bloodstream infections, and ventilation-associated pneumonia are the most frequent healthcare-associated infections (Healthy People 2020, 2022a). Therefore, high infection rates are associated with invasive devices, including central lines, urinary catheters, and ventilators. Given the worldwide impact of healthcare-associated infections, political factors of allocations, self-determination, and state practice laws impact the policy solutions that affect healthcare-associated infections. Those solutions deserve regular consideration to have an impact on eradicating as many of these infections as possible. More empirical research is needed that examines the effectiveness of specific laws and policies.

Political Factors Affecting Healthcare-Associated Infections

Healthcare providers and policymakers have been cognizant that healthcare-associated infections represent a public health crisis in the U.S. (Braun et al., 2020). Clinical studies have informed policymakers and legislators about the high burden of healthcare-associated infections. In episodic ways, strong political commitment has been shown at the federal, state, and local levels. One example is the launching of mandatory surveillance programs targeting infections nationwide. Not only is monitoring made compulsory, but the laws provide the infrastructure and funding for agencies to support the programs. The United States is a frontrunner in using politics to combat a problem of this magnitude, as evidenced by the implementation of standardized approaches in hospitals and outpatient care facilities. As a component of the mandatory surveillance program, data generated through the CDC's National Healthcare Safety Network, a tracking system, is being used to guide and monitor prevention strategies to improve patient safety (CDC, 2024a; Stone et al., 2015). The U.S. Department of Health and Human Services (DHHS) Office of Infectious Disease has worked with numerous agencies and organizations to develop and enact the *National Action Plan to Prevent Health Care-Associated Infections: Roadmap to* Elimination (HAI National Action Plan) in 2009, with updates in 2013 and 2018. Current efforts are establishing new indicator targets and data, the latest research and intervention efforts, and the impact of COVID-19 on HAI (DHHS, 2022).

Health Policies Governing Healthcare-Associated Infections

In the past decade, federal payment systems through the Centers for Medicare and Medicaid (CMS) enacted legislation to motivate providers to reduce infections. CMS has established regulations for financial incentives and disincentives as options to improve healthcare-associated Clinical studies have informed policymakers and legislators about the high burden of healthcare-associated infections.

infection rates (Kawai et al., 2015; Ramanathan, 2014; Stone et al., 2015). The Shared Savings program includes the Quality Payment Program, the Merit-based Incentive Payment System (MIPS), and the Alternative Payment Models. These were enacted through Public Laws in 2010 and 2011, with annual updates for physician fee schedules and performance goals. Performance-based incentives and value-based programs are considered one of the most effective ways to improve health. but the level of effectiveness is still not fully understood (Stone et al., 2015). Providers who meet quality standards receive additional payments. As a disincentive, in the U.S., healthcare-associated infections often are not reimbursable by insurance (Hoff et al., 2011; Kawai et al., 2015). Traditionally, hospitals and healthcare agencies incur much of the cost of healthcareassociated infections (<u>Magill et al., 2018</u>; <u>Zimlichman et al., 2013</u>). This changed during the COVID-19 pandemic when hospitals were reimbursed for the infections in part by congressional actions. In addition, CMS changed regulations for the quality payment program due to the public health emergency. The continuation of these actions is not clear as of April 2022.

Additionally, laws enacted to prevent and reduce healthcare-associated infections have arisen and extended to many states since 2004 (CDC, 2024b; Ramanathan & Penn, 2012; Stone et al., 2015). The laws define the infections and the facilities that the state laws cover. These laws address requirements for state health departments, healthcare facilities, and healthcare providers to encourage best practices in healthcare-associated infection prevention. Furthermore, these laws address state health agency authority and the establishment of healthcare-associated infection advisory councils. The laws have established reporting requirements for facilities to state agencies. Under the state administrative codes, facilities are provided explanations about licensing and training requirements for personnel's delivery, evaluation, and reporting of care. Finally, the laws clarify how users with access to surveillance data protect patients' health information and rights. However, as of June 2021, only 37 states had laws requiring HAI reports to the NHSN (CDC, 2021c), and only 38 states have an HAI legislatively approved plan.

