PREVENTION STRATEGIST

A PUBLICATION OF THE ASSOCIATION FOR PROFESSIONALS IN INFECTION CONTROL AND EPIDEMIOLOGY

REDUCING THE RISK OF INFECTION

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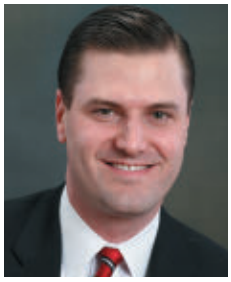
ceo's *message*



Devin Jopp
APIC CEO

Driving IPC Transformation in Long-term Care

Recently, you may have read about APIC's advocacy campaign that posed the question, why do nursing homes have lower standards than hospitals when it comes to protecting patients?[1] This advocacy campaign specifically calls for:

1) Requiring at least one full-time dedicated infection preventionist (IP) in a nursing home;
2) Providing more funds to nursing home surveyors and providing them with standardized training in infection prevention and control (IPC);
3) Requiring routine, transparent, healthcare-associated infection (HAI) surveillance in nursing homes;
4) Ensuring federally funded HAI training is led by certified, qualified IPC personnel.

The genesis for this campaign came in the wake of the COVID-19 pandemic tragedy in nursing homes, where, according to the Kaiser Family Foundation, more than 200,000 residents and staff died from COVID-19.[2] However, as devastating as the pandemic was on nursing homes, the reality is that today we have no accurate method to capture the number of HAIs in these facilities, with estimates ranging from 1.6 million to 3.8 million HAIs per year.[3] Despite these sobering statistics, there remains a startling lack of progress in bolstering IPC efforts in these facilities.

In addition to the recent advocacy campaign, APIC, CBIC, and APIC Consulting have mobilized to not only bring attention to the urgent need for enhancing IPC infrastructure in nursing homes, but to develop new programs and resources to ensure that IPs are leading the way to improve IPC outcomes in nursing homes.

Highlighting some of these efforts, CBIC launched the first ever certification for long-term care IPs, called the LTC-CIP, and soon afterward, APIC launched a new prep course to help prepare IPs to sit for the new exam.

Additionally, APIC recently announced the launch of a new set of courses in partnership with Argentum, the leading trade association for assisted living facilities, aimed at training frontline workers on IPC basics. During this same time, APIC also partnered with AHCA/NCAL, the primary association for nursing homes, on building an online IP forum and conducting quality improvement projects in 12 states.

The speed at which we have developed these new programs and resources has been amazing, and we owe a tremendous debt to the incredible volunteers and staff who worked tirelessly to bring these programs to life.

We know that today, many nursing homes assign infection prevention duties to the director of nursing in these facilities, who juggles a myriad of other responsibilities. This leads to infection prevention not getting the attention it deserves or needs.

Compounding matters, according to the *Journal of Post-Acute and Long-Term Care Medicine*, "over a 2-year period, greater than one-half of all nursing homes in the United States received at least 1 regulatory citation for infection control practices, with 31 states citing 50% or more of their facilities."[4]

While we're mobilizing for change in IPC staffing and systems in long-term care facilities, I do want to pause and thank all of our IPs who are serving in long-term care facilities today. Thank you so much for all that you do to keep our residents and staff safe in these facilities. I also want to thank our IPs working in public health departments for their immense support. A growing number of states are funding training programs for IPs practicing in long-term care and also supporting IPC essentials training for frontline workers in these facilities.

We have much work ahead of us to help build sustainable IPC infrastructure and staffing in long-term care facilities, and it will take all of us to work together to make this change a reality. The health and safety of our loved ones are in our collective hands, and we are committed to the role of change makers in these facilities.

Devin Jopp, EdD, MS
APIC CEO

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MISSION
Founded in 1972, the Association for Professionals in Infection Control and Epidemiology (APIC) is the leading association for infection preventionists and epidemiologists. With more than 15,000 members, APIC advances the science and practice of infection prevention and control. APIC carries out its mission through research, advocacy, and patient safety; education, credentialing, and certification; and fostering development of the infection prevention and control workforce of the future. Together with our members and partners, we are working toward a safer world through the prevention of infection.

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Elaine Larson, RN, PhD, CIC, FAPIC
2023 CBIC President

The Future of CBIC Certification

The APIC 2023 conference in Orlando was a time for infection prevention and control professionals to network with peers, earn continuing education credits, and get inspired by the energizing keynote speakers. Being in person gave CBIC the opportunity to speak with many of you to learn how we can better serve our current and prospective certificants. The CBIC board of directors had several pages of action items by the end of our board meeting, and we are excited to continue our work implementing our strategic plan. After celebrating 40 years of CBIC certification this year, "what's next for certification?" was a common question we received.

Creating clear and accessible pathways for those working in infection prevention is a top priority to CBIC. There was much discussion on the alignment of certification opportunities along career path progression from novice to mid-career to expert. As CBIC has developed both an entry-level and a long-term care certification over the last several years, developing a certification for advanced professionals in infection prevention and control is CBIC's next initiative.

The APIC competency model is guiding the work of a newly created task force that is kicking off a practice analysis later this month, resulting in a portfolio-based assessment. A practice analysis, also known as a job analysis or task analysis, is an important process used in various fields to gather detailed information about a specific job or role within an organization. This process ensures that the assessment will meet validity requirements to accurately measure a candidate's advanced level and will result in a scoring model designed to ensure fairness. Additional information will be available as we continue to develop this new certification over the next year.

As we look to the future of CBIC certification, we are especially excited to (a) explore how certification can be made even more affordable and accessible to more infection prevention and control professionals, and (b) recognize those who have been in the field and developed expert competence beyond the basics by developing the advanced certification process.

Elaine Larson, RN, PhD, CIC, FAPIC
2023 President Certification Board of Infection Control and Epidemiology

> "Creating clear and accessible pathways for those working in infection prevention is of top priority to CBIC.

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2023 Fellows of APIC

The APIC Fellows program recognizes exemplary APIC members with status as a Fellow of the Association for Professionals in Infection Control and Epidemiology (FAPIC). FAPIC status is a distinction of honor for infection preventionists who are not only advanced practitioners of infection prevention practice, but also leaders within the field. Congratulations to the 31 new APIC Fellows selected in 2023 listed below! The 2024 application period will open February 5, 2024, and will close on April 19, 2024. Visit **https://apic.org/professional-practice/apic-fellows/** for more information.

Tamasin Adams, MPH, CIC, FAPIC
Mayar Al Mohajer, MD, MBA, CAQ, CIC, FAPIC
Lucy Austin, MSN, CIC, FAPIC
Jean Barth, MPH, RN, CIC, FAPIC
Jeffrey Chludzinski, MPH, CIC, MB(ASCP)CM, FAPIC
Mamta Desai, MPH, MBA, CIC, FAPIC
Shay Drummond, MPH-EH, BSN, RN, CIC, FAPIC
Josephine Fox, MPH, RN, CIC, FAPIC
Mabel Frias, MPH, CIC, FAPIC
Paul Gentile, MPH, CIC, FAPIC
Ivan Gowe, MS, MLS(ASCP)CM, CIC, FAPIC
Tammy Hale, MSN, RN, CIC, FAPIC
Hillary Hei, MPH, CIC, FAPIC
Lita Henman, MPH, CIC, FAPIC
Lou Hilken, RN, MN, CIC, FAPIC
Lydia Jenkins, RN, MSN, CIC, FAPIC
Carolyn Kiefer, RN, MSN, CIC, FAPIC
Bryan Knepper, MPH, CIC, FAPIC
Sophie Labrecque, MS, CIC, FAPIC
Tabrikah Mohammed, RN, MSc, CIC, CPHQ, FAPIC
Lindsay Montoya, MPH, CIC, FAPIC
Caroline Persson, MPA, MPH, CIC, FAPIC
Saskia Popescu, PhD, MPH, MA, CIC, FAPIC
Alison Prati, MHS, CIC, FAPIC
DJ Shannon, MPH, CIC, VA-BC, FAPIC
Seema Singh, MPH, CIC, FAPIC
Michelle Swetky, MPH, CIC, FAPIC
Jessica Tarabay, MPH, MHR, CIC, FAPIC
Shaunte Walton, MS, MB(ASCP), CIC, FAPIC
Calvin White, MPH, CIC, FAPIC
Marie Wilson, MSN, RN, CIC, FAPIC

Celebrate the FUNdamentals of Infection Prevention During IIPW 2023

It's time to get back to the basics! This year, we highlight and celebrate the building blocks that make up infection prevention and control. During International Infection Prevention Week (IIPW) 2023, each day of the week will be themed around a specific FUNdamental of infection prevention. There will be games, sharable content, social media posts, and more!

Sunday's theme will be Hand Hygiene, which correlates to Global Handwashing Day. Monday will be Cleaning and Disinfection celebration day. Tuesday we will discuss Vaccination. Wednesday will be dedicated to PPE. Thursday will be Respiratory Etiquette themed. Friday will cover Injection Safety.

The APIC Communications Committee has been hard at work developing easy-to-implement programming and tools for IPs to share with their colleagues and facilities. We hope you'll be able to join us on social media during IIPW using #IIPW2023 and #IIPW.

Keep an eye out for updates in eNews and on the Infection Prevention and You website: **infectionpreventionandyou.org**.

Meet the 2023 Heroes of Infection Prevention

APIC established the Heroes of Infection Prevention Award in 2006 to recognize infection preventionists who have developed and implemented innovative infection prevention programs. More than 100 individuals and groups have been recognized to date for their exceptional work in reducing healthcare-associated infections. The Heroes program is supported by a grant from BD, an APIC Strategic Partner. Visit the Heroes of Infection Prevention web page, **www.apic.org/About-APIC/Awards/Heroes**, to read full profiles and inspirational stories from the heroes.

Wadha Nasser Al-Marri, BSN, RN
Ahmadi Hospital-Kuwait Oil Company
Ahmadi Governorate, Kuwait
Category: Leadership

APIC's president-elect Tania Bubb and Wadha Nasser Al-Marri.

Partnership-Based Program Reduces VAP

Wadha Nasser Al-Marri, BSN, RN, created and implemented a multi-disciplinary initiative that significantly reduced ventilator-associated pneumonia (VAP) rates in the adult intensive care unit (ICU) of Ahmadi Hospital in Kuwait.

After being appointed chief of infection prevention and control (IPC) at the hospital in 2019, Al-Marri quickly identified ICU VAP reduction as an organizational priority. Following a retrospective analysis of VAP cases—which uncovered root causes and contributing factors—Al-Marri developed an action plan that was then reviewed by the hospital's Infection Prevention and Control Committee (IPCC).

"The IPCC comprises members of our hospital's executive and senior management," Al-Marri said. "Their deliberation of the action plan paved the way for leadership support."

The resulting program relied heavily on partnership to achieve its goals. Al-Marri initiated the development of a VAP prevention care bundle and checklist, involving ICU clinical staff in a comprehensive literature review as well as multiple meetings to review the resulting recommended interventions. The project's multi-disciplinary working group of infection preventionists, ICU medical consultants, nursing administrators, and respiratory therapists then partnered with ICU clinical staff and other healthcare workers to support consistent checklist compliance and provide regular feedback.

"Hospital leaders went the extra mile to participate in clinical rounds with healthcare workers," Al-Marri said. "This motivated the clinical department heads and, in turn, their staff."

Al-Marri worked with the hospital's information management services department to integrate the checklist into electronic medical records, and then gathered feedback to improve user convenience, documentation compliance, and application of the bundle interventions.

In less than two years, the program reduced VAP incidence in Ahmadi Hospital's adult ICU from a baseline of 5.66 per 1,000 ventilator days in 2018 to 0 per 1,000 ventilator days in 2020.

"I attribute the success of this program to the partnership environment we established, which generated a sense of shared goals and responsibilities," Al-Marri said.

Judi Boger, BSN, RN, CIC
St. Elizabeth Healthcare
Florence, Kentucky, USA
Category: Leadership

Championing Collaboration to Sustain *C. Diff* Reductions

Judi Boger, BSN, RN, CIC, successfully engaged stakeholders across the St. Elizabeth Healthcare system to enable a sustained decrease in *Clostridioides difficile* (*C. diff*) rates at the organization.

A previous *C. diff* performance improvement effort had reduced St. Elizabeth's infection rates, but over time they increased again and plateaued. St. Elizabeth's leadership team appointed Boger to lead a second quality improvement (QI) effort, anchored by a multi-disciplinary *C. diff* collaborative that included representatives of pharmacy, nursing, pathology, laboratory, infectious disease, environmental services, information technology, quality, and the St. Elizabeth executive team.

Boger actively championed the collaborative approach, leveraging the expertise of each department to create the structures and systems that would ensure they met their goals and were able to sustain improvements. These included electronic tools and new laboratory procedures to support *C. diff* monitoring and decision making, bedside swarms for every healthcare-associated *C. diff* case, and monthly system-wide *C. diff* collaborative meetings, where innovative ideas are discussed and considered, and every *C. diff* case analyzed.

"Every month, we evaluate cases to assess what we could have done better and determine if there is a need for additional education, or just continue to monitor for trends," Boger said.

APIC's president-elect Tania Bubb and Judi Boger.

Throughout Boger's three-year tenure as the *C. diff* collaborative lead, St. Elizabeth's *C. diff* rates have consistently decreased, with a standardized infection rate (SIR) consistently below 0.7. The healthcare system has surpassed its internal SIR goal of 0.5 and remained under the National Healthcare Safety Network *C. diff* benchmark.

Boger's leadership in keeping the collaborative on task, staying committed to monitoring, and meeting regularly, creating open dialogue among key stakeholders, and consistently sharing lessons learned has enabled the *C. diff* initiative to switch from QI to a sustained maintenance phase.

"Having that collaborative effort around you makes all the difference," Boger said.

Guiding The National Pandemic Response

The APIC COVID-19 Task Force

Terri Rebmann, PhD, RN, CIC, FAPIC, Saint Louis University

Rebecca Alvino, RN, MS, CNS, CIC, CNOR, CRCST, FAPIC, UCSF Health

Pam Falk, MPH, CIC, FSHEA, FAPIC, Pamela S. Falk Consulting

Jill Holdsworth, MS, CIC, FAPIC, NREMT, CRCST, Emory University Hospital Midtown

Kathleen McMullen, MPH, CIC, FAPIC, Mercy Quality and Safety Center

Barbara Smith, MPA, BSN, RN, CIC, FAPIC, Mount Sinai Morningside

Angela Vassallo, MPH, MS, CIC, FAPIC, Angela Vassallo, LLC

Liz Garman, APIC

Silvia Quevedo, APIC (former)

Lisa Tomlinson, APIC

Category: Quality Improvement

The APIC COVID-19 Task Force provided exemplary leadership during the COVID-19 pandemic, helping to shape national infection prevention and control (IPC) policy, and improving pandemic response across the country.

The APIC COVID-19 Task Force with APIC's president-elect Tania Bubb.

APIC has activated task forces to address emerging threats from infectious diseases for more than 20 years. In early spring 2020, APIC staff invited veterans of previous task forces and other experts to participate in a COVID-19-focused effort. The resulting group comprised seven APIC members and three APIC staff with diverse skills and expertise. Meeting once a week, these 10 individuals took on the task of providing timely, evidence-based IPC guidance to America's healthcare and higher education sectors.

"We heard from a lot of APIC members about the lack of clear guidance," task force member Terri Rebmann, PhD, RN, CIC, FAPIC, said. "We tried to distill what infection preventionists really needed to know and show them that everything we did was evidence based."

The group's first major project was surveying APIC members regarding access to personal protective equipment (PPE). Less than 48 hours after their findings were disseminated, the federal government activated the Defense Production Act to prioritize PPE access for U.S. healthcare professionals. Based on findings from a follow-up survey and focus groups later in 2020, the team generated multiple resources to help APIC members respond to the pandemic, including infographics, toolboxes, and the Infection Prevention and Control Acuity Scale, which assists infection preventionists in prioritizing IPC tasks during disasters.

The APIC COVID-19 Task Force's work culminated in a white paper, "Between a Rock and a Hard Place: Recommendations for Balancing Patient Safety and Pandemic Response," which was shared with Congressional leaders and APIC members. The group has continued its work through the APIC Emerging Infectious Diseases Task Force.

"During a time when … self-appointed experts created confusion and insecurity, guidance devised by the APIC COVID-19 Task Force helped COVID response teams … pursue clear-headed, evidence-supported actions that kept our organizations open and safe," said nominator Bob Gagne, chief of staff in the office of the president at Saint Louis University.

