

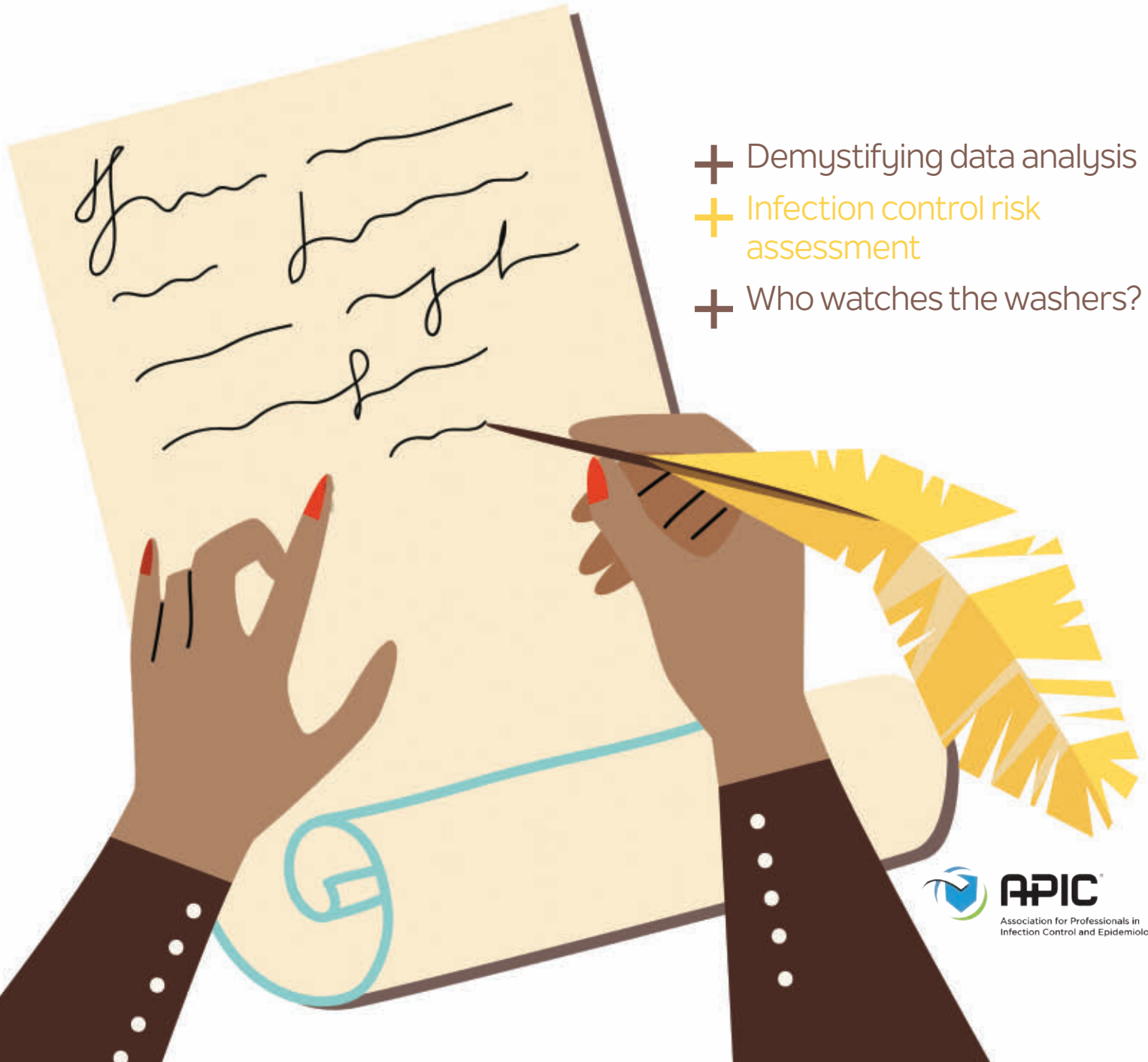
PREVENTION STRATEGIST

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

REDUCING THE RISK
OF INFECTION
www.apic.org

SUMMER 2023 | vol. 16 issue 2

LETTERS FROM EMERGING LEADERS



- + Demystifying data analysis
- + Infection control risk assessment
- + Who watches the washers?



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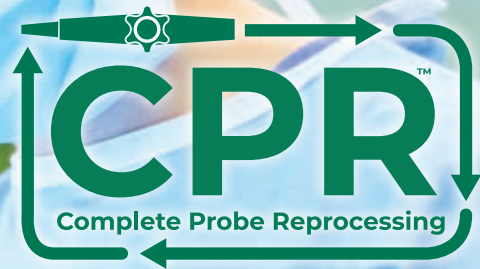
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Patricia Metcalf Jackson, RN, MA, BSN, CIC, FAPIC
2023 APIC PRESIDENT

The Power of One

The sun is the closest star to Earth, and even at a distance of 150 million kilometers, its gravitational pull holds the planet in orbit and provides light and heat which make it possible for life to exist on the planet. Joan of Arc at the age of 17 convinced her country of France to give her a commanding role in the army and beat back the English forces in the battle of the city of Orleans. At the age of 6, Ruby Bridges became the first African American student to integrate the all-white William Frantz Elementary School in New Orleans. Later in life she created The Ruby Bridges Foundation to promote tolerance and create change through education.

It is the honor of a lifetime to represent you as the 2023 APIC President. I certainly never imagined myself in a role such as this when I began my infection prevention career in 1994. There are so many who came before me who I looked up to and tried to model myself after. I want to thank my local Dallas-Fort Worth APIC Chapter for giving me the initial opportunities to volunteer and begin serving in a leadership capacity. If you are not already involved in volunteering with your local chapter, I would encourage you to do so. You will make lifelong friends and gain great experiences along the way.

I have spent most of my career working at large academic medical centers. A year ago, I made a transition to a small community hospital with a 9-minute commute. I transitioned from being a system IP director with several direct reports to becoming a “one-er,” or lone IP. According to a recent APIC membership survey, 37 percent of APIC members are the only IP in their facility. Some of these lone IPs are a part of a larger system, but 16 percent of respondents were on their own with no other IP support, often in rural, isolated critical access hospitals. What an appreciation I have gained for the lone IP! Lone IPs are truly a “master of all trades,” and I have gained a sincere appreciation for the critical roles they play in smaller community hospitals. These IPs are knowledgeable on a broad set of topics and often fulfill their duties with minimal resources. I perform tasks now that I never imagined, such as manually entering surgical procedures into NHSN and making my own isolation signs. One of the advantages I appreciate is the small town feel of my current hospital, where I can exercise the art of influence to a far greater extent than at my previous academic medical centers.