The coordination of state statutory laws and federal incentives has created an environment to encourage and allow collaboration among and between providers, facilities, and health departments to decrease the occurrence and cost of healthcare-associated infections in most states (CDC, 2024a; Kawai et al., 2015; Stone et al., 2015). For example, C. diff can be community-onset or healthcare-associated. Reporting systems and prevention efforts, including patient education, antibiotic usage, and isolation protocols, have decreased C. diff among hospitalized patients. CDC guidance provides general guidelines to direct facility infection control activities and train staff in infection control policy. Additionally, federal and state laws often include allocating funds to sustain efforts to reduce the rate of infections.

From the standpoint of healthcare-associated infections, under the Affordable Care Act of 2010, hospitals began to be penalized for occurrences of healthcare-associated infections. The Affordable Care Act includes a description of the penalties to hospitals for occurrences of healthcare-associated infections. Moreover, PL 111-5, 42 U.S.C 241(a), the American Reinvestment and Recovery Act, allocated \$40 million to health departments to help prevent healthcare-associated infections. Furthermore, the American Rescue Plan Act of 2021 (P.L. 117-2) included ways to combat the COVID-19 virus, which included Personal Protective Equipment (PPE), vaccine development and distribution, and infrastructure plans with states and territories (U.S. Congress, 2021). Additionally, federal policies and agency regulations provide HAI targets and metrics. For example, DHHS's Office of Infection Disease released metrics and a progress report on the National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination (HAI Action Plan). The HAI report provides targets for 2020 and progress in acute care hospitals for 2015–2019 (DHHS, 2024). State laws often follow Federal laws and regulations to reinforce actions at the state and local levels and to ensure and provide for allocation, auspices of responsibility, and surveillance. Following are examples of laws that are provided for HAI action.

Examples of State Laws that Regulate Surveillance and Reporting

State laws consist of many topics related to HAI. One topic is a list of conditions such as HAI, which may include both HAI and community-acquired infections. These lists differ among states, but all have the consideration of public health. A second topic is that conditions identified among patients (or employees) must be responded to within a specified time. For example, hepatitis is one such infection. Third, many states identify which agencies must maintain the information and how data is obtained and stored. Human immunodeficiency virus (HIV) and other sexually transmitted infections (STIs) were the original traced and monitored infections. A fourth topic in many state laws and regulations is patient and employee protections in healthcare workplaces. Patient Rights bills include the provision of competent care and privacy. Employee laws and regulations extend to workplace requirements related to influenza. For example, many agencies require annual flu shots for employees. Finally, policies and procedures for using personal protective equipment are part of accreditation standards and Occupational Safety and Health Administration (OSHA) guidelines. Thus, policies can prevent this high economic and life cost.

For example, state legislation in North Carolina is Session Law 2011-386 House Bill 809 Healthcare-associated Infections; Statewide Surveillance and Reporting System Approved 6/27/2011, and 10A NCAC 41A .0101 Reportable Diseases and Conditions. Under NC laws, hospitals must electronically report healthcare-associated infections through NHSN and make data available to the DHHS. Furthermore, Connecticut state law established an HAI advisory committee in 2009, adding metrics and settings covered for HAI with more recent updates in 2014 and 2015 laws. Wyoming state law in the 2015 edition focuses on acute care hospitals and two infections—*C. diff* and MRSA. In addition to naming a state coordinator, the Wyoming Infection Prevention Advisor Group was formed. Texas recently started its formally legislated HAI plan in 2020,

requiring hospital and surgical centers to report HAI to the CMS. An HAI coordinator is required, and antibiotic stewardship will be monitored. The question is, "Are these laws impacting the reduction of infections in healthcare settings?" Different evaluations can measure the impact of health policy on healthcare-associated infections after policy implementation.