Training Program Enhances IP Excellence

Houston IP Leadership—Memorial Hermann Health System

Tawanna McInnis-Cole, DHA, MS, BSN, RN, CIC

Jocelyn Thomas, MPH, CIC, CLSSGB

Valerie Ausborn, MPH, CIC

Category: IPC Operations

The infection prevention leadership team at Memorial Hermann Health System (MHHS) developed an infection prevention and control (IPC) orientation training program that provides a solid foundation for new infection preventionists (IPs) while enhancing health system efficiency, patient safety, and clinical outcomes.

In 2017, Jocelyn Thomas initiated development of a comprehensive, standardized IPC onboarding and training packet with encouragement from Tawanna McInnis-Cole and support from former IPC leaders and staff, including Valerie Ausborn.

"We consistently had IPs who told us they were self-trained," Thomas said. "We wanted to give them the tools necessary to be successful."

After soliciting input from MHHS IPs regarding essential IPC knowledge and skills, the team created the initial packet using the APIC Text as a foundational resource along with current evidence, data, and innovation.

The current packet, which reflects five years of trainee feedback, provides MHHS IPs the opportunity to learn concepts as a beginner and work toward confidently sitting for certification. Through a variety of videos, PowerPoint, and live tools, it helps trainees build IPC skills from simple (e.g., workstation setup) to complex (e.g., data analysis and outbreak investigation) using 30, 60, and 90-day milestone expectations.

APIC president-elect Tania Bubb with Valerie Ausborn.

Trainee and preceptor sign-off is required as each skill and task are presented and learned. Feedback from trainees is encouraged to enhance the orientation experience.

All new MHHS IPC hires complete the majority of the orientation packet before starting call rotation. "I think it helps them feel supported and gives them comfort in their new space and role," Ausborn said. To date, close to 50 IPs have been trained, 10 of whom have been promoted. Additionally, The Joint Commission has requested to place elements of the training packet in their Best Practice Library.

"We are giving our team members the tools to be empowered and successful," McInnis-Cole said.

Bassel Molaeb, MPH, CIC, FAPIC
The Compass Health Consultancy
Dubai, UAE
Category: IPC Operations

Building IPC Capacity in the Middle East

Over the past eight years, Bassel Molaeb, MPH, CIC, FAPIC, created and implemented programs that strengthened infection prevention and control (IPC) training and practices across the Eastern Mediterranean region. In partnership with local institutions and as part of his assignment with the World Health Organization (WHO), Molaeb has led initiatives that tripled the number of certified infection preventionists (IPs) and enhanced IPC capacity in numerous countries.

Shortly after Molaeb was appointed director of infection prevention at Almoosa Specialist Hospital in 2015, he identified a tremendous need for a well-designed, sustainable program that would help IPs attain Certification in Infection Control (CIC). In 2017, he co-founded the first CIC Academy in the region that offered certification preparatory courses based on the APIC CIC exam study program. The academy's outcome-based strategy includes a three-month program comprising class-based training, online study groups, webinars, mock exams, and rewards (reimbursement of the course and exam fees and complimentary APIC membership). Between October 2017 and March 2023, this program increased the number of certified IPs in the region from 80 to 237.

"The CIC Academy has had a great impact on the IPC profession here by highlighting the value of certification, developing new IPC leaders, and creating networks that enable sharing of expertise and knowledge," Molaeb said.

In 2021, Molaeb worked with the WHO Eastern Mediterranean Regional Office to develop the first comprehensive regional IPC training curriculum based on WHO resources. The program provided evidence-based IPC education to support IPs, particularly those working in low-resource settings. In less than two years, the curriculum has helped build IPC capacity by improving knowledge, skills, and performance outcomes in the countries where it was implemented.

"I'm honored that I've been able to apply my passion for training and education to help develop programs that are enhancing patient safety and advancing the IPC field," Molaeb said.

Holly Taylor, MPH, CIC
Ascension Texas
Austin, Texas, USA
Category: Leadership

Strengths, Weaknesses, Opportunities, and Threats: SWOT Analysis of an IPC Program

Holly Taylor, MPH, CIC, spearheaded a quality initiative that reduced healthcare-associated infections (HAIs) across Ascension Texas' 13-hospital network and enabled the organization to maintain critical infection prevention processes during the COVID-19 pandemic.

Taylor joined Ascension Texas as director of infection prevention in September 2019. During her first few months at the organization—and as part of the process to develop a strategic plan for the infection prevention and control (IPC) department—Taylor conducted a SWOT analysis of Ascension's IPC program. The exercise had multiple objectives and benefits, enabling Taylor to quickly assess the culture of the IPC team, seek feedback on the program, and understand perceptions of it. Importantly, the SWOT also helped her prioritize changes within the department to improve HAI performance.

"The organization appreciated the active listening before I started to change things," Taylor said.

Once the SWOT was completed, Taylor identified the two highest priority objectives: Modifying the IPC program structure to implement centralized surveillance and standardizing major components of the IPC workflow across the Ascension network. "We needed to leverage technology better to identify the trends across hospitals that we could fix one time rather than 13 times," Taylor said. Over the next 18 months, Taylor and her team secured leadership buy-in and successfully implemented these changes. These included employing experienced, retiring infection preventionists (IPs) to assist on an as-needed (PRN) basis with specific IPC quality projects, including surveillance.

When the COVID-19 pandemic hit, the newly implemented IPC systems and structure supported two additional objectives: preventing burnout among onsite IPs, and continuing surveillance when they didn't have the bandwidth to do it. Site-based staff were able to focus on the constantly evolving COVID-19 guidance, while the remote team continued HAI surveillance and investigation.

"By giving the IPC team the tools and resources they needed, we were able to maintain our systems and staff even during the toughest COVID times," Taylor said.

APIC president-elect Tania Bubb with Holly Taylor.

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Building the Pipeline:
Advocacy for Accurate Job Codes and Specialized Training Programs

BY LISA TOMLINSON, NANCY HAILPERN, MONICA ALEXANDER, AND RICHARD CAPPARELL

APIC has been working for years now on the need to build the infection prevention and control (IPC) pipeline in the wake of upcoming retirements from the field. Even before the pandemic, APIC Megasurvey data indicated that 65 percent of infection preventionists (IPs) were age 46 or older and 38.5 percent were 56 or older. Further, IPs were reporting a 25 percent vacancy in hospitals. These facts, and the need for more IPs in a wider range of healthcare and non-healthcare settings, necessitate rapid improvement of the route by which IPs enter the field instead of through a secondary pathway from nursing or another medical profession.

Many of you may already have heard about APIC's Academic Pathway Task Force and their efforts to develop a specialized curriculum for the education of IPs, and the creation of model internships for use in the field. Further, efforts by the APIC Professional Development Committee are underway to update and add to career ladders that guide people in reaching their career destination of choice. However, there remains a gap of both awareness of the field and an understanding that IPC is a distinct field that employs individuals with the knowledge, skills, and competencies that are essential in healthcare and increasingly in schools and private businesses as well. Put simply, without broader understanding of the field and documentation of the skills and abilities essential to the role, just about anyone can say they are an IP. However, will they have the skills to successfully carry out the job?

One of the ways individuals and businesses access information about professions for the purpose of recruitment and training, as well as for funding federal job training programs, is through the U.S. Department of Labor (DOL) job classification system known as O*Net. Computerized job matching systems that present career options to students based on their interests, aptitudes, and educational plans draw on this system for information. As part of ensuring that the federal government has accurate and thorough information on the work done by IPs, we are taking steps to advocate for a job code that accurately reflects the work of IPs.

While we continue our advocacy efforts in support of an O*Net code for IPs and to highlight the IPC field and the importance of recruiting new IPs into it, APIC subject matter experts from several standing committees and task forces contributed to an Urban Institute project. The goal of this project is to help inform their submission of a National Occupational Framework for IPs to the DOL. The proposed framework was submitted to the DOL in June 2023.

We are hopeful that DOL will formally approve IPs as a national priority for the healthcare workforce. This will bring much-needed attention to the field of IPC, and we are hopeful that in the future there will be an apprenticeship program for IPs. According to DOL, in 2021 there were 13,882 apprentices in the healthcare industry. We believe APIC can be a key partner in ensuring that IPs have access to such opportunities. PS

Lisa Tomlinson, MA, CAE, is vice president, Government Affairs and Practice Guidance; Nancy Hailpern is director, Regulatory Affairs; Monica Alexander is associate director, Regulatory Affairs; and Richard Capparell is director, Legislative Affairs.

What is a registered apprenticeship?

Registered apprenticeship is an industry-driven, high-quality career pathway where employers can develop and prepare their future workforce, and individuals can obtain paid work experience, receive progressive wage increases, classroom instruction, and a portable, nationally recognized credential. Registered apprenticeships are industry-vetted, approved, and validated by the U.S. Department of Labor or a state apprenticeship agency.

How many Registered Apprenticeships are there in the healthcare industry?

13,882 in 2021

What are a few of the healthcare fields that have apprenticeship programs?

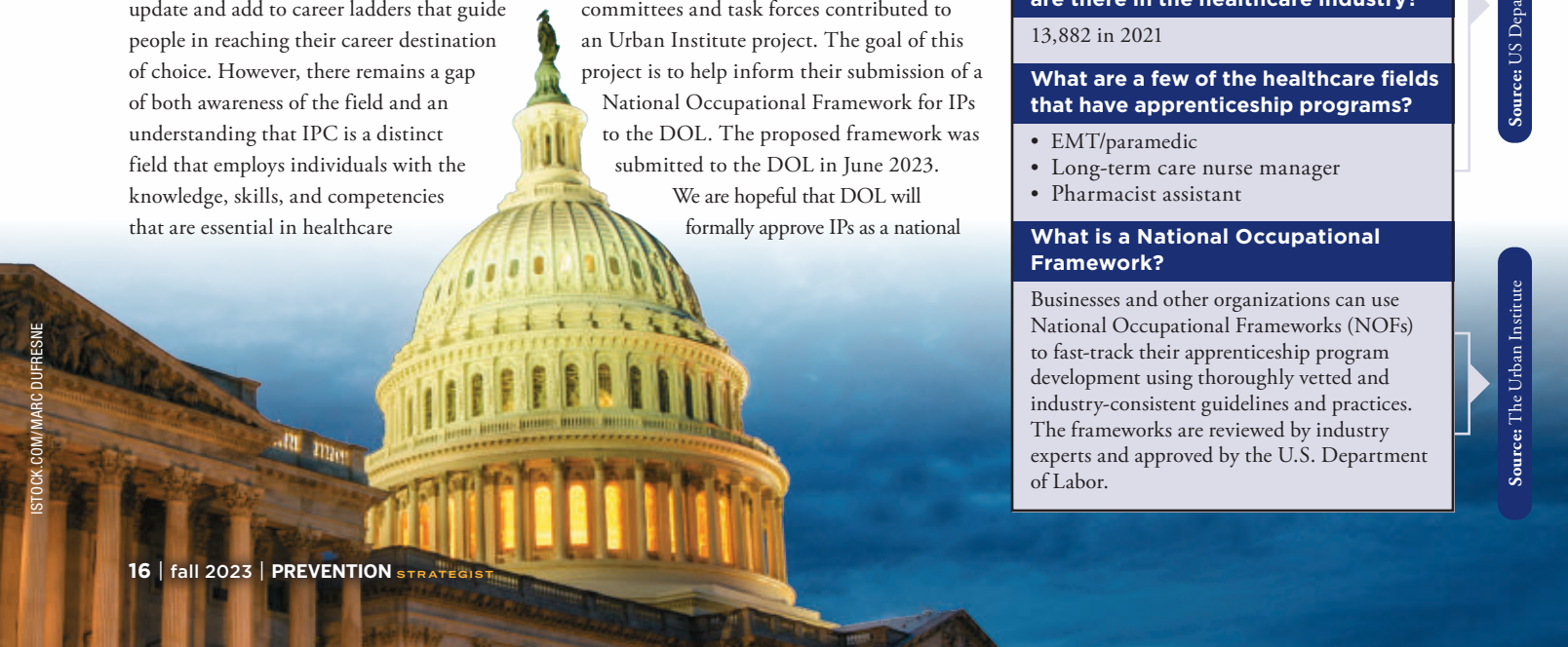
- EMT/paramedic
- Long-term care nurse manager
- Pharmacist assistant

What is a National Occupational Framework?

Businesses and other organizations can use National Occupational Frameworks (NOFs) to fast-track their apprenticeship program development using thoroughly vetted and industry-consistent guidelines and practices. The frameworks are reviewed by industry experts and approved by the U.S. Department of Labor.

Source: US Department of Labor

Source: The Urban Institute



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Communicate, Be Available, Do Your Job:
The Hybrid Work Environment

BY MAGGIE REAVIS AND LANCE WILLIAMSON

LANCE WILLIAMSON

When we think about the profession of infection prevention in a classic sense, the natural response is to picture professionals in action on patient care units adorned with a hardhat or clipboard or answering email from a crowded, multi-cubicle office. That was a reasonable visual of the infection prevention and control (IPC) team at the University of Kansas Health System until about early March 2020. When lives were turned upside down, so did schedules and work responsibilities. As a department that provides 24/7 on-call service to an academic medical center in Kansas City, Kansas, with over 1,000 licensed beds and over 13,000 employees and physicians, work plans had to be reevaluated. This included 24/7 staffing to respond to a pager that was receiving over 100 calls per day and working wherever and whenever, just to help the team. Lance Williamson, MSN, RN, CIC, and Maggie Reavis, MSN, RN, CIC, CPHQ, reflect on this time partially full of terror and gratitude. This thrust their team as well as the entire profession into a new way of thinking about how infection preventionists (IPs) can get the job done.

LANCE: As a supervisor for an infection prevention team, my goal is to balance my team's ability to be flexible while meeting the needs of our program plan and our patients. What I have learned over the past three years is that we can be as efficient and satisfied, if not more, in a hybrid work environment compared to what we have done in the past. We have remote work built into our work plan, with the IPs spending three days on-site and two days remote during the work week. Our remote work policy is a simple six words: communicate, be available, do your job. I believe having a simple policy and adopting our hybrid work environment has led to zero work-related attrition on our team in the past three years.

It is natural to be concerned about accountability when you cannot physically see your staff every day; however, I would challenge that accountability is determined by leadership style, not the location of your employees. I am more connected to my staff now than I have ever been because we use tools to leverage efficient communication like instant messaging, more frequent shorter one-on-one check-ins, and a virtual, always-updated, huddle board. There are some limitations to remote or virtual working, namely the damper it puts on a lively discussion due to mute buttons and lags. To counter that, we usually save the discussions that benefit from collaboration to the in-person meetings we have on a semi-regular basis. Most importantly, we all benefit from my team reducing the worst part of on-site working—commuting. They can spend that time either working or spending more time with their loved ones, which is ultimately the most effective staff satisfier.

"As a supervisor for an infection prevention team, my goal is to balance my team's ability to be flexible while meeting the needs of our program plan and our patients.

MAGGIE REAVIS

MAGGIE: As a member of Lance's team, I have enjoyed the benefits of the transition to a hybrid work environment, as have my colleagues. To do our work in this way, there were some physical transitions, including the installation of laptop docking stations and webcams, the addition of new software onto our computers and cellphones, and adjusting to new methods of communication both with each other and those we partner with. We learned to plan our days onsite to include rounding, observations, and collaborative work and to focus our time remotely on infection reviews, focused project work, and professional development.

Good communication is essential for the success of an IP team. We leveraged the tools we now had to identify the various methods and opportunities for communication among our team and with others. We established online chats for the day-to-day sharing of information and responsibilities. We scheduled a team huddle that occurs three times per week and includes our director and medical director partners. This virtual meeting also has an associated chat through which we can disseminate information or ask questions of the whole group. Camera use for meetings is encouraged but not mandated, although we have found that when we all have them on it lends to more collaboration.

The third component of our work from home policy is to be available. This involves signing into our various modes of communication daily and actively participating through them. Virtual options for our meetings allow us to call in from a commute or while walking from a different part of the campus. We post in the chat when someone needs help with a shared responsibility or a phone call to a staff member or health department needs to be returned. If someone needs to be unavailable for some time due to a work or personal task, that is communicated on the chat to the rest of the team.