The 2021 APIC Professional Development Committee developed a tool kit to provide support for IPs in isolated settings. The APIC Toolkit for Rural and Isolated Settings contains sections such as knowing your key resources, prioritizing your issues, and reviewing your surveillance plan. Members can access this toolkit on the [APIC.org](https://www.apic.org) website under the resources tab.

If you are a lone IP, my hat is off to you and my respect for you is immense. I applaud your skill, knowledge, and perseverance. I would challenge you to not limit yourself and to seek volunteer leadership opportunities at the local and national level. Who knows, one day you could end up being the president of APIC! If you are an IP that works in a big department or is part of a large system, I would challenge you to reach out to those in your chapter or area who don't have the resources and think of creative ways to help them. Maybe you could donate a copy of the AORN guidelines or go perform a site visit to help them assess their program.

I look forward to seeing some of you in Orlando, and I'll leave you with this quote from John F. Kennedy: “One person can make a difference, and everyone should try.”

Patricia Metcalf Jackson, RN, MA, CIC, FAPIC

Patricia (Pat) Metcalf Jackson, RN, MA, BSN, CIC, FAPIC
2023 APIC President

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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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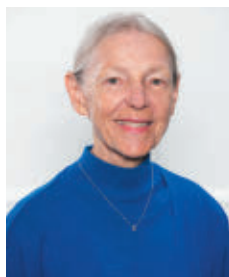
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References: 1. Magill SS, Edwards JR, Bamberg W et al. Multistate Point-of-Prevalence Survey of Health Care-Associated Infections. N Engl J Med 2014; 370: 1198-208.

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

Reflecting on CBIC Milestones

As we continue the Certification Board of Infection Control and Epidemiology's (CBIC) 40th anniversary celebrations at APIC's annual conference in Orlando this year, I began to reflect on milestones in CBIC's history. Some of my earliest memories of CBIC included two major challenges: (a) obtaining sufficient funding to assure a rigorous test development process (it is really expensive to develop a valid and reliable test!) and (b) gaining acceptance among IPs of the importance and personal and professional value of standardized measurement and recognition of their professional competence. It is immensely gratifying to me personally to see that these funding and acceptance challenges, while still essential to sustain the certification process, are no longer an acute problem but rather part of good management practice.

CBIC was originally incorporated as the APIC Certification Association but eventually changed its name to the Certification Board of Infection Control, Inc, and, in 1997, updated its name to include the word "epidemiology."

Practice analyses help to ensure that professional licensing exams and certification programs assess the knowledge and skills required to perform their tasks effectively. Hence, a major milestone for CBIC was its first practice analysis in 1982, which set the initial foundation for the CIC exam by identifying the tasks and responsibilities that infection prevention and control (IPC) professionals performed in their jobs. Since the roles and responsibilities of the IPC professional are dynamic and constantly evolving, practice analyses are repeated for all CBIC exams on a regular basis to assure that they continue to validate current IPC knowledge and skills.

A recent milestone for CBIC was acceptance into the World Health Organization's Global Infection Prevention Control Network. Broadening collaboration in infection prevention and control aligns with CBIC's strategic plan to play a more visible role in the elimination of global disparities in the field of infection prevention.

Numerous certificants have shared their own personal certification milestones with us on the CBIC website. As I read these testimonials that ranged from 5 to 40 years of CIC certification, I was reminded of my own initial certification experience, a rather stressful one, which meant taking an in-person test with a proctor and many other candidates. Today, there is a variety of testing options available or under development—in-person, online, continuing education, or portfolios—for those whose style of learning and testing may vary.

None of these milestones would have been possible without our initial board of directors, who I would like to acknowledge below:

Patricia L. Barrett, RN, BSN
Priscilla Dasse, RN, BSN
Victor Fainstein, MD
Julie Garner, RN, MSN
Patricia Lynch, RN, BSN
Barbara J. McArthur, RN, PhD
Noelene McGuire, RN
Gina Pugliese, RN, MSN
Patricia S. Schlegel, RN
Janet M. Serkey, RN
Steven Weinstein, MT (ASCP)

In our fourth decade, we are committed to making the certification process even more accessible, more relevant, and more directly related to improving the efficiency and effectiveness of IPC practice to improve patient outcomes. Our fondest best wishes and congratulations to those of you who are already certified and to those of you who will join our ranks in the future!

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



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Congratulations to the 2023 APIC Award Recipients!



Carole DeMille Achievement Award

Karen Hoffmann, RN, MS, BSN, CIC, FAPIC, FSHEA, is the recipient of the 2023 *Carole DeMille Achievement Award*. The award is given to an individual who has advanced the practice and profession of infection prevention and control (IPC) through proactive activities, strategies, and leadership.

Hoffmann began her 40+ year IPC career in 1981, holding positions at the Detroit Medical Center (Harper Hospital), the University of Virginia Medical Center, and the University of North Carolina, where she was associate director of the North Carolina Statewide Program for Infection Control and Epidemiology (SPICE). During her 23-year tenure with SPICE, she established evidence-based training programs and IPC resources across the healthcare continuum including long-term care, home health, outpatient, and dental practices teaching thousands of new IPs.

An innovative and forward-thinking leader, Hoffmann responded to bioterrorism and chemical threats by developing informational wall charts, creating uniform, color-coded isolation precaution signage, conducting numerous outbreak investigations with national impact on IPC practice, and publishing significant scientific research. For example, her 1989 outbreak investigation led to a survey into endoscope cleaning processes among North Carolina facilities that prompted the Centers for Disease Control and Prevention (CDC) to conduct a nationwide review, which led to increased focus from accrediting organizations on reprocessing medical devices and patient care instruments. Of note, she was the first author on the first meta-analysis published in the *Journal of the American Medical Association* (JAMA) evaluating the infection risks of transparent dressings. She was a primary author in revising the Centers for Medicare & Medicaid Services (CMS) Nursing Home Interpretive Guidance, adding improper cleaning and reuse of glucometers as examples of immediate jeopardy. From 2011 to 2020, she was the first IP consultant contractor for CMS, advocating for comprehensive IPC programs. She also served on the *Infection Control and Hospital Epidemiology* editorial board from 1990 to 2010 and on the Federal Guidelines Institute (FGI) Health Guidelines Revision Committee from 2010 to 2018.

Hoffmann has served APIC in a variety of leadership roles at the chapter and national level, including serving as APIC president in 2019 and chair of the Annual Conference Committee in 2013. Throughout her career, Hoffmann has especially enjoyed mentoring novice IPs and believes that contributions and participation in local APIC chapters are essential in the professional development of IPs.

A widely published and frequent lecturer both nationally and internationally, Hoffman was named Infection Control Today's first-ever IP Educator of the Year in 2009, was awarded the SHEA Advanced Practice Infection Preventionist Award in 2010, and the Old North State Award for her service to the citizens of North Carolina in 2011.