Healthcare-Associated Infection Policy Evaluation

Healthcare-associated infections represent benchmarks for hospital and healthcare service quality (Hasan et al., 2017). Policymakers and payors have included patient care outcomes as metrics across various healthcare settings. Multiple methods are used to determine if outcomes are attributable to the policies. The primary healthcare-associated infection outcome is lower rates of infections for specified types. Evaluation of healthcare-associated infections typically involves rate changes. Also, targets are set, though not always met, so that improvements may be seen in infection rates. Often, the data are clinically significant, if not statistically significant. The NHSN has provided more sustainable and standardized nationwide surveillance for HAIs. The number of reporting states, hospitals, and other healthcare settings has increased exponentially since the 2009 federal mandate for surveillance. Some healthcare-associated infections have been reduced since 2011–2015 and 2015–2019. Most areas now have standardized education and training with CDC and OSHA guidelines as the foundational content. OHSA training is explicitly required annually by all employees in most healthcare settings, especially those treating Medicaid and Medicare patients. Finally, research has tested the efficacy and effectiveness of prevention efforts. For example, central line infections were very high in one medical center. A physician scholar, Peter Pronovost, developed a checklist to prevent catheter-related bloodstream infections. The infection decrease was over 90%, and he disseminates his compelling findings across disciplines, healthcare settings, and geographic regions. Currently, he serves on the subcommittee of the National Advisory Council on HealthCare Quality Measurement (Agency for Healthcare Research and Quality [AHRQ], 2022).

Evaluating effectiveness focuses on monitoring, measuring, and tracking policy outcomes over time. The CDC created the National Healthcare Safety Network to assist administrators and policymakers in planning, monitoring, and evaluating the success of the policies and programs. Additionally, individual states, health care systems, accountable care organizations, independent practices, and health professionals can improve HAI.

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The Standardized Infection Ratio is one key measure to determine healthcare-associated infection progress (Soe et al., 2015). Certain infections are selected to provide an overview of how a hospital or state prevents healthcare-associated infections. The standardized infection ratio examines five healthcare-associated infection measures but does not represent all infections. The

five measures that are used as an overview of how hospitals are doing are central line-associated bloodstream infections, catheter-associated urinary tract infections, surgical site infections (hysterectomy and colon surgery), MRSA bloodstream infections, and C. diff infections (Healthy People 2020, 2022b). For these measures, the Standardized Infection Ratios (SIRs) are presented. Data tables and figures show whether a state hospital had more healthcare-associated infections, fewer healthcare-associated infections, or about the same as the national average based on the previous year. SIRs adjust for types of patients and procedures, hospital size, and affiliation with a medical school. The baseline is the predicted value of the national experience for each healthcare-associated infection. Rather than showing how a hospital prevents healthcare-associated infections, SIRs show how the state performs during a single year and compare the performance to a national average or baseline. Healthy People 2020 and 2030 use SIRs to track progress on reducing healthcare-associated infections.

Healthcare-Associated Infections and Healthy People 2020 and 2030

HAIs are included in the Healthy People 2020 (HP2020) and Healthy People 2030 (HP2030). The two HP2020 objectives related to healthcare-associated infections were (a) to reduce central line-associated bloodstream infections (CLABSI) and (b) to reduce facility-onset or hospital-acquired MRSA infections. There was a slight decrease in these two objectives, but the goals were not met, according to data from 2018. For example, Healthy People 2020 (2022a) estimates that MRSA healthcare-associated infections baseline was 27.08 per 100,000 persons in 2007–2008. Therefore, the target is 6.56 infections per 100,000 or a 75% reduction. This target is consistent with the DHHS Action Plan to Prevent Healthcare-Associated Infection goals and their commitment to preventing healthcare-associated infections (CDC, 2024). However, the target was not met by 2014, with 17.3 infections per 100,000 persons. Reducing the incidence of central line-associated bloodstream infections and invasive MRSA infections are two areas of the Healthy People 2020 measures that have improved, but the targets have not been met.

HP2030 objectives focus on reducing *C. diff* infections that people contract during hospitalizations. As of 2019, the goal of reducing hospital-acquired *C. diff* infections was met or exceeded (<u>Healthy People 2030, n.d.a</u>; <u>n.d.b</u>). However, the objective of lowering hospital-acquired MRSA in bloodstream infections—while improving—was not met (<u>Healthy People 2020, 2022b</u>).