The main challenges to this approach to our work include miscommunication and social isolation. The natural opportunities for bonding that occur when in person are absent with virtual work and can feel extremely isolating. Our team members have developed a sense of intentionality for creating and strengthening connections with others when working remotely. Miscommunication is a recognized concern when using text as a main form of communication. To avoid it, we've learned over time which meetings and conversations are better had over a call, video chat, or in person. Flexibility and support have increased with a hybrid work environment and have been the biggest contributing factors for job satisfaction. Examples of flexibility include working remotely because I have a cold or someone in my family is ill, presenting from home to a large group of people if I am still getting used to public speaking, and planning out my calendar for the week with focused protected time when needed. Support comes from our leaders to identify and enforce boundaries with our availability, to communicate to leaders more efficiently than scheduling a meeting or walking to an office, and to have the resources needed to do our work in this way. Our leaders have made all the difference for this approach to be successful, and we have felt empowered to navigate the ways in which we can become stronger and more effective communicators and influencers to improve patient safety in new ways. PS

> "To avoid [miscommunications], we've learned over time which meetings and conversations are better had over a call, video chat, or in person.

Maggie Reavis, MPH, RN, CIC, CPHQ, is an experienced infection preventionist board-certified in infection control and healthcare quality based in Kansas City, KS, at The University of Kansas Health System.

Lance Williamson, MSN, RN, CIC, is a public health nurse and infection preventionist in Kansas City, KS.

Perspectives from the Pandemic

An Interview with APIC Consultant BEVERLY BURT

BY APIC CONSULTING SERVICES

Beverly Burt

Beverly Burt, RN, BSN, CIC, graduated with a Bachelor of Science in Nursing (BSN) from Mississippi College in 1978 and has served in the role of infection preventionist (IP) for 36 years, primarily in acute care facilities. She has been Certified in Infection Control (CIC®) since 1995. Her broad range of nursing experience, which includes working in the operating room, critical care, telemetry, the catheterization lab, utilization review, and quality improvement, has been a key factor in her success as an IP. From 2012 to 2014, Beverly served on the Test Committee of the Certification Board of Infection Control and Epidemiology, Inc. (CBIC®), where she participated in the development of test questions for the CIC exam. She is a member of APIC and has served her local chapter as president, president-elect, treasurer, bylaws chair, nominating chair, and board member.

In 2014, Beverly started her own infection prevention consulting journey and currently works as an independent IP consultant through her company and through APIC Consulting Services. As an IP consultant, she has provided IP expertise to the Mississippi State Department of Health, Mississippi Public Health Institute, Mississippi Hospital Association Health, Research, and Educational Foundation, Inc., and various national organizations with APIC Consulting.

You were hired by APIC Consulting at the start of the COVID-19 pandemic to help a state department of health. Tell us about their infection prevention and control (IPC) needs early in the pandemic.

BURT: At the beginning of the pandemic, one of the first states to be overwhelmed by the coronavirus contacted APIC Consulting for IPC support. I was contracted to provide this state department of health (DOH) support, with a focus on assisting long-term care facilities (LTCFs). Early in the pandemic, the greatest need was to go onsite to LTCFs experiencing a COVID-19 outbreak and help with their prevention and control efforts. During each visit, I performed a COVID-19 Infection Control Assessment and Response (ICAR), which is an assessment tool for IPC programs and practices. Afterward, I provided a written summary to detail the purpose of the visit and note their current best IPC practices. I also identified gaps and made recommendations about how they could be mitigated. Resources were provided to help implement the recommendations, and if there were numerous gaps, I would follow up with the facility within a week or two and provide continued support. These were particularly challenging times for LTCFs. They were hungry for knowledge and expertise, and my original one-month contract eventually extended to three years. After the second month, I was allowed to work remotely and continued performing remote or TeleICARs and other duties as needed.

Implementing IPC measures during the first year of the pandemic was quite challenging. It was difficult for facilities to procure adequate supplies of personal protective equipment (PPE) and alcohol-based hand sanitizer (ABHS), and it was especially tough to find N95 respirators. The local health departments (LHD) and DOH tried to keep PPE supplies and ABHSs in stock for distribution to LTCFs during an outbreak, but these supplies would run low, even at the LHD and DOH. During the ICAR process, I would assess LTCFs' needs for PPE and provide contacts to help obtain the needed supplies.

Prior to COVID-19, the use of full PPE in LTCFs for healthcare personnel (HCP) was seldom necessary. Staff needed competency training in the proper use, fitting, and wear of PPE, so I would provide education in those areas. Also, very few LTCFs had a respiratory protection program in place, since N95 respirators were rarely worn in LTCFs. A respiratory protection program includes a written plan, medical evaluation, and N95 fit testing for HCP. This program is required by the Occupational Safety and Health Administration (OSHA) for HCP when wearing N95 respirators. The DOH hired occupational health nurses and contracted with several vendors to support long-term care facilities with their written respiratory protection programs. During the ICAR assessment, when fit testing for N95s was needed, I would train LTCFs on the regulation and provide resources and a DOH contact who could assist. The LTCFs were incredibly grateful for this support.

How did the DOH IPC needs change over the course of the COVID-19 pandemic?

BURT: Over the course of the COVID-19 pandemic, I trained other DOH staff on how to perform an ICAR in healthcare facilities, primarily LTCFs. DOH staff would first shadow me as I led several TeleICARs, or remote ICAR assessments. We would then switch roles and they would lead a TeleICAR, while I shadowed and provided support as needed. I also assisted with the development of a written ICAR Training Program to onboard newly hired staff. I presented this webinar training, "Introduction to ICARs" to each new staff. During the pandemic, the DOH hosted weekly COVID-19 Q&A webinars for LTCFs. I was asked to attend and provide support by answering live questions,

and I helped develop informational PowerPoint presentations. We presented on many topics, such as environmental cleaning, strategies to mitigate HCP staffing shortages, hand hygiene, PPE use, N95 fit testing, etc. The webinars were also attended by members from the state's quality improvement organization and others, who would eventually collaborate to develop congruent guidelines.

Later in the pandemic, IPC support was not entirely COVID-19-focused. The DOH wanted to expand their outreach support by performing ICARs in other care settings, such as dental clinics, and outpatient dialysis facilities. I led a team to develop an outpatient dialysis ICAR along with education to train the staff on performing ICARs in this type of setting. In 2022, when Mpox cases were rising nationally and throughout the state, the DOH asked me to give an Mpox outbreak webinar presentation. Additionally, I was invited by the state's hospital association to participate in their webinar education and support the development of guidelines, such as isolation signs for healthcare facilities to use state-wide.

To stay abreast of what was going on state-wide with infectious diseases, particularly COVID-19, I led weekly and bi-weekly healthcare-associated infection (HAI) DOH/LHD team meetings where we discussed updates to DOH guidelines. This meeting was followed by a round robin where staff from each LHD shared what was happening in their county. Team members assisted each other whenever needed, whether it was DOH or LHD staff. I found this helpful in providing routine IPC support, especially if an LHD staff member was new. However, since COVID-19 was new to everyone, support was needed for even the most experienced in IPC. These calls facilitated effective team building and rapport between the DOH and LHDs.

What were some of the challenges you encountered while supporting the state health department?

BURT: While supporting the DOH, the Centers for Disease Control and Prevention (CDC) COVID-19 guidance changed frequently, which made it quite challenging to provide consistent and updated recommendations to healthcare facilities. I participated in a DOH guidance committee where we reviewed updated CDC guidelines and revised our DOH guidance accordingly. Having a guidance committee proved extremely beneficial when dealing with novel pathogens and the pandemic. Thus, our DOH guidelines were able to be updated frequently and forwarded to leadership for approval. Once approved, we informed LTCFs of the guidance changes during our COVID-19 Q&A webinars. Since not all facilities could attend, the slides were shared afterward, as it is important to provide timely education on changes to the guidelines.

When HCP were exposed to COVID-19 or had COVID-19 and were quarantining or isolating at home, staffing became a huge challenge for LTCFs, particularly if the facility had a large outbreak. It was sometimes difficult for the LTCF to recruit agency staff to work since they were already allocated to work in other facilities experiencing outbreaks. CDC later developed guidelines on strategies to mitigate HCP staffing shortages, which was a huge help. It outlined guidelines for conventional, contingency, and crisis capacity to mitigate staffing shortages. I would provide educational updates about these guidelines during the COVID-19 Q&A webinars as well as when I was performing a TeleICAR. During the TeleICAR I would review the current guidelines with the LTCF and provide them with the link to the guidelines and other recommendations, including contacting their LHD during staffing challenges.

What were your key take-aways from this consulting assignment?

BURT: **Train-the-Trainer.** At the beginning of my first two months, I was responsible for providing direct onsite support for one of the LHDs that had a sizable percentage of state's healthcare facilities. I was extremely busy with LTCF outbreaks and attended meetings with the LHD HAI team. Toward the end of the first two months, I trained a newly hired IP at the LHD on the ICAR process, by having her shadow me during the onsite visits.

The ICAR process helped to build strong long-term relationships between public health and LTCFs to support and sustain IPC practices. The DOH worked closely with other organizations across the state, such as the hospital association, the quality improvement organization, and several others, which facilitated development of congruent guidance.

Communicate with IPC Community. After a few months, I started attending the optional daily DOH IP meetings. It truly helped to listen to issues other IPs were finding, and we collectively supported each other with recommendations. It was a great support group that helped all of us as we shared our ICAR experiences. Therefore, it was important to attend routine meetings with the DOH and/or LHD.

Stay on Top of Changing Guidance. Another key take-away was the need to stay on top of the CDC and DOH guidelines since they frequently change when dealing with a novel pathogen and/or pandemic. As an IP consultant, we need to be able to provide facilities with the latest guidelines approved by the state DOH leadership team. One extremely helpful resource to stay current is to implement a DOH guidance committee.

What advice would you give to IPs consulting with state or local health departments?

BURT: Initially, there were many separate DOH and CDC documents related to COVID-19. We eventually put them in a single tool kit with a table of contents, which I think was critical, as it was overwhelming for facilities to have so many different documents and links. Within that tool kit, we would sometimes add a table to help make the guidelines easier to understand. For example, a table on isolation vs. quarantine, a table with instructions for the use of each type of PPE, or for source control, was added. I recommend that guidelines on specific infectious diseases like COVID-19 be placed in an all-in-one document or tool kit, if possible.

Finally, each person on the HAI team has a diverse background and set of experiences that can help the team improve their knowledge and processes. It is important to recognize the value of each person and utilize their experience and expertise. In a consultative role, you should be open with your team, listen to their recommendations, and have excellent communication. You should be non-judgmental, kind, and inspire others, which was exemplified by the state's HAI coordinator. The DOH team was eager to help solve issues, develop guidelines, and do anything that was needed. I understand how so much more was accomplished because of the solid DOH team and excellent leadership. As IP consultants, we are frequently in leadership roles; thus, we must strive to be truly motivational leaders.

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Conversation with an IP

HELEN ARNOLD

Helen Arnold

Helen Arnold , RN, CIC, is originally from the Berkshires of Western Massachusetts, now settled in Arizona. She was inspired to become a registered nurse by the great nurses who cared for her dad while he battled lung cancer back in the early 80s. She has been a registered nurse for 30 years, and an infection preventionist for six. When not working, she enjoys spending time with her husband, friends, and family with a great cup of coffee in her hand and many stories to share.

Prevention Strategist: What inspired you to become an infection preventionist?

Helen Arnold: I returned to school to obtain my undergraduate degree in nursing from Arizona State University in 2015, researching device-associated infection prevention for my capstone project. I realized infection preventionists have a strong impact on best practice and positive patient outcomes. I knew it was what I wanted to do.

PS: What were some of your challenges when you first entered the field?

HA: Joining a large complex medical center in a metropolitan area as a novice IP was very overwhelming at first. Getting to know my way around and build relationships with so many people was a challenge. As a former emergency department nurse, my former world in acute care was much smaller.

PS: What has helped you most as you have progressed in your role as an IP?

HA: The resources my senior IP leadership and company provide. My national and local memberships in APIC provide networking and educational opportunities essential to staying current and providing the best guidance to teams at my hospital.

PS: How has your background helped you in the IPC profession?

HA: I can "triage" my day when several competing priorities arise because of my background as an ER nurse. Preparation and planning are key, along with flexibility when unforeseen events require mine and my team's expertise.

PS: What is the best advice you ever received?

HA: The IP role is as an influential consultant. It is important to refer to evidence-based practice and policy to ensure the guidance given is accurate and consistent for stakeholders. That advice came in handy during and in the aftermath of the pandemic.

PS: What advice do you have for others who are new to the field or considering the field of infection prevention and control?

HA: Take advantage of your orientation. Infection prevention is a specialty that requires patience, persistence, and empathy. Take the time to get to know the people you are communicating with every day. Let them get to know you. We all want the best outcomes for the people we serve. The job is very rewarding when you keep that in mind each day. PS

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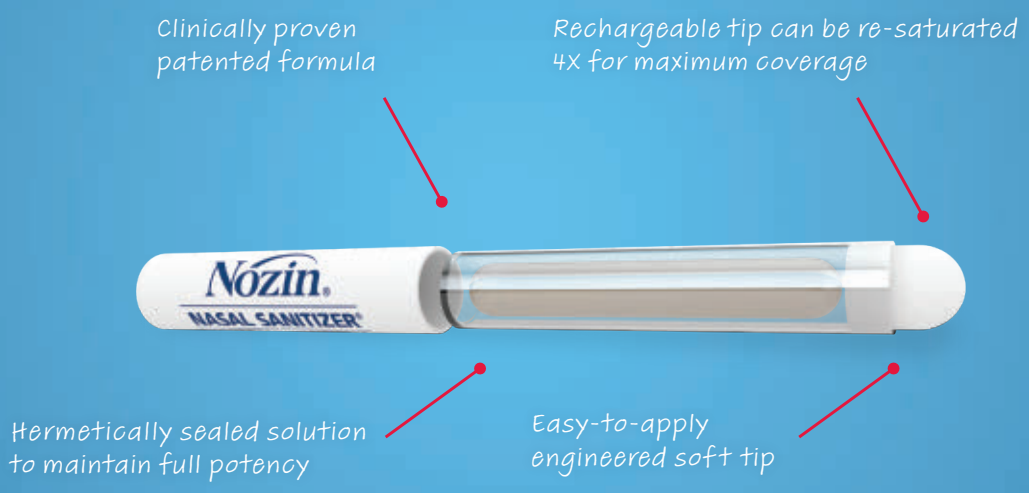

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USING TikTok AS AN EDUCATIONAL TOOL

BY KATHLEEN MCMULLEN

One of the common challenges in infection prevention and control (IPC) is the need to continuously teach and educate about important factors for the prevention of healthcare-associated infections. Many of us are struggling with frequent staff turnover and the burden of orienting and coaching new healthcare workers. Many of the newest healthcare workers are at the start of their careers. As we have always known, flexing your education to diverse and age-relevant learning styles is key for success.

It's been said that "A picture is worth a thousand words." For teaching IPC practices, a video is even more powerful. Videos can adequately explain how to complete a process or procedure, oftentimes more quickly than the instructions can be read. They can also be used to highlight common mistakes or breakdowns in those processes. As a bonus, they will also capture the attention of many different learning styles.

TikTok originated with catchy dance videos but has since moved into a variety of items from recipes to beauty tips to "challenges," captivating viewers by incorporating music and quick-moving scenery. As our organization took on the task of re-educating to the five moments of hand hygiene, by using QR codes, we incorporated nine TikTok-style videos into the print, and also into online education. At first our team was worried that it would take a lot of time and effort to shoot these videos, but we were pleasantly surprised. Each was filmed on a personal iPhone, and CapCut video editing was used to clean up the final product. We used hospital staff members from four different facilities, which increased engagement of our staff because many were seeing familiar faces in the videos. We were able to pair the content with pop music from past decades, prompting familiarity with the songs and concepts (for example, "Can't Touch This" by MC Hammer was used in a video about common errors related to five moments of hand hygiene, and Christina Aguilera's "Dirty" was matched to an equipment cleaning video).

Our videos were a part of a large campaign, but I would encourage infection preventionists who are considering this to get started with a single video, maybe for a new product that is being introduced. Almost everyone knows someone who produces their own TikToks, so recruiting them for assistance is a good way to gain experience. Give it a try!