Healthcare Administrator Award

Caryl Ryan, RN, MS, BSN, is the recipient of the 2023 *Healthcare Administrator Award*. The award recognizes the pivotal role that healthcare leaders play in establishing an organizational culture that enables and supports infection prevention and control (IPC).

Having joined UConn in 1985 as an ICU nurse, Ryan currently serves as Chief Operating Officer, Chief Nursing Officer, and Vice President for Quality and Patient Safety at UConn John Dempsey Hospital in Farmington, Connecticut. Ryan truly embodies an executive leader who is dedicated to IIPC. As an administrator, Ryan has been a strong advocate and executive champion for IPC efforts at the institution. In 2018, she supported establishing an epidemiology nursing program aimed at prevention of catheter-associated urinary tract infections (CAUTI) and central line-associated bloodstream infections (CLABSI). This program yielded substantial healthcare-associated infections (HAIs) decreases, which were sustained during the pandemic. With Ryan's support, the IPC department has been able to hire additional staff, upgrade IPC technology systems, and take advantage of APIC membership and continuing education. IPC leaders are included in safety huddles and leadership meetings. Ryan has elevated IPC to an organization-wide priority, holding unit managers accountable for hand hygiene performance and disseminating IPC reports throughout the institution, including to the health system's governing board.



President's Distinguished Service Award, in honor of Pat Lynch

Barbara A. Smith, MPA, BSN, RN, CIC, FAPIC, is the recipient of the 2023 *President's Distinguished Service Award*. The award, which honors the work of Patricia Lynch as one of APIC's pioneering members and its first national president, is given to an individual who has made major contributions to the infection prevention and control (IPC) profession through service within APIC.

Throughout her career, Smith has given generously of her time, showcasing her dedication to advancing the field and helping her IP colleagues. She began her service to APIC at the chapter level through active participation in APIC Greater NY Chapter 13, where she held a number of positions including board president. At the national level, she served on the APIC Board of Directors, the Communications Committee, and assisted on special projects including the APIC MegaSurvey. Her service and leadership have been especially visible during significant infectious disease outbreaks. During the 2014-2015 Ebola outbreak, Smith worked with the CDC to deliver a webinar on proper donning and doffing of PPE, which made the cover of APIC's *Prevention Strategist* magazine. During COVID-19, she served on APIC's COVID-19 Task Force, was co-author of the "Between a Rock and a Hard Place" lessons learned whitepaper, and co-wrote several articles on the effect of the pandemic on HAI rates. She continues to serve on APIC's Emerging Infectious Diseases task force, where she delivered webinars on mpox with the American Nurses Association and is currently developing concise IPC "playbooks" for use during future infectious disease outbreaks. Smith is also a member of the *APIC Text* Editorial Panel.

Smith has made significant contributions to the scientific literature and is an outstanding IP, mentor, educator, colleague, and leader. Smith is the recipient of numerous awards including the Mount Sinai Morningside President's Award in 2019, the APIC Greater New York's Infection Prevention Champion of 2017, the APIC Chapter Leader Award in 2009, and the St. Luke's Roosevelt Hospital's Nursing Leadership Award in 2003.



Distinguished Scientist Award

Heather Gilmartin, PhD, NP, CIC, FAPIC, is the recipient of the 2023 *Distinguished Scientist Award*. This award recognizes a serious and ongoing commitment on the part of the recipient to advancing the fields of infection prevention, epidemiology, and implementation science. Recipients of this award are prominent researchers and scholars whose work has resulted in contributions toward APIC's vision to create a safer world through prevention of infection.

Gilmartin works with the Veterans Health Administration (VA), Seattle-Denver Center of Innovation as an investigator and research health scientist. Her research focuses on understanding and optimizing the culture of healthcare to enhance employee engagement and patient safety. Gilmartin is a VA Career Development Awardee and creator of the Relational Playbook for Cardiology Teams, a patented invention to help healthcare teams thrive in the workplace. She is an assistant clinical professor at the Colorado School of Public Health, University of Colorado Anschutz Medical Campus and the associate director of the Dissemination and Implementation Science Research Core at the Colorado Clinical and Translational Sciences Institute. She has over 20 years of clinical practice as a family nurse practitioner in areas such as acute care, family practice, infection prevention, epidemiology, and public health. Gilmartin is also an executive leadership coach with the VA Leadership Coaching Cadre.

Gilmartin has served APIC through many roles. She has been a member of the APIC Public Policy Committee and a member of the APIC Research Committee, where she led efforts to publish six research papers using data from a national APIC workforce survey. She is on the *American Journal of Infection Control* Editorial Board and has been the infographic editor since 2017, assisting authors disseminating their research through visual abstracts and social media. Her research has been published in many prestigious and high-impact factor journals throughout her career. The recipient of numerous awards and scholarships, she became a fellow of the Association for Professionals in Infection Control and Epidemiology in 2017.



Emerging Leader in Infection Control and Prevention Award

Lerenza L. Howard, MHA, CIC, LSSGB, is a recipient of the 2023 *Emerging Leader in Infection Prevention Award*.

Since starting her infection prevention career in 2020, Howard has demonstrated exemplary dedication to the field and to expanding her knowledge and professional growth. A microbiologist by training, Howard began working as an IP within the Advocate Aurora Health (AAH) system. Despite the increased work volume due to the COVID-19 pandemic, Howard diligently applied herself to the job, putting in longer hours and pivoting when necessary. Her primary HAI work focused on reduction of catheter-associated urinary tract infections (CAUTI) and central line-associated bloodstream infections (CLABSI). Through collaboration with key stakeholders she project managed an inaugural device huddle at a 400+ bed level I trauma center which also included high-risk huddles, real-time coaching, and auditing of compliance with CAUTI/CLABSI best practices.

During this time, Howard also obtained her CIC while enrolled at the University of Indianapolis' Doctor of Health Science program, where she is currently completing her second year. Howard will focus her studies on public health and health disparities and utilize her doctorate degree to advance the literature in IPC. Furthermore, she co-authored an abstract that was accepted and presented at the 2022 APIC conference.

Howard also is a devoted APIC member, serving at the chapter level as APIC Chicagoland's social media and conference technical specialist on the Education Committee. At the national level, Howard is co-host for APIC's 5 Second Rule Podcast and a member of the Infection Prevention Academic Pathway Committee (IPAP).



Emerging Leader in Infection Control and Prevention Award

Morgan H. Edmondson, RN, BSN, CIC, is a recipient of the 2023 *Emerging Leader in Infection Prevention Award*.