Additionally, HP2030 now only considers two of the original five infections for targeting. This difference may be related to mortality and morbidity costs in acute care settings. However, the CDC and NHSN continue to work with states to prevent all types of HAI across settings and populations.

Many of the efforts to reduce healthcare-associated infections focus on acute care settings. In the past few years at the CDC, the focus on prevention has shifted to outpatient settings, like ambulatory surgical centers, dialysis centers, and long-term care facilities. Surveillance and research over the last decade show that substantial progress has been made in preventing specific healthcare-associated infections. For example, NHSN's assessment of national progress toward the 5-year DHHS action plan goals showed significant decreases in device- and procedure-associated infections and healthcare-associated invasive MRSA compared to the baseline in 2015. However, the target for CLABSI, hospital-acquired MRSA infections, has not been met. More time is needed to conclude that the policies effectively meet the goals.

Nursing Actions to Reduce and Eliminate HAI

Nursing can play a vital role in shaping health policy through professional awareness, research, leadership, and engagement. However, additional interventions, programs, research, education, and surveillance will be needed to make progress toward further decreasing and eliminating healthcare-associated infections. Progress has been made towards eliminating healthcare-associated infections, but more work is required to sustain healthcare-associated infection prevention programs.

Multiple layers of responsibility challenge nursing and provide opportunities. First, nurses must be aware of HAI issues and best practices for intervention and surveillance. This might include planning and attending conferences where HAI experts like Peter Pronovost discuss research and evidence-based effectiveness approaches. Nurses can read nursing and healthcare journals to ensure the most up-to-date information is available to provide patient care across settings and

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populations. Finally, nurses can ensure that the National Action Plans and CDC HAI toolkits are available in the agencies, are reflected in policies and procedures, and include staff training.

Cutting-edge research needs to be conducted, continuing the legacy of Dr. Elaine Larson and decades of infection control research (Shang et al., 2019). That work has resulted in different nursing practices in the acute care setting. One of Dr. Larson's protégés, Dr. Patricia Stone, identified the policy implications of their work following in the footsteps of Larson's research (Harrison et al., 2021). Their research is focused on the policy implications of their work. That work influenced federally mandated reporting of hospital infections and CMS final rule 483, which requires nursing homes to employ a specialist in infection prevention. Research by Shang et al. (2019) reports how nurse staffing is related to HAIs, which provides a foundation for nurse and hospital administrators' decisions. Similarly, home health infection trend research provides practice, staffing, and administrative insight to prevent HAI (<u>Harrison et al., 2021</u>). More recently, research on infection control in the acute care setting focused on the COVID-19 pandemic provides a new foundation for infection control prevention (Alah et al., <u>2022</u>).

Nurse Leadership

Nurses can serve in leadership positions that communicate the importance of and strategies for HAI prevention. For example, Dr. Stone served as the editor of the Association for Professionals in Infection Control and Epidemiology journal. Nurses can also serve as state legislators. For example, nurse practitioner Gale Adcock in the North Carolina House of Representatives allows emphasis on and inclusion of HAI policies and funding in statutes, regulations, and budgets. Membership on important panels like the National Quality Forum and the NHSN, state level, and local committees will allow nurses to showcase and learn about efforts and resources to combat not only HAI but the negative impact caused by HAI, including loss of life, function, and recidivism.

Local hospitals can utilize organizations' resources, such as the Comprehensive Unit-based Safety Program (CUSP), which empowers infection control nurses to assist their clinical teams in keeping patients safer. Since the enactment of healthcareassociated infection monitoring, progress has been made. However, the work is far from over. Control and prevention of healthcare-associated infections in hospitals and other healthcare facilities can be achieved when clinical nurses and care teams become aware of infection as a problem. Armed with this awareness, clinical nurses can reduce healthcare-associated infection rates by implementing infection control measures explained in the regulations, such as Session Law 2011-99 HB 474, also known as the Act to Protect Adult Care Home Residents.