Kathleen McMullen, MPH, CIC, FAPIC, is director of infection prevention at Mercy Quality and Safety Center in Chesterfield, MO, and is a Prevention Strategist *editorial panel member.*

BEYOND FIRST GLANCE: A Liaison's Perspective into AORN 2023 Guidelines for Perioperative Practices

BY BECKY LEWIS, MSN, RN, CIC

Until a few years ago, my understanding of how professional organizations developed and updated their clinical practice guidelines was limited. After becoming a member of the Association for Professionals in Infection Control and Epidemiology (APIC) Practice Guidance Committee, I gained knowledge of the guideline development process along with the commitment and engagement required of a team member participating in guideline updates.

In May 2022, I became the APIC liaison for the Association of periOperative Registered Nurses (AORN) Guidelines Advisory Board (GAB). The GAB is composed primarily of perioperative nurses with support from professional association liaisons with subject matter expertise in content areas relevant to perioperative clinical practice. This approach reinforced my appreciation of the value and importance of collaboration between organizations when determining practice guideline scope and the categorizing of recommendations based on the quality of evidence.

Guidelines can take 10-14 months to complete the rigorous process necessary to ensure published guidelines follow standard developmental steps, including scope development, literature review, evidence

Key Highlights from the 2023 AORN Practice Guidelines

Guideline	Release Date	Key Takeaway(s)
Hand Hygiene	June 2022	• Organizations may determine whether non-scrubbed team members can use nail lacquer and wear rings, watches, or fitness trackers made of smooth materials with no stones or adornments through an interdisciplinary risk assessment process. • Facility water management plans should include the following OR-specific items: ▪ Evaluation of electronic sensor faucets, to include appropriate locations for placement and monitoring. ▪ Minimize waterborne pathogen dispersion from splashing and appropriate sink cleaning. • Improve performance of hand hygiene in operative setting through use of visual reminders and workflows.
Product Evaluation	July 2022	• Interdisciplinary approach to the medical device/product evaluation with a clinical performance evaluation pre-purchase as well as quality assurance performance improvement process for monitoring products post-purchase, through FDA and other reporting systems.
Flexible Endoscopes	September 2022	• Process to adequately clean, disinfect, and/or sterilize, including: ▪ Dried bioburden complicates the process of cleaning-disinfecting, reinforcing the criticality of timeliness of point-of-use treatments. ▪ Certain items used during endoscopy procedures can impact post-procedure processing, including simethicone, lubricants, and more and may necessitate procedural process review at the facility level. ▪ Lighted magnification is essential to ensure debris is not left behind that cannot be detected with visual inspection alone. ▪ Drying is an essential step in endoscope processing (compliance remains low).
Minimally Invasive Surgery	November 2022	• Stressed team briefing/preparation for potential conversion to open procedure and two-person docking of robotic equipment to reduce potential sterile field contamination and equipment damage.
Medication Safety (2024 print year)	March 2023	• Emphasis on appropriate medication compounding, with OR compounding as last resort. • Identification of safe medication transfer methods to reduce contamination and medication errors.
Design and Maintenance (2024 print year)	May 2023	• Division of operating room into four OR zones (sterile field, circulation pathway, movable equipment, and anesthesia zone) and design appropriate size for intended work of each zone.

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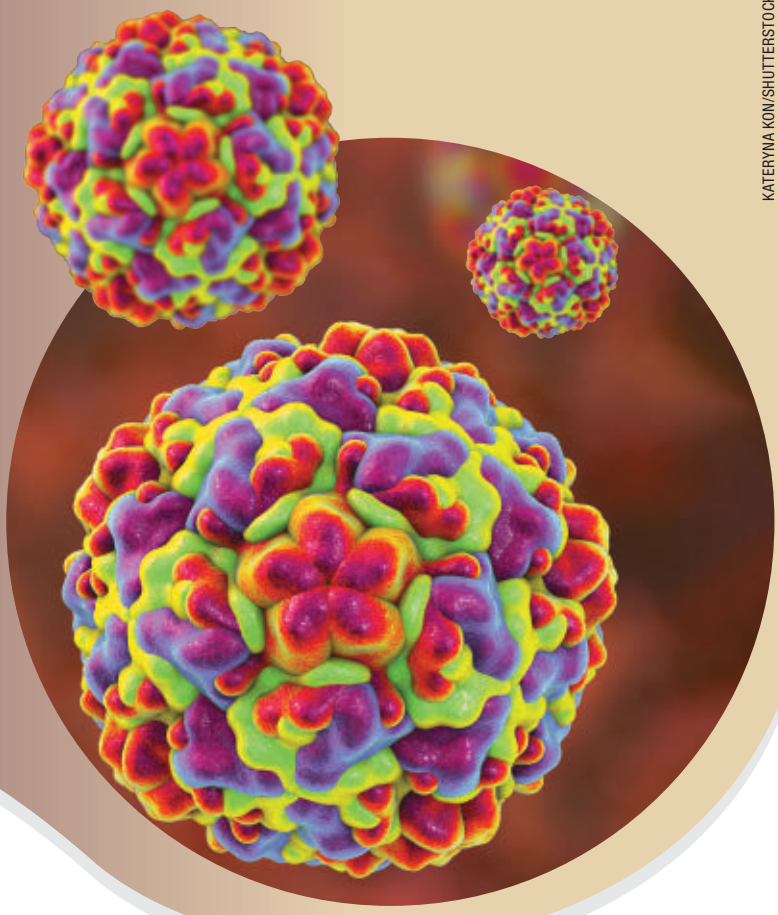
Focus on long-term care and behavioral health outbreaks

Identify the pathogen!

BY STEVEN J. SCHWEON



KATERYNA KON/SHUTTERSTOCK.COM

Hospital outbreaks are reported more often in the medical literature than occurrences in the long-term care (LTC) or behavioral health setting. By studying and learning from outbreaks in the LTC/behavioral health setting, infection preventionists (IP) will glean additional knowledge and apply this information to hopefully prevent future infections, and infection clusters, in their facility. This quarterly column will assist the IP with heightening awareness of appropriate interventions for preventing an outbreak.

Chen et al[1] discuss 12 patients, during March-April 2020, who developed a respiratory infection in a 100-bed psychiatric ward for chronic diseases in Taiwan. Additionally, two healthcare workers also developed respiratory illnesses. Signs and symptoms included fever, cough, rhinorrhea, stuffy nose, and sore throat. Two patients developed pneumonia. No ageusia or anosmia was reported. The patients were isolated and placed on droplet and contact precautions.

Based upon your clinical acumen, you suspect the pathogen is:

1. The COVID-19 virus
2. Nipah virus
3. Rhinovirus
4. Norovirus

The Taiwan Centers for Disease Control (Taiwan-CDC) was promptly notified and began their investigation. Two sets of pharyngeal swabs were obtained from all 12 patients to rule out severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and numerous other respiratory pathogens, using real-time reverse transcription-polymerase chain reaction (RT-PCR) to detect nucleic acid.

All patients tested negative for influenza and SARS-CoV-2. Eight patients were positive for enterovirus/rhinovirus. Rhinovirus and enterovirus have similar clinical presentations and are indistinguishable from each other on laboratory assays.[2] Further specimen analysis revealed Human Rhinovirus-A21, a non-enveloped virus. Four patients tested negative for respiratory pathogens. Specimens were not obtained from healthcare workers.

More than 200 different viruses can cause minor infections of the nose and throat, also known as "colds."[3] Colds can occur throughout the year, but they are more common in rainy or winter seasons.[4] Some medical professionals feel the cold weather may suppress the immune system.[4] Exposure to wet or chilly weather by itself will not induce a viral infection. Additionally, societal factors such as people spending more time indoors near others who may be ill can promote infection transmission, e.g., individuals attending school.

The "common" cold, as the name implies, is a widespread respiratory illness, with millions of individuals becoming ill annually, with adults having two to three episodes per year, and children becoming more frequently ill.[5,6]

Rhinoviruses, first discovered in the 1950s, are the most likely cause of colds.[7] The rhinovirus name is based upon the Greek word "rhino," meaning nose.[8] The rhinovirus family has at least 100 distinct virus types.[9] There are three genetically distinct human rhinoviruses (HRVs) groups, designated groups A, B, and C.[7] Annually, this infection results in a tremendous economic burden, costing billions of dollars in medical visits and missed days of work.[7] Outbreaks have also been reported in long-term care and neonatal intensive care units.[10,11]

The rhinovirus incubation period is from 12-72 hours, with symptoms lasting 7-11 days, or longer, including[12]:

- Nasal dryness or irritation
- Sore throat
- Nasal discharge, nasal congestion, sneezing
- Headache
- Facial and ear pressure
- Loss of smell and taste
- Cough
- Hoarseness
- Posttussive vomiting
- Irritability, restlessness

Patients with asthma, infants, the elderly, and the immunocompromised are at increased risk of a lower respiratory tract infection, and possible mortality, with this pathogen.[7] Rhinovirus complications include otitis media, sinusitis, chronic bronchitis, and reactive airway disease exacerbation.[12]

The diagnosis is based upon the clinical presentation and polymerase chain reaction testing as part of the respiratory virus panel.

The rhinovirus is spread by sneezing and coughing, close personal contact, and by touching contaminated surfaces and objects and subsequent facial self-inoculation.[13] The virus can survive on a dry surface from two hours up until seven days.[14]

Droplet and Standard Isolation Precautions are implemented for the duration of illness.[15] Contact precautions are added if copious moist sections and close contact is likely to occur. Consider wearing a face shield or goggles to protect your eyes from secretion splashes.

There is no approved anti-viral medication to treat rhinovirus. Instead, treatment is supportive, based upon the symptoms. Infection prevention strategies include hand hygiene, not touching your eyes, nose, and mouth, and wearing personal protective equipment (PPE) correctly. Additionally, practicing respiratory etiquette will reduce the virus transmission risk to others. Ensure patient care items, objects, and surfaces are cleaned/disinfected on a regular basis.

Vaccine development is challenging due to the large number of rhinovirus serotypes. The different types, or serotypes, makes it very challenging to develop an effective rhinovirus vaccine due to the genetic-viral diversity.

The authors[1] noted all patients recovered and stressed the importance of using PPE, correct patient placement, and diagnostic testing, including COVID-19 testing, to guide treatment and infection prevention and control interventions.

TAKE-HOME MESSAGES

1. Ensure your facility is using an Environmental Protection Agency hospital-class disinfectant. Review the product's label or check with the manufacturer to ensure the product's effectiveness against the rhinovirus. Review the merits of implementing an environmental hygiene performance improvement program with either adenosine triphosphate (ATP) or fluorescent gel markers.
2. Provide germicidal wipes with rhinovirus activity at the point of care and store in a safe manner.
3. Rhinovirus is not a nationally reportable disease (**https://ndc.services.cdc.gov/search-results/**). However, be aware of your state's requirements on notifying your Department of Health of an outbreak. It may be helpful to add this phone number, plus the after-hours phone number, to your reportable disease policy and personal phone.
4. The Centers for Disease Control and Prevention has patient teaching materials available at its website at **https://www.cdc.gov/features/rhinoviruses/index.html**.
5. Continue to teach the importance of hand hygiene, social distancing, respiratory etiquette, pandemic masking precautions, etc., to patients, residents, and staff. Consider developing a patient hand hygiene program with all meals and snacks.

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Steven J. Schweon, RN, MPH, MSN, CIC, LTC-CIP, CPHQ, FSHEA, FAPIC, is an infection prevention consultant with a specialized interest in acute care/long-term care/behavioral health/ambulatory care infection prevention challenges, including outbreaks.

AJIC AUTHOR INTERVIEW

BY PATRICIA STONE

Kathleen McMullen

AJIC Editor in Chief Patricia Stone, PhD, RN, FAAN, FAPIC, interviewed Kathleen McMullen, MPH, FAPIC, CIC, one of the authors of the *AJIC* article "Implementation of an electronic hand hygiene monitoring system: Learnings on how to maximize the investment," McMullen K, Diesel G, Gibbs E, Viox,A, Dietzler-Otte J, McIntire J, Nelson K, Starke K. *AJIC*. 2023;51(8):847-851.

Prevention Strategist: What spurred this focus? Why is your role important?

Kathleen McMullen: This focus was brought on by our organization's commitment to patient safety as evidenced by the investment in an emergency medical service. Our team at the system level sought to support the go-live at our 12 hospitals by helping with education and sharing best practices. As we discovered similar trials at multiple hospitals, we knew it would be important to share those trials and methods to overcome them to our colleagues via *AJIC*.

PS: Why is your area of focus important (or relevant) for the infection preventionist and other healthcare workers?

KM: This work is relevant to all infection preventionists (IPs) who are interested in looking at ways to improve hand hygiene compliance. We know this is the keystone of great infection prevention and control (IPC) practice, and many are likely eager to embrace electronic methods to track and remind healthcare providers to wash or sanitize. This publication was intended to help IPs who would like to implement these technologies, by preparing their organizations for the resources needed for success.

PS: What is your favorite aspect of your work?

KM: As a leader of a healthcare system, my favorite aspect is getting to interact with the various IPs at hospitals for our policies and processes. Every member of our team has a key piece of insight at times, and I love to see our team work together for a standardized result.

PS: What do you want to achieve with your work?

KM: What we all want—prevention of infections!

PS: Share a turning point or defining moment in your work/research.

KM: A defining moment in my work was due to a major citation related to hand hygiene. The experience of recovering from that situation with my IPC team and our fellow healthcare workers was incredibly enlightening. It helped me understand the importance of insight from the various members of teams, and the variety of ways that processes differ within our complex healthcare organization. Ultimately, we were successful in overcoming and creating lasting change in hand hygiene and healthcare-associated infections.

PS: What's next?

KM: Our next area of focus will be surgical site infections (SSI). We are working to increase IPs rounding in the procedural areas and hardwire components of SSI prevention bundles to apply to all surgical patients. PS

REVIEW FOR *AJIC*

The *American Journal of Infection Control* (AJIC) welcomes new applications for peer reviewers. Requirements to become a peer reviewer are:

- Previously published at least twice in a peer-reviewed journal
- Has a minimum of a Master's Degree

If you meet the above requirements, please contact Jeanne Brandt, Managing Editor, AJIC@columbia.edu for additional information.

PEARLS OF WISDOM FOR THE **INFECTION PREVENTIONIST**

ISTOCK.COM/CHAMELEONSEYE

BY STEVEN J. SCHWEON

When I speak at orientation for new employees, my initial opening to the group is to request that they "raise their hands if they're interested in hurting a patient." I always receive cynical looks, hear nervous laughter, and of course, nobody to date has ever raised their hand. However, I have their engagement right away.

As *infection preventionists* (IPs), safety, regardless of our clinical practice setting, is encoded in our DNA. Our colleagues, patients, payers, regulators, etc., all expect us to practice safely.

I like using sayings, quotes, and aphorisms as gentle reminders to practice safely and prevent harm. These are just some more of my favorite "pearls of wisdom" and how I adapted them in my infection prevention practice.

1 "In the middle of difficulty lies opportunity." Albert Einstein

I strongly suspect that nearly every IP has been challenged during the pandemic; I know I have, many times. Early in 2020, my facility was being inundated with patients very ill with COVID-19. An old intensive care unit, *without* a toilet in every room, was opened. Safely managing human waste quickly became a concern. Rapidly installing a plumbing system was not an option. Nursing asked me what to do, NOW! I suggested putting a bedside commode in every room and lining the bucket with a non-flimsy, disposable trash bag to collect the waste. We then quickly developed a policy and procedure for safe removal.

Take-home message: The trash bag in the commode is an old gem from my emergency management education when faced with a lack of toilet water for flushing. One never knows when *all* our education will come to fruition, but it may!

2 "Make the mistake in favor of patient safety." Adapted by S. Schweon

With complete transparency, I am typically very conservative as an IP and nurse. I will promptly promote isolation precautions when there is some debate over the diagnosis, such as with viral meningitis and unexplained diarrhea. I would rather have people upset with me with initiating precautions that may not be needed, than to not initiate precautions and wind up with an exposure and angry colleagues.

Take-home message: Patient and staff safety is always paramount. Always.

3 "I'd rather sweat during planning than bleed during performance." Adapted from the military

My colleague Kelley Boston and I were fortunate enough to be chosen to present "The Infection Preventionist's Guide to Understanding OSHA Compliance," at this year's APIC Annual Conference and Exposition. Pause briefly to ponder how much OSHA impacts our daily workflow and keeps our colleagues safe. There is so much material to share! There is so much preparation that goes into the presentation!