Edmondson transitioned from working in the ICU to IPC in 2020, using her critical care experience to excel quickly as an IP. She obtained her CIC within two years and has established herself as an exceptional resource throughout the Piedmont Healthcare system.

As a subject matter expert to the CAUTI team, Edmondson provides expert knowledge to all the hospitals in the system and educates new graduate nurses and resident physicians on best practices. Her efforts have helped bring about a 60 percent decrease in CAUTI systemwide. She also worked with key stakeholders, including the executive leadership team, to rapidly roll out changes that resulted in reducing CLABSI numbers. She participates in the organization's Safety Coach meetings and reviews 'near misses' and root cause analyses for safety events throughout the organization. Edmondson recently played a crucial role on a large construction project, ensuring that facility IPC protocols were followed and preventing the spread of construction-associated infections.

A testament to her value at the organization level, Edmondson was chosen by administrative leaders to represent Piedmont Athens Regional on a patient safety panel to speak to students in the University of Georgia's MHA courses. She frequently onboards new IPs across the healthcare system as well as clinical leaders including the new chief nursing officer and director of quality and safety at her local facility.



APIC-SHEA Award for Lifetime Contribution to the Field of Infection Prevention and Epidemiology

Matthew Arduino, DrPH, M(ASCP), FSHEA, is the recipient of the 2023 *APIC-SHEA Award for Lifetime Contribution to the Field of Infection Prevention and Epidemiology* for his contributions to the field throughout his career.

Arduino has spent 35 years as a microbiologist and infection control expert with notable contributions in water safety and high-level endoscope disinfection. His work with the AAMI End Stage Renal Disease Committee has resulted in the development of water standards that help keep patients undergoing hemodialysis safe. More recently his work on water safety has been applied to include the development of healthcare facility water management tools. He has authored more than 150 scientific papers, all aimed at improving patient safety mostly through water management and disinfection processes.

Arduino is the recipient of nearly 50 honors and awards, including four HHS Secretary Awards for Distinguished Service (Multi-State Outbreak of Fungal Meningitis Team, 2013; Hurricane Katrina Response Team, 2006; SARS and Monkeypox Response Team, 2004; and the World Trade Center and Anthrax Investigation Emergency Response Team, 2002), the Excellence in Epidemiology: The Multistate Melioidosis Investigation Team Award (2022), the AWWA Silver Drop Award for 25 years of service to AWWA, and the NIOSH Alice Hamilton Award for Excellence in Occupational Health and Safety (2015).

Matthew Arduino exemplifies a lifetime of commitment to IPC and creating a safer world, made evident by his incredible number of contributions and decades of involvement in APIC and SHEA.



The Heroes Program is supported by a grant from BD, an APIC Strategic Partner.

These awards recognize APIC members and/or their Infection Prevention and Control (IPC) teams who have successfully applied one of APIC's future oriented competency domains aimed to reduce infection risks for patients across the continuum of care.

Heroes of Infection Prevention

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

IPC Operations: Houston IP Leadership, Memorial Hermann Health System Sugar Land, TX

Quality Improvement: APIC COVID-19 Task Force, Various

Leadership: Holly Taylor, MPH, CIC, Ascension Texas Austin, TX

Leadership: Judi Boger, BSN, RN, CIC, Saint Elizabeth Healthcare Burlington, KY

Leadership: Wadha Almarri, Infection Prevention and Control—Ahmadi Hospital Ahmadi, Kuwait

Heroes of Implementation Research Scholar Award Recipients

APIC's Heroes Implementation Research Scholar Award Program provides career development opportunities for highly qualified individuals to plan, implement, and develop a written report for a research project demonstrating value and implications for infection prevention and quality efforts across clinical settings.

Mary Lou Manning, PhD, CRNP, CIC, FAPIC, FSHEA, FNAP, FAAN. Thomas Jefferson University, Philadelphia PA

Shawn Mueller, DNP, RN, CIC, Medstar Health

Linda McKinley, RN, BSN, MPH, CIC, FAPIC, Clement J. Zablocki Veterans' Administration Medical Center, Milwaukee, WI

Annie Wirtz, PharmD, BCPPS, Children's Mercy Kansas City

Chapter Excellence Awards Recipients

Large chapter (151+ members)	APIC Greater New York Chapter 113 APIC Delaware Valley/Philadelphia Chapter 015
Medium chapter (100-150)	APIC Washington, DC Metro Area Chapter 016 APIC Arkansas Chapter 046
Small chapter (51-100)	APIC Midnight Sun Chapter 065 APIC Badger Chapter 075

Chapter Leader Awards Recipients

Jennifer Sneddon, DNP, MPH, APN-C, CIC
Jacqueline Butler, CIC
Merwyn Sheeran, BS, RN, CIC, LTC-CIP
Stephanie Faidley, MHA, BSN, CIC
Sara Van Hoof, MSN, RN, CIC, FAPIC
Talia Lefkowitz, RN, BSN, CIC

Research Awards Recipients

Blue Ribbon Abstract Awards	Danielle L. Kurtz, MPH, CIC; Danielle J. Durant, PhD, MBA, MS; Emily N. Gaddam, RN; Nikki Mueller, MLS(ASCP)CM, MBA, CIC
New Investigator Abstract Award	Amanda Crowson, MPH, RN, CPH, CIC
William A. Rutala Abstract Award	Adrian A. Clifford
Best International Abstract Award	Retsu Fujita, PhD
Implementation Science Abstract Award	Martha C. Lusby, RN, BSN, CIC

APIC/AJIC Award for Publication Excellence

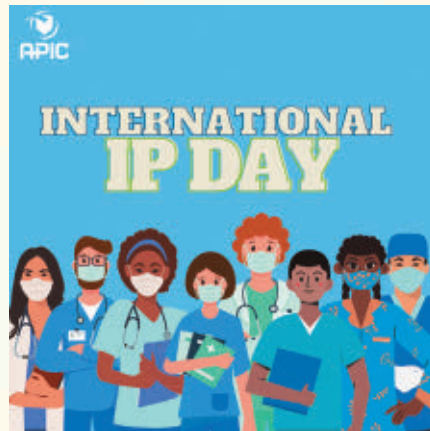
Factors and reasons associated with low COVID-19 vaccine uptake among highly hesitant communities in the US

Saif Khairat, PhD, MS, MA; Baiming Zou, PhD, MS, MA; and Julia Adler-Milstein, PhD, MS, MA,
Cecil G. Sheps Center for Health Sciences Research, University of North Carolina at Chapel Hill,
Chapel Hill, NC

Scholarships Recipients

Heroes Implementation Research Scholar Award	Mary Lou Manning, PhD, CRNP, CIC, FAPIC, FSHEA, FNAP, FAAN; Shawn Mueller, DNP, RN, CIC; Linda McKinley, RN, BSN, MPH, CIC, FAPIC; Annie Wirtz, PharmD, BCPPS
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International Infection Preventionist Day 2023



On April 7, 2023, APIC celebrated the fourth annual International Infection Preventionist (IP) Day (celebrated annually on the first Friday in April). #InternationalIPDay is a dedicated day to acknowledge the tireless work and dedication of IPs in various settings, including hospitals, long-term care facilities, schools, and beyond. APIC staff also shared a thank-you video, developed social media content, and created downloadable graphics for Facebook, Twitter, Instagram, and LinkedIn. See more: <https://bit.ly/IPDay2023>

APIC Creates Emerging Infectious Disease ‘Playbooks’

To help infection preventionists (IPs) and epidemiologists operationalize prevention efforts for emerging infectious disease threats, APIC is launching a series of ‘playbooks’ that can be downloaded and customized for use in individual healthcare facilities.