What are the roles of clinical care and infection control nurses in shaping health policy? Both clinical and infection control nurses can share their valuable ideas and must get involved no matter what level they are in their careers. Nursing is the largest profession in healthcare. Therefore, those in the nursing profession have incredible power to impact the healthcare system. Infection control nurses can make a difference by becoming active participants who help shape the future of

healthcare policy by implementing the guidelines, particularly those concerned with maintaining infection control competencies, as described by Sessions Law 2011-99 HB 474. This bill also speaks to home care nurses involved in caring for patients with infections, who can write policies that help eliminate infections. The nurses working in the facilities can be the designated staff who learn the guidelines and train fellow staff members regarding the infection control policies. A career in nursing enables nurses to function as frontline clinical nurses, educators, patient advocates, and participants in the political process affecting patients with infections.

Clinical nurses are in an excellent position to observe systems issues, even though they may not know the source of the problems. Clinical nurses can equip patients at risk or afflicted with infections to make decisions. Regarding healthcare-associated infections, nurses should consider what kind of information allows patients to participate fully in their care and share information with patients and their family members. The nurse can consider what the policy says and means at the bedside, in the community, and to patients encountered in practice. As a large professional group member, clinical nurses should leverage their collective power to effect change. Clinical nurses can volunteer to address the issues, like reducing healthcare-associated infections within their institutions and ensuring that preventive and surveillance actions, policies, and procedures are best practices. Furthermore, nurses can become part of state or national associations, like the American Nurses Association, which partners with organizations like the Association for Professionals in Infection Control and Epidemiology (APIC).

Nurse Advocacy

In the advocate role, nurses can examine policies, and even if they do not fully understand policies, they can discuss them in grand rounds, seminars, and quality practice discussions. Nurses can participate in local, state, and national advocacy by voting for elected officials who support policies that reduce and eliminate HAIs. Voting is an integral part of professional responsibility as a healthcare provider.

Registered nurses should tell their stories to lobbyists, who can talk to legislators about why specific legislation to eliminate infections is essential. When nurses speak firsthand about their experiences with infections at the bedside and legislators hear the stories, it can have a powerful effect on voting. The nurse can provide clarity regarding the source of problems in healthcare. Additionally, nurses often have the answer to how infections are being controlled at the bedside and in outpatient facilities. Another way that nurses can affect change is by establishing unit-wide monitoring efforts. For example, clinical nurses can assemble quality teams to assess unit infection rates. When clinical nurses start tracking infections in the hospital units, they can lead in the surveillance and reporting of healthcare-associated infections. These are the provisions set forth by Session Law 2011-386 House Bill 809 Healthcare-associated Infections; Statewide Surveillance and Reporting System Approved 6/27/2011.

Nurses' contributions can help patients in the interrelated areas of payments, procedures, safety, quality, and infection control to ensure consistency across areas and reduce HAIs. Health policy and politics work together. Funding on the federal level affects everyone who is practicing.

In federal, state, and local governments, the budget document is a policy document, and funding may get cut for different foci, such as healthcare-associated infections. At the state level, executive budgets can be examined to see the proposals of the governors' budgets. By assessing the budget, nurses can know what programs will receive fund allocations, which can affect a program's sustainability. For example, nurses as legislators, expert witnesses, consultants to policymakers, and researchers impact policy and practice for HAI reduction. Nurses are involved, as noted in the examples above. However, greater engagement is required to ensure nursing practice outcomes are measured appropriately, documented for effectiveness, and targeted to decrease mortality and morbidity.

Conclusion

Federal, state, and local policymakers have been working collaboratively to enact laws and policies to reduce healthcare-associated infections by providing infrastructure and funding for programs like mandatory reporting (Stone et al., 2015). Clinical nurses and other healthcare professionals are vital in implementing laws and policies designed to reduce healthcare-associated infections. State health departments, healthcare facilities, and providers implement the laws governing reporting requirements. Additionally, the results of original research and data from the National Healthcare Safety Network can be used to determine whether policies are having an impact. Although most targets have not been met, progress has been made, as nurses and other healthcare professionals have joined the fight. As a result, healthcare teams are better equipped to eliminate these common but serious conditions through education, research, and practice.

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