In reality, it's impossible to memorize every OSHA requirement and regulation; instead, my onus is on learning. My plan is to give a credible overview, with additional reference material to support the IP. To support this charge, I try in advance to anticipate what concerns and questions the audience may have and support this with my presentation. In the event I can't answer a question, I have a stock answer to share with the audience where the information can be found, and this will prevent any performance "hemorrhage."

Take-home message: Chance favors the prepared. I never approach a presentation with the attitude of "winging it." Instead, I try to learn what the audience's needs will be in advance and rehearse my answers and slide deck.

4 "Big hat but no cattle." Derived from several different sources

In other words, there is plenty of talk but no action to back up the talk. I mentor IPs. I've had several IPs express an enthusiastic attitude with beginning a mentoring relationship. Mentee goals include publishing, obtaining certification, presenting at conferences, etc. All goals are obtainable, and they require time and effort to achieve. I'm excited to work with them and then, at some point, they stop responding. No reason is ever provided, and they are unresponsive to follow-up communications.

I completely understand if the situation or timing is not optimal. Professional courtesy, in my view, is to simply express the need for termination and to thank each other for the opportunity. The lack of closure results in feelings of sadness for the mentor, that they lack this skill set which is so crucial for personal and professional growth.

I'm always curious to learn YOUR "pearls of wisdom." Please share them with me at Sschweon@ptd.net.

Steven J. Schweon, RN, MPH, MSN, CIC, LTC-CIP, CPHQ, FSHEA, FAPIC, is an infection prevention consultant with a specialized interest in acute care/long-term care/behavioral health/ambulatory care infection prevention challenges, including outbreaks.

PURSUING INFECTION PREVENTION

BY PATTI GRANT

Patti Grant

You've no doubt heard the expression "common sense and book sense are not the same thing," and having an advanced (graduate) degree might mean some had the tenacity to finish a project. Keeping this caveat in mind, APIC's *Prevention Strategist* is extending an invitation to share experiences of why, what, when, how, or an exact trigger, that prompted a person to pursue or enhance their professional journey to become an IP, with or without, an advanced degree. Send experiences to editor@apic.org.

Master of Science (MS) in Health Promotion, University of North Texas, 1997

As *Prevention Strategist* kicks off this exciting new series on the pursuit of becoming an IP and/or an advanced degree application experience, I have made sure to approach this topic with a thoughtful heart. It is my belief that not all infection preventionists (IPs) require an advanced degree, and even when desired, sometimes life circumstances impede an aspired goal or passion—financial and family hitches included. Lack of an advanced degree does not inhibit an IP's ability to thwart the transmission of infection within their work environment. With that said, an advanced degree is an extension of the cornerstone training which APIC offers, augmented by the CBIC mission, and enriched through mentorship, to enhance an IP's ability to advance the profession, which can make the world a safer microbial/organism place.

If doing it over again, I'd still get a Bachelor of Science in Nursing (BSN) to become a registered nurse (RN). That degree provided a framework for problem solving beyond the clinical setting, along with a moderate dose of research and basic statistics. Regarding research and statistics, the BSN armed me with knowing what I didn't know, and in hindsight, that was a huge educational gift. Within six years that same training helped me become the head nurse of a cardiovascular stepdown unit in a busy university hospital; it also left me with only two sets of interchangeable management skills.

It was time to arm myself with some options, and going back to school was part of that plan. I demoted myself four salary grades, left on a Friday as a head nurse and returned on a Monday as an infection control coordinator. Nothing magical popped in my head that weekend. The only reason I survived was due to fantastic mentors and an employer that understood the value of an APIC education. Through networking, I met somebody with a MS in health promotion, and the concept seemed fascinating and known, yet undefined (for me).

Originally, I thought of nothing but a MS in nursing to cement a bid for nurse administration work, yet the challenge of leaving my comfort zone, once infection prevention had gotten its hooks in me, was inviting. Along the way several shared that the thesis option was a challenge worth accomplishing because I'd learn to organize my growing research and statistic skills. Well, that was an understatement, and I've accepted to lean on the expertise of others who are willing to share their exceptionalism.

How an MS in Health Promotion Benefited Being an IP

Being the only RN over a five-year period, in classes filled with non-healthcare students, was an education in and of itself—something I would have missed if I'd gone the nursing graduate degree route. Learning how non-healthcare professionals viewed health and sickness offered a

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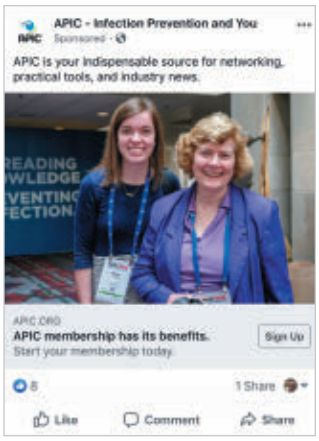
IPC It Runs in the Family!

Grandmother-Granddaughter IP Duo

BY ALEXIS BEPLER

One of the most common ways to become an infection preventionist (IP) is by accident, even when a close family member is an IP. Grandmother-granddaughter infection prevention duo Glenda and Madyson Schuh can vouch for that.

Fourth of July parade in Friday Harbor, Washington, in 2022. The parade theme was "United We Stand, saluting heroes, helpers, and essential workers," where Glenda was honored for her 40 years of service.



Glenda Schuh, BSN, RN, CIC, stumbled into infection prevention and control (IPC) from nursing when asked to fill the open IP position at St. John Medical Center in Washington state. With an impending visit from The Joint Commission, filling the role was a priority, and Glenda was up for the challenge. "If God gives you lemons, you make lemonade, so let's start squeezing the juice," Glenda said.

Knowing she was going to need support to be successful in the IP role, Glenda asked to join a professional association, leading her to join APIC National and later the Puget Sound Chapter, where she found a mentor in the first APIC President, Patricia Lynch. "It took me several months to find my local chapter, and when I did find my local chapter, it was awesome," Glenda said. "They were wonderful support, and they still are."

Keen to master IPC, Glenda turned down offers to return to her previous nursing. She told administration, "I've been doing this IP job for two years and still haven't figured it out." Glenda said, "I kept at it, and it's been absolutely wonderful. It has taken me places that I never dreamed of going."

Instead of letting her inexperience with microbiology cause her to flounder, she dedicated a large portion of her time to being in the lab and creating relationships with the scientists. She used her patient knowledge to fill in the gaps and pinpoint how and where patients were being infected. She also recounts many conferences and training sessions that shaped her career. Retired from the hospital setting in 2021, Glenda continues to use her knowledge and expertise as a camp nurse and certified alpine ski instructor.

Madyson Schuh, MPH, a-IPC, Glenda's granddaughter, also found her way into IPC by chance. Even with an IP for a grandmother, she recounts not knowing what IPC was. "Growing up nobody knew what Grandma did. It was just kind of a murmur."

Like many other IPs, Madyson knew she wanted a future in healthcare but did not know in what capacity. During her studies at the University of Washington, she had a class assignment to interview someone. Glenda was able to connect her with an IP colleague. After reflecting on her family history with healthcare-associated infections (HAIs) and learning more about what her grandmother's work entails, an interest in IPC had sparked. Madyson decided to pursue a master's in public health with a concentration in infection prevention rather than being a CNA. Currently, Madyson is a project firstline specialist in the healthcare-associated infections and antimicrobial section within the Washington State Department of Health.

For new IPs, the support of a mentor and local APIC chapters can make a huge difference. For Madyson, her grandmother functions as a built-in mentor with an extensive network. However, mentorship is a two-way street. While Madyson benefits from her grandmother's connections and wide breadth of clinical experience, Glenda is kept up to date on the newest infection prevention information and practices by Madyson.

"It's something we get to bond over. We get to go to different conferences together. I get to see her in meetings, which is always entertaining. Our bond is unique. We have different family members in healthcare but none in IPC," said Madyson.

Glenda and Madyson pose with family members.

Despite the different settings and times, Glenda and Madyson can attest to the value and difficulty of education. Education of staff, patients, and community members remains a priority in IPC after all this time. While the internet and modern technology have changed the game since Glenda started, new challenges have cropped up. IPs are having to combat burnout, lack of attention, and misinformation while communicating infection control practices.

"Getting frontline healthcare workers to recognize the importance of infection prevention is probably one of the hardest things we're seeing," Madyson said.

The Schuhs' story exemplifies the permanent need for IPC and the importance of a strong network. Both promote the need for networking and the integral role that APIC chapters, conferences, and other organizations have had on their experience as IPs. Not everyone can be so lucky as to have their grandmother as a mentor, but finding a support network is a must for all IPs. Connect with your local APIC chapter for assistance and resources (**https://apic.org/member-services/chapters/**). You're not alone!

Alexis Bepler is a communications specialist at APIC.

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A Day in the Life
A Collaborative

BY JESSICA DANGLES

Mae Eichelberger

I had the opportunity to meet Gibson Area Hospital & Health Services (GAHHS) Director of Infection Control Mae Eichelberger, RN, BSN, CIC. Mae has been CIC certified since 2017 and has been a nurse for almost 50 years. In her role, Mae oversees acute and long-term care, and serves as a resource for all GAHHS clinics, the pharmacy, and the onsite dental practice. I spent a day with Mae to learn more about her role as an infection preventionist (IP) and her facility.

A Part of the Community

Gibson Area Hospital in Gibson City, Illinois, is a 25-bed critical access hospital that offers a broad range of services to the communities of Gibson City, Melvin, Sibley, Elliott, Paxton, and Foosland. In 2022, GAHHS provided care for patients from 800 zip codes. GAHHS also operates multiple clinics and physician practices in the region, providing primary and specialty care services to patients of all ages. GAHHS is rooted in access to quality healthcare in rural areas.

The hospital has been serving the community for 70 years and is committed to providing high-quality, personalized, professional healthcare services in rural areas, fulfilling its vision to be *the* model of excellence in community-based healthcare.

Surveillance

Surveillance is essential in infection prevention processes—allowing healthcare facilities to monitor the occurrence and spread of infectious diseases within their patient populations. By monitoring data on the incidence and prevalence of pathogens, facilities can identify trends, patterns, and outbreaks of infections; taking appropriate action to prevent further transmission.

Mae starts each day with surveillance, assisted by a part-time infection control clerk. Part of what Mae enjoys about her role is that no two days are the same. When she first started, there was a remodel of the front entry to the hospital, which was adjacent to an area where high-risk patients were receiving treatment. She stressed the importance of a collaborative team and worked with the executive director of safety on ways to contain dust and safely dispose of debris during this project. Mae meets with contractors at the start of every project and routinely serves as a monitor and resource for environment of care projects.

Interdisciplinary Care

Every day Mae participates in an interdisciplinary care conference with Gibson's occupational/physical/respiratory therapists, floor nurses, hospitalists, and case managers to discuss plans of care and discharge planning for patients. She also attends a weekly virtual huddle which pulls in managers from each clinic and hospital department for promoting collaboration and dissemination of information.

A collaborative care plan supports patients and ensures communication between staff. When healthcare providers work together as a team, they can develop a more comprehensive understanding of a patient's health condition and provide more effective and coordinated care. Additionally, it can lead to improved patient outcomes, increased efficiency, enhanced patient safety, improved patient satisfaction, and better resource utilization. "I appreciate how the collaborative culture here supports and facilitates my role as infection preventionist," she said.

# of an IP: Culture Is Key

COVID-19 and the Pandemic

At the start of the pandemic, GAHHS was able to secure COVID-19 testing and performed 7,000 tests over 3.5 months. As an alternative to inconvenient and untimely COVID-19 assays, they were able to serve individuals in Gibson City and many surrounding communities by providing rapid COVID-19 tests via drive-thru clinics. Infection prevention and control (IPC), the lab department, hospital security, hospital administration, employee health, the emergency department, and nursing all worked to implement this effort.

"It was all hands on deck, and that's what we do at Gibson," Mae stated. "This showcases what we do and how our high-quality organization functions every day."

This was also at a time when due to supply chain issues, disposable isolation gowns were unavailable. Several clinics were unable to operate due to COVID-19 and various clinic staff were tasked to make DIY disposable gowns. They became experts in making about 16,000 gowns from plastic or vinyl. It even became a contest between several clinics to see how many gowns they could make in a day.

"Because of our collaborative process and our administration being very proactive, our organization was able to better serve our patients and employees during this critical time," Mae said.

The Role

I asked Mae what she enjoys most about her role. "I enjoy the autonomy I have and the positive impact providing a safe environment has on patients, employees, and visitors. Saving lives through the focus on IPC is meaningful to me," she responded. "Impacting the health of others on this level is fulfilling."

Gibson Area Hospital & Health Services
GIBSON GETS IT

Gibson Area Hospital & Health Services.

Mae's advice for someone pursuing a career in IPC is to study nursing, communicable disease, epidemiology, and microbiology; find a mentor, join a local APIC Chapter, and be familiar with international websites to learn about pathogens trending in the U.S. and around the world.

Certification

I shifted our conversation to certification and asked why she pursued CIC certification. "I had a good medical and clinical background, but it was such a different world in IPC. I felt obtaining certification was necessary to perform my job well. I've since recognized that when we have our surveys and they see I have a CIC, I get fewer questions," Mae said. She stressed the importance of practice tests to prepare for the exam.

When asked if the CIC helped her grow professionally, she stated, "Yes, absolutely. It opened a lot of avenues for references for me. I now know about APIC Chapters, and the networking has been great. It's easy to be siloed in infection prevention; networking assists in curbing this tendency." She encourages others to pursue certification as well. "Go for it! It will only enhance your practice and will strengthen your professional voice," she said.

I would like to thank Mae for spending the day with me and want to recognize her commitment to certification and lifelong learning. Mae is an example of the importance of collaboration and how a collaborative culture contributes to safe and effective healthcare services and infection prevention in healthcare settings and beyond.

Jessica Dangles, MBA, MS, PMP, is executive director of CBIC.

ADVICE ON LANDING THE INTERVIEW AND GETTING THE OFFER

BY CHAZ RHONE

I am often contacted by frustrated aspiring infection preventionists (IPs) seeking advice on how to break into the field of infection prevention and control (IPC) and obtain interviews and interview tips. It seems there are many non-nursing IP candidates who continue to have difficulty landing their first IP position or advancing into IP leadership roles simply because they do not have a nursing background. As someone who has a public health epidemiology background and often interviews IP candidates, I would like to offer advice that I have found to be useful for those who are seeking their first or next IP role.

The first piece of advice is to step up your networking game, as the benefits are critical to entering and moving within the field. As a mentor once told me, "It's not just about what you know, but also who you know." As you begin to meet other IPs, you will find the IP community to be a well-connected group. Networking provides an opportunity to "get your face out there"

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and express your interest in seeking a new position in infection prevention. It puts you in front of those who may be aware of current or upcoming vacancies, or involved with candidate screening, interviews, and selection. Additionally, networking leads to a contact to inquire about a position you may be interested in, send your resume/CV to directly, and follow up once your application is submitted and throughout the interview process. Joining your local APIC Chapter and attending the meetings is a great networking opportunity. I have also found LinkedIn to be an easy and effective way to connect with IPs all over the country, especially for those like myself who are introverts.

Next, consider certification through the Certification Board of Infection Control and Epidemiology. Certification validates the level of competency you have in infection prevention and also conveys to employers that you are committed to professional growth within the field of infection prevention. There are currently three options for certification, the Associate-Infection Prevention and Control (a-IPC) Certification, the Certification in Infection Control (CIC), and the Long-Term Care Certification in Infection Prevention (LTC-CIP). The a-IPC is an entry-level certification that measures basic infection prevention competency. It is intended for the novice IP and for those interested in pursuing careers in infection prevention. It is also intended for those who do not meet the eligibility requirements for the CIC or LTC-CIP. The CIC is intended for those who are in the becoming proficient career stage with at least one year of full-time employment in infection prevention. The LTC-CIP is also intended for those in the becoming proficient career stage, and who are responsible for IP specifically in the long-term care setting with at least one year of full-time employment in infection prevention. As a side note, according to the 2015 APIC MegaSurvey,[1] those with CIC earn $20k more on average than those without the credential. Certification is definitely worth the investment in terms of securing a position in infection prevention and negotiating a higher salary.