Created by APIC’s Emerging Infectious Diseases Task Force, each playbook serves as a fundamental roadmap to swiftly guide infection prevention and control (IPC) personnel through preparation for, and management of, potential infectious disease outbreaks. The pathogen-specific playbooks outline recommended practices for outbreak response starting with pathogen identification, prevention of transmission, safe work practices, considerations for providing patient care, patient discharge, occupational health, and outreach to healthcare stakeholders. Links to clinical guidance and references are included throughout.

Similar documents are being created for measles, *Candida auris*, highly pathogenic avian influenza, Marburg and Ebola Virus Disease, diphtheria, norovirus, RSV, and COVID-19 surges.



PDC Update

Professional Development Committee Develops Infection Prevention Career Ladder and Professional Development Toolkit to Increase Retention

BY SARA M. REESE

Retention and recruitment of infection preventionists (IPs) in today's healthcare climate is a significant challenge. The field of infection prevention and control (IPC) is growing, highlighting the need for IPs across all healthcare and community settings. Competent and knowledgeable IPs are crucial to optimizing the efficacy of IPC programs across the continuum of care.¹ The demand for IPs is increasing with the threat of antimicrobial resistant pathogens, new and changing regulatory requirements, and emerging infectious diseases.² The retention and development of IPs should be a priority for all organizations and facilities.

According to a national APIC survey, 35 percent of IPs stay in their roles for only one to three years, which is less than the median years of tenure for hospitals (5.1 years).³ Additionally, 35 percent of IPs left their position for professional advancement and 28 percent left because of work-life balance challenges.³ There are numerous effective retention strategies that address the reasons for departure including flexible work schedules, work from home opportunities, educational opportunities, leadership training, and implementation of professional development opportunities (i.e., career advancement ladder).

A key goal for APIC's strategic plan is to foster the development of the next generation IPC workforce through (1) creation and promotion of pathways to enter the field of infection prevention, (2) strategies to attract new talent, (3) retaining existing IPs, and (4) establishing a nationally recognized career advancement pathway.

A career advancement pathway is a professional development tool to encourage and incentivize healthcare professionals to advance their knowledge, skills, and expertise. Career ladders have been recognized as an essential component of professional development, satisfaction, and retention.

The APIC Competency Model defines the knowledge, skills, abilities, and personal attributes considered to be most important for successful job performance and supports advancement through IP career stages, focusing on competency domains. Currently, most IPs pursue progression through the career stages independently without a formal career professional development plan.


Organizations will benefit from establishing career ladder programs for their IPs centered around advancement and development through the APIC Competency Model and career stages. Career ladder progression depends on accomplishing or meeting specified criteria related to knowledge, skills, ability, expertise, and education.

The purpose of establishing an IP career ladder is to

- Establish expectations of performance and a system for evaluation and advancement.
- Recognize and incentivize IPs who further their professional development.
- Encourage IPs to advance their knowledge and skills, creating a better equipped workforce.

Later in 2023, APIC will be releasing a Career Ladder Toolkit that will provide tools to implement an IP career ladder. The Toolkit is a collection of resources and templates primarily intended to assist IPs with progression through their careers whether they are in systems or organizations with IP job levels or not. The Toolkit contains:

- **Instructions on How to Use the Toolkit**
- **Purpose and Value Statements:** rationale to support retainment and attraction of new talent through adoption of a career ladder.
- **Career Ladder Summary:** "at-a-glance" reference of the IP job description's basic requirements, job duties, and responsibilities.
- **Career Ladder Job Descriptions:** templates that can be used by organizations implementing an IP Career Ladder.
- **IP Career Progression Assessments:** templates for career stage progression that may be used to assess and document when to progress to the next level.
- **Resource Materials:** current and new tools to assist with career and professional development planning.

Investing in the growth and development of IPs and IPC programs, through the implementation of IP career development ladders, is a step in the direction of meeting the demands of the future. 

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Sara M. Reese, PhD, MPH, CIC, FAPIC, is a member of the APIC Professional Development Committee.

Take the SKIP Survey: Don't miss out on your opportunity to share feedback with the CDC

You are invited to participate in a study examining IP attitudes, beliefs, barriers, and opportunities to promote quality infection prevention and control (IPC) practices and training for healthcare workers. The Centers for Disease Control and Prevention's (CDC) Project Firstline has contracted with APIC to conduct this survey.

Responses to the survey will be used to develop strategies to improve the implementation of IPC guidelines and education/training of healthcare personnel on infection prevention.

You must be employed in a healthcare facility or public health department in a state or territory of the United States to participate. Employees of vendors are not eligible to participate.


**Scan the QR code to take the survey—it takes less than 10 minutes to complete and is anonymous.
Don't wait—the survey closes June 30.**




Scan here

Participant Raffle

IPs who complete the survey are eligible to participate in a raffle to receive one of the following:

- APIC membership dues waived for one year (two to be raffled);
- Free access to the *APIC Text* online for one year (two to be raffled); or
- APIC merchandise perks (six to be raffled). 



Spreading Knowledge in Infection Prevention SKIP Survey.
Please scan the QR code below to participate in the survey.



Project Frontline
SKIP Survey
May 1-June 30,
2023



Building Toward the Future of Infection Prevention and Control: 2023 in Focus

BY LISA TOMLINSON, NANCY HAILPERN, AND RICHARD CAPPARELL

This year has provided a lot of opportunities for APIC to engage policymakers regarding the need for investment in infection prevention and control (IPC). Congress will be looking to reauthorize the Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPA), pass legislation to alleviate healthcare workforce shortages, and approve FY 2024 appropriations. Partisan tensions are very high this session, so it is not expected that many more pieces of legislation affecting healthcare will move.

APIC is hoping to use these legislative opportunities to engage lawmakers and highlight the role of infection preventionists (IPs) and their needs for the future of the profession. While there are many challenges for IPs and healthcare at large, APIC is focusing on several key areas: IP workforce and establishing

a pipeline, IPC in nursing homes, and ensuring that IPs have the tools and resources necessary to be successful in their role.

IP Workforce and Pipeline Development

IPs are facing a significant shortage in the coming years. APIC survey data shows 40 percent of the IP workforce will enter retirement age within the next ten years. Prior to COVID-19, there were already concerns about the IP workforce, as 25 percent of acute care facilities listed at least one IP vacancy and more than half of long-term care facilities experienced an IP leaving within 24 months. All these challenges were prior to COVID-19, when the field was under dramatic stress and there were many more departures for other professions or early retirement.

However, unlike many other healthcare professions, most people are not aware of the role of IPs. This leads to IPs largely being recruited from the existing labor pool within

facilities. As you know, IPs come from a wide variety of healthcare backgrounds including nursing, public health, microbiology, and epidemiology. While each of these fields is important to healthcare and provides different perspectives, they do not share a common specialized IPC curriculum or the unique training necessary to lead a comprehensive IPC program. What makes this issue more challenging is the lack of post-secondary programs that currently offer a bachelor's level curriculum dedicated to the role of an IP. This makes direct entry into the field extremely difficult even when the demand is greater than ever.

In addition to efforts within APIC on an IP Academic Pathway (<https://apic.org>), APIC is using the legislative opportunities above to encourage Congress to prepare for the future of the profession. First, APIC is calling on the federal government to recognize the profession officially as a part of O*Net, “the nation’s primary source of occupational

information.” This has led to significant work with the Department of Labor (DOL) and others on promoting the creation of an occupational code for IPs. Establishing an O*Net code with the DOL would raise awareness of the profession, make information about the field accessible to career-matching sites, and improve access to funding to help establish standardized apprenticeship and internship programs. To support this work, efforts are being made for Congress to accelerate the process to get an O*Net code.

In addition, efforts are being made to fund training programs that provide support for new entrants into the field of infection prevention. APIC is advocating for members of Congress to support collaborative efforts between educational institutions and APIC to establish IP-centric academic programs. These efforts have included request for funding, as well as policy support. By getting individuals interested earlier in their careers, APIC is promoting a well-trained and supported pipeline of IPs for the future. This would reduce the reliance on other fields for an IP labor pool.

Finally, as part of the Omnibus Appropriations Bill passed last year, we fought for inclusion of a provision that would incentivize individuals interested in joining infectious disease fields: IPs, infectious disease physicians, microbiologists, etc. While the legislation did authorize the program, it unfortunately did not provide funding for it. Securing funding for this program will be a major priority for APIC advocacy around FY 2024 appropriations.

Nursing Home IPC Programs

Unfortunately, COVID-19 exposed the lack of adequate attention to IPC in nursing homes. During the peak of the pandemic, more than one-third of all deaths from COVID-19 were associated with these facilities. Further, the effects of COVID-19 were not limited to residents. Many of the thousands of healthcare staff infected with COVID-19 worked in nursing homes. In fact, the Centers for Medicare & Medicaid Services and the Bureau of Labor Statistics labeled the job of nurses working in nursing homes as one of the deadliest of 2020.

Without personnel dedicated to IPC in these facilities, they were largely caught unprepared, and the daily challenges in these facilities were heavily magnified under the strain of a pandemic. While nursing homes are required

to have a part-time IP, the amount of time dedicated to IPC is largely left up to a facility. With this approach, many staff do not have interest or expertise in IPC programs. Less than 10 percent of IPs in these facilities are certified. Additionally, staff working in these positions are forced to run IPC programs with limited time. According to a survey, IPs working in a nursing home dedicate less than one-third of their time to IPC. With so many documented cases of infections in these facilities, it is clear IPC has to become a priority in nursing homes and no longer considered a luxury. Further, the IPs employed in these facilities must be afforded the time, support, and training they need to do their important work.

APIC is working with members of the Senate Health, Education, Labor, and Pensions (HELP) Committee to highlight solutions to these problems and explain why they are crucial to pandemic preparedness. Specifically, APIC is advocating for Congress to require a full-time, dedicated IP who will conduct epidemiologic investigations, enforce infection control standards, and develop plans to prevent and control the transmission of infectious agents. Further, APIC is working to build on current reporting requirements in nursing homes to include surveillance of healthcare-associated infections and drug-resistant pathogens.

Appropriations Request for Fiscal Year 2024

Finally, APIC is working with allied organizations to ensure key federal infection prevention programs are funded as part of the annual appropriations bills. Members of the House of Representatives have made clear their intentions to slash federal healthcare funding, making advocacy very important this year. Some key programs APIC is monitoring this year include:

National Healthcare Safety Network (NHSN)


APIC is asking for increased funding for NHSN, as the stagnation in federal funding over the last 10 years cannot sustain the exponential expansion of NHSN from 300 in 2005 to 38,000 healthcare facilities today—with a large increase coming from nursing homes. An increased investment in NHSN would ensure CDC can provide adequate technical support to participants, modernize NHSN to produce faster data while reducing the administrative burden for healthcare facilities, and adapt NHSN to respond to the current and future pandemics.

Antibiotic Resistance Solutions Initiative (ARSI)

ARSI supports 50 state health departments, four large city health departments, and Puerto Rico to detect, respond, and contain antibiotic-resistant pathogens. CDC bridges the gap in local laboratory capabilities and data-driven responses to antibiotic-resistant threats through ARSI’s Antibiotic Resistance Lab Network, which equips the 55 states and localities with comprehensive lab capacity and facilitates coordination of activities through seven regional labs and the National Tuberculosis Molecular Surveillance Center. Boosting investments in ARSI would further strengthen the nation’s epidemiology, laboratory, and diagnostics capacity to combat emerging antibiotic resistance.

Advanced Molecular Detection (AMD)

AMD supports the integration of genomic sequencing with bioinformatics and epidemiology expertise to detect diseases faster, identify and respond to outbreaks sooner, and protect people from emerging and evolving disease threats. Through partnerships with state and local health departments, public health laboratories, and academic institutions, AMD increases access to the specialized technologies and expertise necessary to empower public health professionals at the front lines to take action before disease-causing pathogens become more widespread. As the nation responded to the COVID-19 pandemic, AMD was crucial in robustly tracking and combating emerging variants of COVID-19 in real time. An increased investment in AMD will better position the U.S. to respond more strategically to future pandemics and outbreaks.

Adequate funding, workforce development, and public health preparedness are critical to addressing the challenges faced by IPs and ensuring the effective implementation of infection prevention and control programs. As the world continues to grapple with the ongoing challenges posed by infectious diseases, it is crucial that policymakers and stakeholders prioritize these issues and work collaboratively to improve the state of infection prevention and control. For more information on these issues, visit <https://apic.org>. 