In addition to networking and certification, you should ensure that your resume or CV adequately reflects your experience and how it has prepared you for the position you are interested in. It is imperative that your resume/CV gives the best first impression possible, as in most cases you will be screened solely on its content. A great way to grab the reviewer's attention is to use the APIC Competency Model[2] to serve as a framework to portray your experience in terms of the domains and subdomains of the competency model. You can even use key terms and language found in the model to communicate your experience. I also suggest including any projects you have worked on and the results or outcomes achieved, such as percent reduction in healthcare-associated infections (HAIs) or percent increase in compliance with infection prevention practices. This will demonstrate your ability to lead or facilitate a team or project and successfully get results.

APIC SCHOLARSHIP OPPORTUNITIES

APIC Critical Access Hospital Scholarship

Awarded for under-resourced critical access hospitals that offer vital healthcare to individuals living in rural areas throughout the U.S.

https://apic.org/education-and-events/certification/critical-access-hospital-ipc-scholarship/APIC Scholarship Program

APIC Scholarship Program

The APIC Scholarship program helps APIC members in need of financial assistance to manage the costs associated with critical professional development. Funds assist infection preventionists pursuing APIC professional development and education programs such as the CIC and LTC-CIP credentials.

https://apic.org/education-and-events/certification/scholarshipprogram/

Graduate Student Award

The APIC Graduate Student Award (AGSA) supports research that advances infection prevention and evidence-based implementation science. The award is given to a student seeking to complete a master's or doctoral degree.

https://apic.org/About-APIC/Awards/scholarships/graduate-award/

Judene Bartley Advocacy in Action Scholarship

Established by APIC and SHEA to enhance training and application of public policy advocacy skills of outstanding members of the respective organizations.

https://apic.org/about-apic/awards/scholarships/judene-bartley-advocacy-in-action-scholarship/

Even if you do not have direct IP experience yet, chances are your educational background has touched several parts of the competency model. The literature has shown that public health epidemiology and lab educational competencies overlap IP competencies by over 80%.[3,4] Be sure to include experience that demonstrates skills that may indirectly align with the competency model, especially surveillance, application of case definitions, and data analysis. If possible, send (or ask a mutual connection to send on your behalf) your resume/CV directly to an internal IP contact where you are applying, in addition to submitting electronically. If there are any snags with the electronic talent management system or a human resources employee screening your application prevents it from getting to the hiring manager, your resume/CV will have gone to someone who can be on the lookout for your application.

Once you have been contacted for an interview, your main objective is preparing yourself by ensuring you are familiar with and able to speak to the basics of infection prevention, understanding the impact HAI outcomes have on patients, and finding out as much about the organization you are applying to as possible. Search the organization's website to find their vision, mission, and values, as well as the facility size and services offered. You also need to review any public facing quality and HAI metrics to assess for areas in which the facility is performing well and any opportunities for improvement. Most healthcare settings have publicly reported quality metrics available on the CMS website[5] and may also include HAI metrics. Also, hospitals participating in annual Leapfrog surveys will have a Hospital Safety Grade along with associated HAI metrics available on its website.[6] Although this information is lagging quite a bit, it can help you tailor your responses to interview questions, play up any strengths or experience related to the opportunities the facility has, and inform the questions you ask the potential employer. It will also demonstrate that you are aware of the organization's public reputation.

When it comes to the interview, first and foremost, dress the part whether the interview is virtual or in person. Your appearance and body language can communicate volumes before you even speak a word. When in doubt, you can never go wrong with a suit. Also, be confident in why you currently work as an IP or want to become an IP, and be prepared to state your why without even thinking about the answer. When responding to questions about your experience, discuss projects you have worked on and share the actual results, such as increased compliance with IP process measures or reductions in HAI outcomes. Additionally, be prepared to provide specific examples of outbreak investigations, conducting surveillance, applying case definitions, and data analysis skills. If you lack infection prevention-specific examples, remember to include others that are not exclusive to infection prevention but necessary, such as leadership skills, project management, multi-disciplinary teamwork, and engaging stakeholders/partners around a common goal. Frame those closely related examples in terms of the APIC Competency Model and link them to the required and suggested criteria of the role you are seeking.

One last recommendation to help with this process is to seek out a mentor. Your mentor can help connect you with other IPs, review your resume/CV and provide feedback, and even help prep you for upcoming interviews. My hope is that this article provides some immediate action items for you to complete. Additionally, I hope that it encourages you and challenges you as you take your next steps in breaking into IP or moving into a new IP role. Sometimes it can take a while, but it will happen!

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Pursuing Infection Prevention | *continued from page 30*

perspective outside the traditional hospital climate I'd been in since 1981. Health promotion, at the time, was about making the United States of America's "Healthy People 2000" happen, which was *100% off my radar* as an RN/IP.

Stated another way, health promotion is about learning how to work within, and via, a society(s) *existing* culture, politics, infrastructure, and financial restraints, to reverse the leading causes of death. It gave me the opportunity to learn about leading through facilitation, and to implement and manage integrative systems for the outcome of reversing untoward health issues.

Although not used as an example during my formal graduate education, the entire concept of health promotion was tailored for immediate application to prevent the occurrence of healthcare-associated infections (promoting an aspect of health for those within the hospital I worked). The *hospital* was the *society* with an established culture, politics, infrastructure, and financial restraints; each unit, service, and department within each hospital also had their own silo coaching IP opportunities to share and learn integration for improved outcomes (lower healthcare-associated infections). The formal behavioral models were brand new to my RN/BSN brain, and decades later I recognized many of the concepts, with different names and angles at APIC conferences, when human factors engineering took hold within the patient safety movement.

Since that 1997 MS in health promotion was earned, each paper written has been based on using the knowledge learned through the work and efforts of others as applied to everyday problems within the healthcare facility. Sharing an experience in writing helps to avoid reinventing the wheel. By publishing lessons learned through the rigors of peer-review publication, the MS in health promotion allowed me, in a small and quiet way, to contribute to our global IP knowledge base that helps each of us move forward in preventing infection through others: also known as implementation science.

Patti Grant, RN, BSN, MS, CIC, FAPIC, is an infection preventionist at Methodist Hospital for Surgery, Addison, TX. She is a member of the Prevention Strategist *editorial panel and was the APIC President in 2013.*

Practicing Joy in Infection Prevention

BY GREG HEDLER AND SARAH SMATHERS

Ask any infection preventionist (IP) why they are an IP and you will get a variety of answers with a common theme: We love what we do. Every IP has a story about how they entered the field, and you can see their eyes light up when they talk about finding a career they never knew existed. Our work is naturally joyful, as our successes and accomplishments help people and save lives.

Infection prevention is a complex and dynamic field, which makes it both exciting and at times overwhelming as we work within the unknown. We have all felt the weight of growing demands, rapid responses, and the challenging work of changing behaviors, which can drive us to the point of exhaustion or burnout. As dedicated and mission-driven professionals, we often focus on others and forget to invest in ourselves. It is critical to take the time to fill our buckets and practice real-time resiliency, through proven practices that connect team members to one another and nourish joy.

Gilmartin and Saint discuss a remedy to burnout through the three practices of framing, gratitude, and kindness.[1] These evidence-based practices of gratitude, as highlighted by Brené Brown's research, indicate that when one engages in gratitude there is an increase in one's connection to joy. This sense of joy fosters an upward spiral of additional impacts such as increased effectiveness and creativity as well as a strengthening of relationships.[2] When so much of what happens in the world is out of our control, we can empower teams by taking ownership to cultivate and build their own sense of joy.

Our infection prevention team at the Children's Hospital of Philadelphia (CHOP) recently dedicated a full-day retreat to practicing gratitude to foster our sense of joy and well-being. We partnered with the program manager of strategic talent management and learning from CHOP's Center for Professional Growth within human resources to create a program that engaged members of the team in reflection, based on the work of Fred Bryant, PhD, a social psychologist at Loyola University of Chicago and a leading expert on savoring. We focused on one of the six pillars of positive psychology, Positive Emotions, through the science of savoring. Savoring requires a deliberate, mindful awareness of the past, present, or future through the lens of gratitude, basking, luxuriating, and marveling.

Thanksgiving is the practice of appreciation and being grateful. Our team reflected on the past few years and expressed gratitude for "making it through the pandemic and surviving something [for which] we had no roadmap." A sense of belonging was also emphasized, "The team provides family outside of family" and this is a "safe space to be yourself." Team members also appreciated "flexibility for work/life balance," and "growth opportunities."

Basking evokes the sense of pride and ability to receive praise, which encourages us to "sit in" the experience of your accomplishment, like the feeling one may experience from basking in the warmth of the sun on your face. When we reflected on certain accomplishments from the past year, the team felt they could bask "in new recognition and acknowledgement of our team for our work during the pandemic." Another theme was appreciating the significance of "the conclusion of big projects" or "ending of an outbreak."

Luxuriating is a physical sensation like indulging in our senses, such as biting into a delicious dessert. When thinking about accomplishments that our team can luxuriate in, one theme was "increased team support," especially for on-call responsibilities. This highlights the feeling of being supported and the heightened sense of trust shared among the team, illustrated through specific actions. The team also luxuriated in the new opportunity to "work from home" and having time to learn and explore "new people, new knowledge, and new roles."

The Infection Prevention and Control team for the Children's Hospital of Philadelphia healthcare system.

Marvel is a feeling of awe or wonder, as one may experience when watching a sunset. Our team marveled at the "variety of expertise across the team" and the resources available across the organization. There was also a marveling at the constant and unwavering "focus on the patient" as the foundation for all that we do and the resiliency cultivated throughout the past number of years.

As we took the time to practice the science of savoring around our teams accomplishments we experienced an increase in our sense of connection, recognition, and our sense of joy.

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REBUILD AND REIMAGINE YOUR TEAM

BY SANDY SMITH

The problems were mounting. When Maria Vacca, MSN, RN, CIC, FAPIC, was promoted to IP director of a regional division at Jefferson Health System, she was faced with low morale, open positions, and a surveillance that was way behind. Adding to the stress: On her first day in her new role, The Joint Commission surveyors showed up for the triennial survey. Vacca, along with her colleague Mary Ehly, BSN, RN, CIC, described the experience in the APIC Annual Conference session "Chaos to Cohesion: Building an IP Team."

The Jefferson Health System is a behemoth in Pennsylvania and New Jersey. Affiliated with Thomas Jefferson University, the hospital is about to mark its 200th anniversary. Vacca and her team are responsible for four campuses in the central city, including the 957-bed Thomas Jefferson Hospital, Jefferson Hospital for Neuroscience, Jefferson Methodist, community hospital, and Magee Neurological Rehabilitation. Her departmental responsibilities also include oversight of a surgery center and numerous outpatient clinics.

The pandemic had taken a toll on her team. "As I'm sure many of you experienced during COVID, our IPs were called to do just about everything," she said. "Those who were nurses were asked to help at times on the nursing units. It was scary. We were seeing it all. We were trying to rapidly interpret guidelines and incorporate them into our policies. Every time an enterprise broadcast was distributed with the updated information, we would get inundated with questions and emails. Also, as a result of prioritizing during the pandemic, our surveillance fell way behind."

At the time, much of the staff was new. "And they just left."

Turning Chaos into Cohesion

Vacca had to rebuild and reimagine her team. The team that she inherited included three existing IPs, including two who had less than four years' combined experience. A seasoned IP worked onsite at the community hospital.

When it came to reimagining the department, Vacca and Ehly leaned heavily on Jefferson's mission, vision, and values as a guide. Over a six-month period, Vacca worked to rebuild the team, which included converting an IP position to a manager and bringing Ehly from Jefferson Methodist. Ehly handles the day to day, including the huddles, while Vacca sets strategic vision. Vacca and Ehly rotate on-call duties, two weeks at a time.

The two vacant positions were filled with experienced IPs, and a vacant database position was filled as well. All IPs now have their CIC certifications or are studying for them. The neurological rehab facility is staffed with one per-diem staff member working about 20 hours per week, with Vacca and Ehly handling other duties there. "It really required a good deal of our time," Vacca said. "And we really didn't have a lot of rehab experience. It initially took up more of our time than the big hospital that does transplants and is a Level I trauma center."

Teamwork = Dreamwork

With the positions filled, it was time to build a cohesive unit. Some steps were obvious and simple. Others took more work—but paid off well.

One action item was to reconfigure offices. Previously, the team had shared an office space with other departments and IPs were interspersed with other professionals from quality, regulatory, and risk. Regrouping everyone improved collaboration. The hallway is the location of a quick 10-minute meeting at the start of each day. "It's easy to gather everyone because our offices are all so close," Ehly said.

A whiteboard allows for quick communication, including information on who is out of the office or working from home, who is on environment of care rounds, and who is handling phone coverage since the department doesn't have an administrative assistant. It's also a place for team notes, infection clusters, and team review of surgical site infections and a listing of units with central line-associated bloodstream infections and catheter-associated urinary tract infections. A nearby board lists projects that require an infection control risk assessment (ICRA).

To accommodate the ICRA listings, "We had so many projects in our hospital that we had to put up a new board," Ehly said.

MARY EHLY AND MARIA VACCA

A monthly team meeting begins with a wellness activity and an ice breaker. That focus on wellness extends into a commitment to work-life balance for the team.

"As I became a leader, I realized how important it is to value your people and give them that work-life balance," Vacca said. "When you do, it makes them know they're valued and it makes them want to give 110 percent."

Staff can work from home two times per month or choose to work four 10-hour days instead of five 8-hour days. Flexible scheduling allows them to work around things like doctors' appointments or kids' activities.

The work-from-home days are often devoted to surveillance, and that is helping to catch up on what was once a backlog of cases due to the pandemic and ACT 52 in the state of Pennsylvania, which requires them to report all hospital-associated infections, Vacca said.

Incorporating DEI

While Vacca and Ehly continue to refine their individual responsibilities, they lead a team that focuses on diversity and inclusion. "We encompass all the generations in our team," Vacca said. "That's diversity, too, having all the generations working together."

The team also includes different races and religions, but respect is at the core of it all. When the team hired a new IP whose religion didn't celebrate birthdays, recognition at the monthly staff meeting was put at the end of the meeting, allowing the IP to be excused.

"It is important," Vacca said. "We all have feelings, and we try really hard to take that into consideration. It's really made for a great team."

Vacca and Ehly mentor their team, working with them during annual performance evaluations to set goals for the coming year.

The team is making their impact felt throughout the health system, too. They participate in environment of care rounds. "It's important that we're part of a multidisciplinary team," Vacca said. "We're continuing to educate and re-educate. Since COVID, everyone has forgotten what airborne isolation is. We can remind our team during the huddle: If there's anyone in airborne isolation, get out there and check on them."

It has taken a while to get there, but now, when there's a need, there are IPs who can educate, provide surveillance, and work to make sure that the facilities under their oversight are as safe and chaos-free as possible. Ps

Sandy Smith is a freelance writer for Prevention Strategist.

SET YOUR HAI SURVEILLANCE ON FHIR

BY SANDY SMITH

Those attending the APIC Annual Conference session "The Future is Here! NHSN on FHIR: Modernizing HAI Surveillance" got an understanding of what FHIR (pronounced 'fire') will look like and how it will impact reporting. Health Level Seven (HL7)® FHIR®—Fast Healthcare Interoperability Resources—should make for faster reporting once a few hurdles are overcome.

The National Health Safety Network (NHSN)'s modernization efforts will release two new modules using FHIR for data submission in 2024: Healthcare-facility onset, antibiotic treated *C. difficile* infection (HT-CDI) and hospital onset bacteremia and fungemia (HOB).

Kristi Betz, MD, PhD, measure development and validation unit lead for surveillance branch at the Centers for Disease Control and Prevention, and Elizabeth Stutler, MPH, CIC, product manager at Lantana Consulting Group (Lantana), a leader in health-data quality and integration, previewed the modernization efforts of the NHSN and the impact that FHIR can have.

FHIR defines how healthcare information can be shared down to the patient level. Data can come from a variety of sources, including electronic health records (EHRs) and health information exchanges (HIEs). Stutler noted that it is based on internet standards widely in use in other sensitive industries, like banking. So, though it is new to healthcare, its data protection is well-tested in other fields.

In the past, healthcare technology used other highly specialized HL7 standards. "When you needed help, there were very few computer developers who had the expertise. FHIR opens us up to more professionals who have the skill set to do the work necessary for proper data exchange," Stutler said.

The goal, Stutler said, is to reduce the reporting burden on staff while improving patient safety.

Stutler asked attendees how much time they spend on surveillance per week. The vast majority said it was in the 10-20 hour per week range. "This really is about time savings," she said. "Think about all the reasons you are spending time on HAI surveillance. There is a better way to do it."