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

APIC Consultants Work with Departments of Health to Drive IPC Best Practices in Long-term Care Facilities



Christen Hall

BY APIC CONSULTING SERVICES

Christen Hall, DNP, RN, FNP-BC, CIC, is a CIC-certified infection preventionist (IP), registered nurse, and board-certified family nurse practitioner. Her experience spans many healthcare settings including public health, acute care, long-term care (LTC), outpatient therapy, and home health and hospice. Hall holds a Doctorate in Nursing Practice and Bachelor of Science in Nursing from the University of Tennessee. As a doctoral researcher, she established infection prevention and control (IPC) programs, including antimicrobial stewardship, for numerous long-term care facilities (LTCFs). Recently Hall worked as the lead APIC consultant on multiple LTCF Infection Control Assessment and Response (ICAR) projects, where she focused on removing IPC barriers. Hall shares key insights with us after completing over 100 ICAR assessments and training 3,000+ front-line LTC staff.

Prevention Strategist: Tell us about your recent work with APIC Consulting Services on a statewide ICAR project.

Christen Hall: Through APIC Consulting, I had the opportunity to work alongside a state department of health's healthcare-associated infection (HAI) team to develop an effective, statewide ICAR program. The primary goal of this project was to ensure the program established lasting change in IPC programs throughout the state's LTCFs. To accomplish this, APIC Consulting created a two-day onsite visitation format that included a one-day facility assessment and another day for education of best IPC practices specific to

COVID-19 prevention and control. Overall, approximately 380 facilities statewide participated in this ICAR assessment and education program.

PS: How did your previous Department of Health (DOH) experience prepare you for success on the ICAR project?

CH: My previous experience with state departments of health provided me the opportunity to work closely with a wide variety of healthcare facilities, including but not limited to acute care hospitals, long-term acute care hospitals, LTCFs, and outpatient facilities. Due to the vast differences among these healthcare settings, it's essential to tailor IPC support

toward the differing needs of each facility. Each care setting faces its own challenges. For example, in my experience, acute care hospitals struggle to promote lasting IPC change. In long-term acute care hospitals, patients with complex, long-term indwelling medical devices are at a higher risk for serious emerging infections. And in LTCFs, IPC practices are often hindered by staff and resource limitations. A deeper understanding of these unique challenges helped me develop creative solutions to meet our ICAR project goals.

PS: Tell us more about the customized ICAR project and delivery of staff IPC education and training.

CH: The majority of ICAR projects include an onsite or telehealth assessment, often conducted in less than a day. Additionally, ICAR assessments developed during the COVID-19 pandemic frequently exclude vital topics such as antimicrobial stewardship, injection safety, and water management programs. To mitigate these issues, the APIC Consulting and DOH teams included core topics that would lead to a sustained reduction of infections and improve patient safety.

A distinguishing feature of our ICAR program was the addition of staff education

based on gaps identified from the assessment. The post-assessment education contributed to our goal of sustainable improvement. Each facility received core education sessions as well as sessions tailored to address the gaps identified as areas for improvement from the previous day's ICAR assessment. The core training sessions delivered to staff in all three shifts were: hand hygiene, personal protective equipment (PPE) donning and doffing, and transmission-based precautions.

A wide variety of educational techniques were employed to deliver the core and customized IPC training sessions. For example, facilities were provided a hand hygiene visual toolkit to demonstrate the importance of proper hand hygiene and to support future staff training. In addition to the onsite education and training, APIC Consulting facilitated a statewide webinar series to address key post-assessment topics including cleaning and disinfection, antimicrobial stewardship, and auditing IPC practices.

Staffing and proper resourcing have become an ever-greater challenge for LTCFs since the pandemic. These limitations prevented a more widespread training approach for the ICAR project's post-assessment education. To maximize the number of staff trained, education sessions were often conducted in small, unit-to-unit groups. We found this approach to be effective by staggering the training for LTCFs experiencing staff shortages.

PS: What are some key IPC challenges you found during the project, and how did you address them?

CH: Throughout the COVID-19 pandemic, our country's most vulnerable populations were greatly impacted, many of which resided in LTCFs. Having the opportunity to help hundreds of LTCFs navigate a new, unprecedented landscape challenged me to develop best care practices and recommendations to limit the spread of infection. In addition, working with numerous LTCFs during this difficult time advanced my understanding of LTCFs' IPC needs and limitations, the major pitfalls that occur in LTCF settings, and most importantly, how to help LTCFs provide the best care for their patients and residents.

In addition to limited resources and staffing issues on the clinical floor, LTCFs

experienced inconsistencies in corporate and facility leadership. Frequent personnel changes led to leadership's limited availability to implement lasting IPC improvements or ensure best practices were followed. Compounding the problem, varying interpretations of COVID-19 related recommendations caused confusion among LTCF staff, and leadership struggled to keep up with evolving national guidelines. As an IP, I addressed these challenges by training corporate and facility leadership on how to source evidence-based resources and guidelines. In addition, I taught them how to utilize the resources and guidelines to promote understanding within their LTCFs. Corporate leadership was encouraged to adopt an evidence-based mentality and serve as role models of this approach among their facilities.

The availability of PPE and other essential equipment also proved to be a key challenge (and opportunity) for our project. Supply chain issues in manufacturing and distribution led to shortages of PPE, alcohol preparation pads, needles, and other supplies that limit the spread of infection. Identifying these IPC barriers and training LTCFs on prioritization of supplies allowed us to demonstrate a sustainable approach to supply chain issues while maintaining patient safety.

PS: What were your key takeaways from this project?

CH: My main project takeaways are related to effective teaching and training methodology. First, everyone learns most effectively with a variety of methods. Each type of staff position presents varying opportunities for instruction and training styles. Because of these variations, it is imperative to offer a multitude of teaching methods to cater to the entire staff. Visual aids and demonstrations provide an interactive environment to teach IPC best practices. "Just-in-time" training, or giving immediate feedback when undesirable practices are observed, helps staff to immediately course correct.

Another takeaway is that it is equally critical to design the training for efficient and effective communication. Information exchanges involving long or drawn-out explanations of practice discourage time-limited front-line staff from listening, learning, and applying the information. Be sure to explain the motivation behind the

instruction so that individuals understand the reasons for implementing the practices, and the repercussions, of improper care.

The last takeaway is to remember providing healthcare is a difficult and strenuous job, so be sure to show gratitude and appreciation for every individual across the facility.

PS: What would you want other IPs to know about working with state departments of health and LTCFs?