Behind-the-Scenes Technology

NHSN is working with 10 NHSN Collaborative (NHSNCoLab) facilities on developing and testing FHIR and other aspects of its modernization (**https://www.cdc.gov/nhsn/nhsncolab/index.html**). Most EHR solutions are ready for FHIR.

NHSNLink is an open-source application under development by Lantana that sits behind a firewall at the Centers for Disease Control and Prevention. It uses the patient census and a measure definition to create queries that retrieve data from the EHR. NHSNLink needs two things to get that data: "It needs to know the measure definition, in order to know what it's looking for," Stutler said. "You can't just go ringing the doorbell of an EHR." Providing a list of patient IDs from a census serves this purpose.

"Because of the standards built into it, NHSNLink can take data out of an EHR and aggregate it," Stutler said. "This can be consistent across hospitals. We have the data. We know how the data should look. How do we get from point A to point B? NHSNLink can move that data."

Once the application knows what and who it is looking for, it pulls the data from the EHRs, then bundles and submits the data. This represents a shift in methodologies, since currently, data must be "pushed" to NHSN, and the burden of case-finding falls on to the infection preventionists.

Stutler explained that in order for the data to be meaningful, data standards between facilities need to be consistent. The future state Stutler illustrated in the presentation includes data provided using nationally recognized standards that is agnostic to vendors and systems and data that can be pulled with no waiting needed with measures that can be adapted after the data is transmitted.

Common Language

Dr. Betz discussed the two HAI areas more in depth, including some changes that will be required.

One of the key differences relates to the surveillance definition of *C. diff* infection. Currently, a final positive laboratory assay is


ELIZABETH STUTLER

sign enough. With the new FHIR methods, it also requires the use of certain antibiotics prescribed within a set time frame.

"We want to decrease the burden and time you have to spend identifying events," Dr. Betz said. "We also want to improve the consistencies with which CDI is identified within and across hospitals."

In the near term, facilities will report based on the lab identification and, beginning in 2024, meet the higher standard of lab identification and antibiotic use. Longer term, the lab ID measure alone will be retired. And, with the rich data from FHIR at the patient level, facilities can be provided additional metrics for quality improvement and risk adjustment.

The hospital-onset bacteremia and fungemia module broadens surveillance of bloodstream infections regardless of organism or association with a device. "Why do we want to broaden the surveillance and why do we care about HOBs separate from CLASBI?" Dr. Betz said. An upcoming study found that there were more than three times as many blood infections as central-line associated blood infection events. "These events are currently not under surveillance, but they impact our patients," Dr. Betz said. "We think this is an important population to put under surveillance."

Another benefit of automated definitions is it removes potential biases. "We can think about the differences in IP staffing, which can affect reviewing and reporting potential events," Dr. Betz said. "There are related changes in diagnostic practices. Automated definitions can remove the consistencies of interpretation of HAI definitions."

NHSN continues to work to define the terminology "to make them as straightforward as possible," Dr. Betz said.

All acute care hospitals enrolled in the NHSN Patient Safety network will be eligible to participate in the HT-CDI and HOB FHIR modules once they are rolled out next year. Most EHR vendors have FHIR capabilities, though facilities may need to enable the application at the system level. PS

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LONG-TERM CARE INFECTION PREVENTION CAPACITY BUILDING

BY SANDY SMITH

When a state law began requiring an infection prevention professional at each long-term care (LTC) facility in California, the Greater Los Angeles (GLA) Chapter of APIC saw an opportunity to help better serve the broader field of infection prevention and control (IPC) with a concerted effort to reach these facilities. They took a systematic approach to help build capacity among infection preventionists (IPs) in LTC facilities and skilled nursing facilities (SNFs). Jessica Rosende, MPH, CIC, president of the GLA Chapter of APIC, and Walteena Brooks, LVN, co-chair of the chapter's SNF LTC Committee, discussed the keys to success in the APIC Annual Meeting session "Long Term Care Infection Prevention Capacity Building."

WALTEENA BROOKS

LTC facilities provide services to people who are unable to live independently. A SNF provides services because of an injury, disability, or illness. Many facilities are certified as both a SNF and nursing home, Brooks said. A non-skilled LTC facility can be an assisted living facility or senior living facility, both of which provide assistance with daily living tasks.

SNFs, in particular, can create infection prevention challenges—since most

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include more than one patient and a shared bathroom.

"Sometimes there is no shower," Rosende said. "Just imagine all the infection prevention challenges from the layout and the built environment."

When COVID-19 occurred, it was not left to the imagination as the virus spread and death rates were high in LTC facilities across the country. The California General Assembly acted, requiring SNFs to have a dedicated IP.

"In many cases, this means they were pulled from other roles," Rosende said. "We know that having a dedicated IP increases engagement and best practices. In long-term care settings, the patients and staff get to be very close. The LTC staff and IP witnessed their family-like members suffer and pass because of COVID. You can imagine that the IP was under a lot of stress. For all these reasons and more, there is a clear need for LTC infection prevention and capacity building."

A Role to Play

The GLA Chapter realized that it had the resources and expertise to provide an answer for SNFs, but it didn't assume that it had all the answers. "We asked, 'Who are the stakeholders and what education is already taking place?'" Rosende said. "We realized slow and steady wins the race. We knew there was a need for building the infection prevention in the LTC setting. We just needed to determine how."

Rosende said the GLA Chapter's membership had been largely comprised of IPs who worked in acute care settings, vendors, and public health professionals.

"What could GLA do that was different from the health department? This led to having a conversation with the board and to having monthly conversations for LTC IPs. We invited the LTC IPs and the administrators to our larger GLA Chapter business meeting. We realized there was a slightly different need for education. Keep in mind that this was mid-pandemic and just one arm of the GLA Chapter and what we developed."

Five Pillars

The GLA Chapter's board of directors created a strategic plan that focused on five pillars, but one of the most important keys to success was to create the SNF committee co-chaired by those who work in SNF and LTC settings. The co-chairs serve on the GLA Chapter's board of directors, a move that Brooks and Rosende termed a success. That fulfilled the pillar of "representation."

While the two co-chairs managed on their own for the first year, other committee members joined them this year. "They are IPs that work in skilled nursing facilities. Their responsibilities are to support the co-chairs in developing curriculum and talks specific for SNF," Brooks said.

Having the committee also supports the GLA's larger goals of succession planning and expansion, Rosende said.

Brooks now works for the Los Angeles County Department of Public Health but has worked in LTC and post-acute care settings as a licensed nurse, director of staff development, and an IP.

She assumed the role of creating education for SNF IPs. The SNF IPs had a monthly virtual meeting, which took place immediately preceding the chapter meeting—and they were encouraged to attend both events. The SNF-specific education has ranged from basic topics like PPE and hand hygiene to more advanced like antimicrobial stewardship programs, ICRA program plans, and QAPI.

Others have focused on how to work with environmental services to ensure a clean facility. "When the pandemic happened I started focusing on, 'Are the SNFs using the recommended cleaning and disinfection wipes?'" Brooks said. "We reviewed the basic principles of disinfection and cleaning. We reviewed best practices by giving real-life examples."

Brooks also talked about developing vaccination programs for staff and residents and reviewed regulatory requirements for vaccinations like influenza.

After the first year, SNF IPs were polled. "We learned that a lot of the IPs wanted to learn more about some of the same topics," Brooks said. "So that's what we gave them."

Deeper dives into PPE, QAPI, microbiology basics, and HAI prevention were on tap for the second year of education.

Ensuring that SNF IPs were able to attend the education was important, too. In 2022, the chapter provided six membership awards and nearly doubled that in 2023, allowing recipients to have funding for professional development, conferences, and training.

Ongoing Success

The GLA Chapter teamed up with another Los Angeles APIC Chapter for a joint mini-conference and included a panel discussion on connecting IPs throughout the continuum of care. "The purpose was to address key conversations which fell under the realm of communication between the two worlds," Rosende said.

A questionnaire sent in advance of the discussion found that most of the collaboration occurred proactively when a patient was transferred between facilities.

"This panel discussion allowed for a better understanding of perspective," Rosende said. "One key point was the importance of engaging with one another and keeping the line of communication open."

Partnerships round out the list of important keys to success. "Our local public health department has been an incredible partner," Rosende said. In addition to Brooks, other public health representatives serve on the GLA Chapter board.

The board's strategic plan also included the need for community for SNF and LTC IPs. "The common threads are meeting monthly, ensuring people have time to talk, to share, and to engage," Rosende said. "We ask for feedback at each meeting, ask speakers to share personal experiences, and create incentives for IPs to join and participate."

Now, two years in, LTC capacity building continues—as do some of the familiar issues like retention, stress, burnout, and being a solo IP. "As we plan for the future, we are focusing on increasing engagement and interaction," Rosende said.

There is plenty of room to grow, too, with 342 SNFs in the area. While attending the SNF meeting does not require APIC Chapter membership, Rosende encourages that too. "We want to really focus on growing our attendance." PS

Sandy Smith is a freelance writer for Prevention Strategist.

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INTRODUCING STATISTICAL PROCESS CONTROL (SPC): APPLICATION TO INFECTION PREVENTION

BY EMILY GADDAM

Healthcare-associated infections (HAIs) pose a significant threat to patient safety, prolong hospital stays, and increase healthcare costs. **Statistical Process Control (SPC)** is a data-driven methodology used to proactively identify drift in processes and a useful strategy to combat HAIs.

History and Principles of SPC

Walter A. Shewhart, an American physicist and engineer, pioneered SPC in the 1920s. Shewhart recognized that well-controlled processes lead to consistent, high-quality products. He introduced control charts as a tool to assess process adherence. Monitoring furnace temperature, for example, allows for identification of deviations beyond expected limits. These deviations could indicate an underlying issue, such as malfunctioning heating element, that may adversely affect product quality. SPC's real-time monitoring allowed for early issue detection and enhanced product quality.

Subsequently, W. Edwards Deming, a statistician, contributed to SPC's wider adoption in quality management. An advocate for data-driven decision-making, Deming introduced SPC to Japan, playing a vital role in its industrial resurgence. Collaborating with manufacturers like Toyota, he used control charts to monitor parameters like defect rates and downtime, leading to improved quality control. Deming's management philosophy, known as Total Quality Management, gained traction in American industries.

During the 1980s and 1990s, healthcare organizations recognized the need to elevate quality of care. The Institute of Medicine's influential report "To Err Is Human" in 1999 brought attention to medical errors and patient safety.[1] This coincided with the rise of champions of Total Quality Management who advocated for establishing quality improvement teams.[2] This convergence of factors paved the way for a culture of continuous improvement in patient safety and overall healthcare quality.

Control Limits and Variation

At the core of SPC lies the principle of variation, recognizing that all processes naturally exhibit variability. There are two types of variation:

1. **Common or random cause variation:** Common cause variation (also known as random or unassignable variation) is inherent in the design of the process and is caused by regular, natural, or ordinary factors. It affects all outcomes of the process and results in a "stable" process that is predictable. This type of variation may represent the expected fluctuations in infection rates due to factors like seasonal changes or patient demographics.
2. **Special cause variation:** On the other hand, special cause variation (also known as non-random or assignable variation) is due to irregular causes that are not inherent in the process's design. Special cause variation leads to an "unstable" process that is not predictable. Special cause variation might indicate sudden spikes or drops in infection rates due to specific events or factors, such as changes in protocols or the introduction of new equipment.

Control limits, typically set at three standard deviations from the mean, play a crucial role in distinguishing these variations and enabling effective process monitoring.

Strategies for Selecting Control Limits

Historical Data:

Historical data is key for setting control limits that represent the process' true variability. Limited data, for instance a rare surgery at a critical access hospital, may lead to misleading results, so having at least 20 data points on the chart is recommended.[3]

Preliminary Data Analysis:

If historical data is available, conduct a thorough preliminary analysis to identify any existing patterns, trends, and outliers.

Benchmarks and Guidelines:

In the absence of sufficient historical data, healthcare facilities can refer to industry benchmarks or established guidelines. These benchmarks provide valuable insights into the typical performance of similar processes in other facilities.

Expert Opinion and Clinical Input:

Involving subject matter experts helps in understanding the process's expected variability and assists in setting more informed initial control limits.

Gradual Adjustment:

Begin with wider control limits initially, especially if historical data is limited or unavailable. As more data becomes available and the process stabilizes, gradually narrow the control limits to better reflect the process's true variability.

Testing a Process Change:

If a special cause is detected, calculate new center line and control limits for the post-change data, using the same method as usual but only with the post-change data.

By carefully selecting the initial control limits, healthcare facilities can lay the foundation for effective SPC implementation. Accurate control limits allow for the timely detection of special cause variations, helping healthcare professionals identify areas that require immediate attention and targeted interventions.

Example: ***Adherence with the two-provider urinary catheter insertion protocol serves as an example of utilizing SPC in infection prevention.***

Calculating Mean, Standard Deviations, and Control Limits in a Spreadsheet Program

Calculating Mean:

1. Enter your data values in a column or row.

	A	B	C	D
1	Month	Compliant observations	Total observations	Compliance rate
2	Jan	85	100	0.85
3	Feb	83	100	0.83
4	Mar	85	100	0.85
5	April	82	100	0.82
6	May	82	100	0.82
7	June	88	100	0.88
8	July	87	100	0.87
9	Aug	88	100	0.88

2. Use the formula **"=AVERAGE(range)"** where "range" is the range of cells containing the data values, in this case, adherence rate.

=AVERAGE(D2:D9)

Calculating Standard Deviation:

1. Use the formula "=STDEV(range)" where "range" is the range of cells containing the data values.

=STDEV.S(D2:D9)

2. To calculate 3 standard deviations, you can use the formula "=3*STDEV(range)".

=3*STDEV.S(D2:D9)

These formulas are generally applicable across different spreadsheet software.

Calculating Control Limits: When adherence rates fall within this range, it indicates that a significant proportion of insertions follow the two-provider protocol, representing an in-control process with a random/common cause variation pattern. However, if the adherence rate exceeds the upper or lower limit, it signifies a special cause variation, prompting investigation and corrective action.

1. **Lower Control Limit** is the mean (.85 or 85%) minus 3 standard deviations (3*0.025 or 7.5%) = 77.5%.

=AVERAGE(D2:D9)

Minus

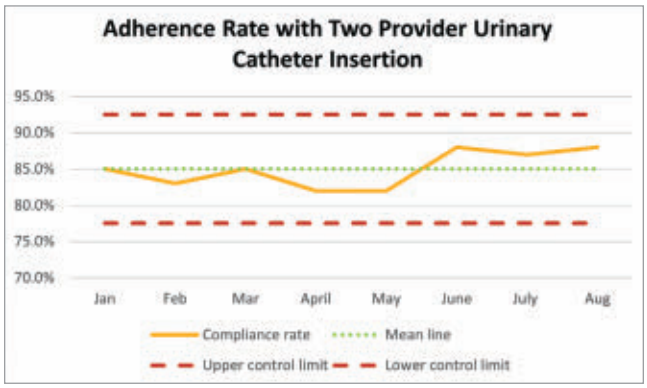
=3*STDEV.S(D2:D9)

2. **Upper Control Limit** is the mean (.85) plus 3 standard deviations (3*0.025 or 7.5%) = 92.5%.

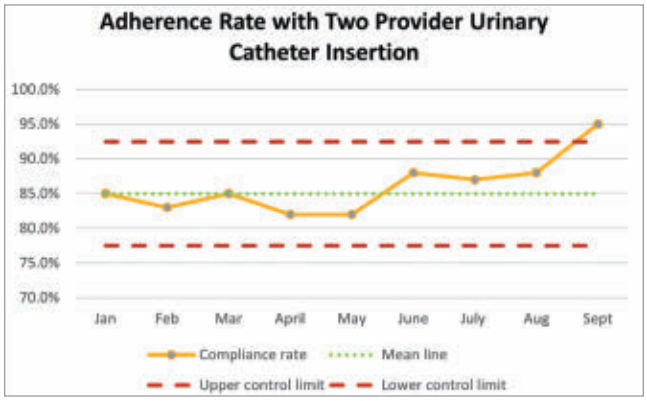
Now with the control limits defined, we can graph our data. It's important to freeze the control limits and the center line at the pre-change levels and then extend them into the post-change period. The mean and control limits remain consistent month-to-month, and thus, these frozen values are copied down in columns E, F, and G throughout the entire duration of the graph.[4]

	A	D	E	F	G
1	Month	Compliant rate	Mean line	Upper control limit	Lower control limit
2	Jan	85.0%	85.0%	77.5%	92.5%
3	Feb	83.0%	85.0%	77.5%	92.5%
4	Mar	85.0%	85.0%	77.5%	92.5%
5	April	82.0%	85.0%	77.5%	92.5%
6	May	82.0%	85.0%	77.5%	92.5%
7	June	88.0%	85.0%	77.5%	92.5%
8	July	87.0%	85.0%	77.5%	92.5%
9	Aug	88.0%	85.0%	77.5%	92.5%
10	Sept	95.0%	85.0%	77.5%	92.5%

The data was selected, and a line graph with markers was inserted.



An unusually high adherence rate may be attributed to an effective educational campaign or awareness program that led to improved adherence. Conversely, a higher-than-expected rate could be due to staff audit fatigue, leading to superficially marked "yes" responses without proper adherence to the two-provider protocol. By monitoring adherence rates with these control limits, we can promptly detect variations and identify potential reasons behind the fluctuations.



SPC rules: The SPC rules are based on mathematical principles and empirical observation. They help us detect special cause variations, those that are highly improbable based on our historical data and discern unusual patterns from regular variability. The rules help us avoid unnecessary interventions and focus on targeted responses only when needed, leading to efficient infection prevention interventions. Familiarize yourself with these rules as they have been included on the CBIC exam in the past.

1. Any point above the Upper Control Limit (UCL) or below the Lower Control Limit (LCL): A data point outside the control limits signals a potential special cause.
2. One of two points above +2 Standard Deviations (SD) or below –2 SD: Two consecutive data points beyond two standard deviations from the mean suggest an unusual variation.
3. Four of five points above +1 SD or below –1 SD: Four out of five consecutive data points beyond one standard deviation from the mean signify excessive variation.
4. Eight consecutive points above or below the Center Line (CL): Eight or more consecutive data points on one side of the mean indicate a persistent shift or trend.
5. Six consecutive points increasing or decreasing: Six consecutive data points showing a consistent increase or decrease represent an abnormal pattern in the process.
6. Fifteen consecutive points between +1 SD and –1 SD: Fifteen consecutive data points within one standard deviation from the mean indicate a lack of significant variation.
7. Fourteen consecutive points alternating up and down: Fourteen consecutive data points alternating in a predictable up and down pattern suggest a potential special cause of variation.
8. Eight consecutive points above +1 SD and/or below –1 SD: Eight or more consecutive data points above one standard deviation and/or below one standard deviation indicate a potential special cause.[5]

Note: The acceptance and application of specific rules may vary depending on the context and industry. Some organizations or experts may have preferences for slightly different rules or additional criteria based on their specific processes, historical data, or industry standards.

Benefits and Challenges of SPC in Infection Prevention

Formal statistical tests can pose challenges for healthcare professionals, especially those without a strong mathematical background. On the other hand, failing to monitor processes can result in missed opportunities for improvement and jeopardize patient safety.

In this context, SPC offers a valuable compromise. SPC rules provide a simpler and more intuitive way to identify special cause variations using a smaller number of data points. This allows for real-time monitoring of processes and facilitates timely interventions. For example, if we detect a reduction in our two-provider urinary catheter insertion, we may be able to intervene before we see an increase in catheter-associated urinary tract infections throughout the hospital.

Implementing SPC in healthcare settings is not without its challenges. One major challenge is the requirement for a commitment to data collection and analysis. SPC relies heavily on accurate and reliable data, which necessitates consistent data gathering and monitoring efforts. Additionally, healthcare organizations may face resistance from staff or management when introducing SPC, as it may require changes to established practices or routines. Overcoming these challenges requires effective communication and education about the benefits of SPC, as well as involving key stakeholders in the process.

Conclusion

Adopting SPC principles allows infection preventionists to create a safer environment through data-driven decision-making and continuous improvement efforts. SPC is among the many quality improvement tools that can elevate our practices, making it essential to be familiar with its benefits.

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Emily Gaddam, BSN, RN, CIC, is a nurse epidemiologist, infection prevention consultant, and health delivery scientist dedicated to quality and patient safety.

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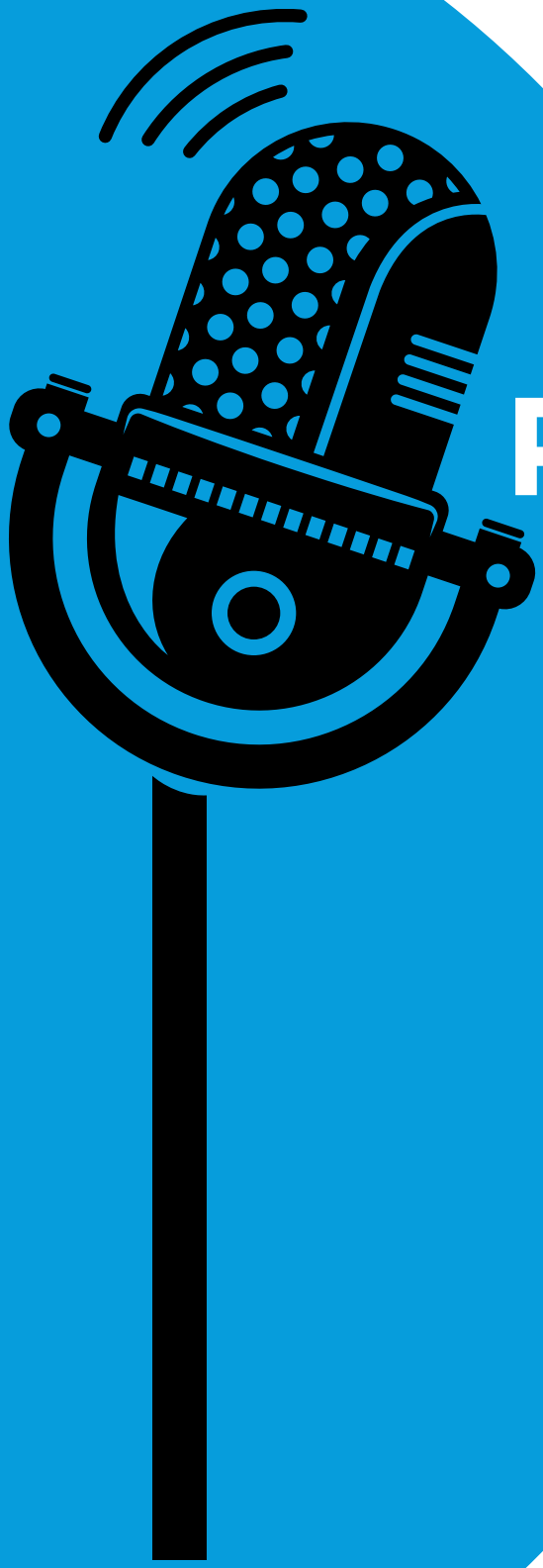
PITAS SURVEY:

An Interview with Monika Pogorzelska-Maziarz



Welcome to this interview with Dr. Monika Pogorzelska-Maziarz, associate professor at the Jefferson College of Nursing and co-principal investigator of the Prevention of Infections Through Appropriate Staffing (PITAS) study. In this interview, we will delve into the significance of the study in revolutionizing infection prevention and control (IPC) staffing and resource allocation strategies for acute care hospitals and highlight how your participation can shape the future of IPC.

***Prevention Strategist:* Can you give us an overview of why the PITAS study is needed in the context of infection prevention and control?**

Monika Pogorzelska-Maziarz: Over the last decade, the healthcare landscape has changed significantly and the scope of infection preventionists' (IP) responsibilities has expanded dramatically. As IPs have taken on broader responsibilities, the traditional staffing ratios may no longer

be sufficient to cope with the evolving challenges in infection prevention and control. The PITAS study aims to validate appropriate staffing levels for infection prevention departments to ensure the best possible patient outcomes. This research is urgently needed to enhance patient safety, reduce HAIs, and improve the overall quality of care in acute care hospitals.

PS: The impact of the COVID-19 pandemic on healthcare systems and infection prevention departments has been profound. Can you elaborate on how the PITAS study addresses this aspect and why it's essential to quantify this impact?

MPM: The COVID-19 pandemic has been an unprecedented global health crisis that has severely strained healthcare systems worldwide. Infection preventionists have been at the forefront of the battle against the virus, facing immense challenges in managing infections and ensuring the safety of patients and healthcare workers. The pandemic has also highlighted the crucial role that IPs play in responding to emerging infectious diseases and public health emergencies.

Quantifying the impact of the COVID-19 pandemic on infection prevention departments is essential for several reasons. First, it allows

us to assess how the pandemic has affected staffing levels, resource allocation, and overall IPC infrastructure. By understanding the pandemic's impact on these aspects, healthcare institutions can better prepare for future public health crises and strengthen their infection prevention and control capabilities.

Second, the pandemic has impacted HAI rates and rates of antibiotic resistant infections. By studying these changes, we can identify new challenges and opportunities for infection prevention strategies. This information will enable us to adapt and optimize infection prevention protocols to mitigate the risks associated with future infectious disease outbreaks.

PS: The collaboration of multiple research institutions and investigators in the PITAS study is impressive. Can you shed light on how this collaboration strengthens the research and its potential impact?

MPM: Collaboration is at the heart of successful research, and the PITAS study exemplifies the power of partnerships in advancing infection prevention and control. Bringing together experts from different institutions, including Thomas Jefferson University, Rutgers University, Columbia University, and the RAND Corporation, ensures a multidisciplinary approach to the study. Each institution brings unique perspectives, expertise, and resources to the table, enriching the study's design, implementation, and analysis. We are also very happy to have the support of APIC and believe the study will provide evidence to help APIC advance its mission and vision.

PS: How does the PITAS study align with the vision and mission of the Association for Professionals in Infection Control and Epidemiology (APIC)?

MPM: Our research seeks to empower IPs and enhance their capacity to prevent infections effectively. The study's findings will directly contribute to the advancement of infection prevention and control as a science and practice. By generating evidence-based recommendations, the PITAS study aims to influence organizations, policymakers, and healthcare leaders to recognize the critical role of IPs and invest in appropriate staffing and resources. Ultimately, the study aspires to make a significant impact on patient safety and public health, aligning perfectly with APIC's vision of creating a safer world through infection prevention.

PS: The participation of infection control departments in acute care hospitals is critical to the success of the PITAS study. Can you elaborate on the benefits of their involvement and how it can influence future infection prevention strategies?

MPM: IPC departments in acute care hospitals are the heart of infection prevention efforts, and their participation in the PITAS study is pivotal. By participating, IPs have a unique opportunity to contribute directly to the advancement of their profession. Their insights and experiences are invaluable in shaping evidence-based IPC practices. In addition, their participation provides an opportunity to validate existing staffing models and guidelines. As the responsibilities of IPs continue to expand, it is crucial to ensure that the staffing levels align with the workload and demands placed on them. By actively participating in the PITAS study, IPs can influence future guidelines and policies, leading to more appropriate resource allocation and support for their departments. Every vote counts!

PS: The study's data collection involves completing the PITAS Survey and sharing NHSN data. Can you walk us through how this data is used and why it is vital to the study's objectives?

MPM: The PITAS study collects data through two data sources: the PITAS Survey and the National Healthcare Safety Network (NHSN). The PITAS Survey collects information directly from acute care IPs, seeking insights into their department's staffing, infrastructure, and IPC practices. The NHSN provides valuable quantitative data on HAI rates, antimicrobial resistance, and other infection-related outcomes. We are asking participating IPs to join the PITAS Study NHSN group to share with us already collected, de-identified data directly through NHSN. By linking the two data sources, we can correlate IPC resources and staffing levels and infection rates, enabling us to identify patterns and trends that may not be apparent through surveys alone. The integration of survey data with NHSN data enriches the study's findings and allows us to develop evidence-based recommendations that can lead to more effective IPC strategies.

PS: The confidentiality of data is crucial in research. How does the PITAS study ensure the privacy and security of data provided by participating hospitals?

MPM: The protection of data privacy and confidentiality is of utmost importance in the PITAS study. We understand the sensitivity of the information provided by participating hospitals and have implemented several measures to safeguard its privacy and security.

First, all data provided by hospitals is de-identified, meaning that any personal identifiers are removed from the dataset. This ensures that no individual or hospital can be directly identified from the data that is shared with us.

Second, the PITAS study has undergone rigorous ethical review and approval by the institutional review boards (IRBs) of both Thomas Jefferson University and Rutgers University. IRBs are independent committees responsible for ensuring that research studies involving human subjects comply with ethical standards and protect participants' rights and welfare. Third, all data collected for the PITAS study, including de-identified NHSN data, is stored in secure databases with restricted access. Only authorized researchers have access to the data for analysis purposes. Finally, in any public reports or publications resulting from the study, all findings are presented in aggregated and anonymized forms. No individual hospital or IPs will be identified in any reports or publications.

PS: What would you like to say to all the IPs out there about their participation in the PITAS study and the impact they can make on the future of IPC?

MPM: To all the dedicated and hardworking IPs, thank you for considering participating in the PITAS study. Your participation in the PITAS survey is vital to the success of the study and our ability to develop evidence-based staffing models, infrastructure recommendations, and infection prevention strategies. Your participation will contribute to better resource allocation, enhanced patient safety, and reduced HAIs across the country. PS

Monika Pogorzelska-Maziarz, PhD, MPH, CIC, FAPIC, FSHEA, is associate professor and assistant director at Thomas Jefferson University in Philadelphia, PA.

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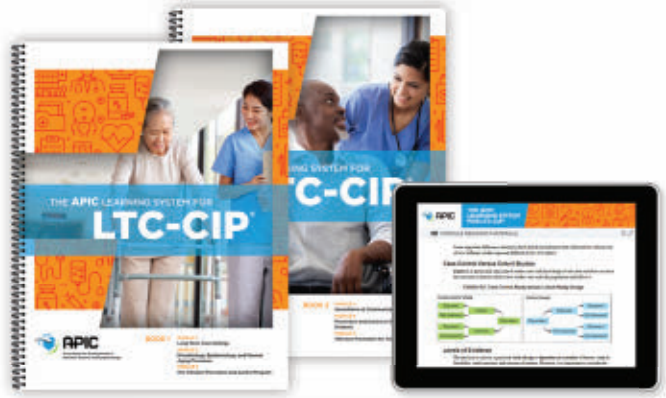

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appraisal, recommendation drafting, public comment, and the AORN GAB vote.

The AORN GAB vote ensures that all organizations solicited to support the publication of evidence-based perioperative guidelines have provided their subject matter expertise and endorsed the recommendations. Several notable organizations participating in this effort include the American College of Surgeons (ACS), the Society for Healthcare Epidemiology of America (SHEA), which publishes a compendium of strategies to prevent surgical site infections, the American Society for Healthcare Engineering (ASHE), and the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) with standards for air handling in operating rooms (ORs). As the APIC liaison, my role is to ensure that guidelines being presented for APIC support are reviewed against guidelines that APIC has published or collaborated on in areas such as environmental hygiene, hand hygiene, prevention of healthcare-associated infections, isolation, and high-level disinfection and sterilization practices. Review of and feedback on the guidelines reduces the potential for conflicting guidance to healthcare providers.

The last steps for AORN practice guidelines are publication and education. AORN establishes an educational plan that may include member webinars, a gap analysis and/or audit tool(s), and case studies, as well as provide ongoing updates.

AORN Guidelines Review: 2023-2024

AORN 2023 Practice Guidelines were the largest update ever released, with eight critical updates and over 70 recommendations. In the table are key highlights that infection preventionists (IPs) might find helpful when reviewing these guidelines.

How do you obtain the updated guidelines? As with the APIC Text, AORN Practice Guidelines are available online for purchase in either a view-only or interactive platform with access to multiple support tools and updates throughout the year. Many IPs will seek out the OR educator and/or manager to access the guidelines rather than utilize their budget for purchasing.

As IPs, we are responsible for ensuring that our facility's departmental infection prevention and control policies and procedures have been developed utilizing current evidence-based practice guidance and science. With respect to our surgical services, AORN guidelines for perioperative practice are an essential resource. Knowing the rigorous process that AORN employs for guideline development and updates can be valuable in promoting the adoption of these practices. PS

Reference

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Becky Lewis is the corporate director for infection prevention at INTEGRIS Health in Oklahoma, with over 14 years of infection prevention experience.

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