CH: It is incredibly important to set clear expectations and deliverables when working on any project. Setting tangible goals helps to ensure projects are being completed in a manner that will promote long-term growth and change. Time can be used in the most efficient way if there is a uniform plan and structure in place for key personnel. Ensure the goals you set focus on promoting lasting IPC knowledge and change, rather than collecting data and statistics. This focus will enable your training and education program to take root and promote continuous improvement long after you are gone.

When working with state departments of health and LTCFs across the country, it's imperative to understand that every state functions differently. Take time to learn and understand the state's healthcare infrastructure and regulations. States often have additional regulations and guidelines that must be followed based on the facility's level of care classification. In addition to regulations, be sure to learn how the state's regulatory process works. Depending on the state, LTCFs have different regulatory bodies based on their classification level. These bodies are critical to understand when developing a plan and performing ICAR assessments. I also recommend becoming familiar with the state's LTCF resources so you can provide state-specific support and evidence.

Finally, it is important to be understanding. LTCFs cope with many ever-changing challenges that complicate the state DOH's ability to support and assist. Helping facilities to isolate these limitations and partner with the state for solutions can assist IPC professionals in providing the best support to these critical settings. **PS**

If you're interested in becoming a consultant or would like more information about services, contact APIC Consulting Services at info@apicconsulting.com.

Conversation with an IP: Stephanie Phillips, RN, BSN, CMSRN



Stephanie Phillips, RN, BSN, CMSRN, has been a nurse for nine years and has worked at Methodist McKinney Hospital in McKinney, Texas, for eight years. She had always worked in orthopedics/med-surg from the start of her nursing career, so taking on infection prevention was a whole new world. She is a Texas girl, who loves spending time with family, her puppies, and traveling.

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

Stephanie Phillips: I had worked at Methodist McKinney for five years on our inpatient floor and just needed a change but didn't want to leave the hospital. The position for infection preventionist (IP) had just opened, and I thought it sounded interesting and challenging. I liked the idea that I was still giving patient care but in a behind the scenes kind of way. I also have always had a weird fascination with infections and chart reviews, so the thought of getting to dig into these things sounded fun.

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

SP: I started this journey in May of 2020, so my entire first year was all things COVID. It was so challenging, trying to keep up with the constant changing of guidelines, employees getting sick, contact tracing, etc. I felt like I was always in a meeting, on a phone call, or rewriting a policy. At our facility, the role is not only IP, but also quality coordinator and

the employee health nurse. So learning three new jobs in a pandemic that was constantly changing was definitely the challenge I was looking for.

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

SP: COVID has helped me progress in my IP role. It was baptism by fire, and it forced me to learn things quickly and conduct more research than I ever thought. I got to become the Sherlock Holmes for our hospital and tap into that fascination for infections and chart reviews that I had always enjoyed. I took courses through APIC, which helped give me the foundation I needed, and bought as many of the books as I could. I also have an amazing mentor—the great Patti Grant, who has been my guiding light. She has taken me under her wing and helped me look at how we do things in our facility, and offered up suggestions on how to do things differently.

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

SP: I had a great advantage when I took on this role. I had already worked in our facility for a while and knew the culture, and I knew a lot of our processes and what could be improved. It also helped that I knew who I could rely on to help be that agent of change that would be needed. Before nursing, I was in human resources and event planning, and that has helped with coming up with creative ways to get people excited about doing the right thing for our patients. It also helped to be interactive with people and listen to their ideas or concerns.

PS: Why is obtaining (or maintaining) the CIC credential important to you?

SP: I have not obtained the CIC, but it is a goal for 2023. In 2019, I obtained my med-surg certification and felt that only made me more confident in the care I was giving our patients and helped refresh my knowledge. Having the CIC will do the same—it's about committing to your profession and your patients, by saying I have the knowledge. Besides, we all know nurses like the alphabet soup behind our name!

PS: What is the best advice you ever received?

SP: It's so basic: don't give up. I have, oftentimes, felt so overwhelmed and like I have no clue what I'm doing. In a conversation with my CNO, when I just felt so dumb and like I was failing, she told me, you know more than you realize, and you have to have grace with yourself, you are still new. I think often we all want to just hurry up and be the expert, but it doesn't work that way.

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

SP: Have grace with yourself. It can be challenging and overwhelming at times, especially if it's just you. Take any courses that are available, read the books, and if you can, get a mentor to help you. Resources are huge, so knowing where to go to get them or who you can ask is so helpful. I use the APIC chats to ask questions, watch webinars, and read the articles in *Prevention Strategist* and *AJIC*. **Ps**



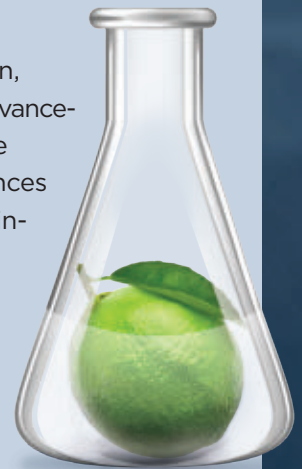
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Enhanced Barrier Precautions—Practice Guidance for Skilled Nursing Facilities

BY JENNY BENDER

In July 2022, the Centers for Disease Control and Prevention (CDC) updated a document entitled “Implementation of Personal Protective Equipment (PPE) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms (MDROs).”¹ Most infection preventionists (IPs) are quite familiar with both standard and transmission-based precautions as prevention strategies. However, enhanced barrier precautions (EBP) are a much newer recommendation and not as widely adopted in the current practice state.

In 2021, the Healthcare Infection Control Practices Advisory Committee (HICPAC) set forth a document entitled “Consideration for Use of Enhanced Barrier Precautions in Skilled Nursing Facilities,” which outlined topics related to the care of nursing home populations and the implementation and scope of EBP as requested by the CDC at the November 2019 HICPAC meeting.² This document highlighted that MDRO transfer is common in skilled nursing facilities (SNFs), and that EBP, or targeted gown and glove use during high contact resident activities, can help stop the transfer from happening. In addition to transmission-based precautions (TBP) used when residents are infected or colonized with an MDRO, EBP can be applied in high-touch care activities regardless of MDRO status. To implement EBPs effectively, staff must be trained on PPE use and both PPE and hand hygiene supplies must be readily available at the point of care.

EBP consists of adding gowns and gloves settings with high-touch activities, whereas PPE traditionally may have only been used for residents who displayed signs and symptoms of an active infection. High-touch activities specifically include care tasks where close contact is anticipated: dressing, bathing/showing, transferring, providing hygiene (showering, shaving, brushing teeth),³ changing linens, incontinence care/toileting, device care or use, and wound care. EBPs

would not add room placement restrictions that TBPs may add.¹ These activities were chosen based on observations of activities in SNFs and evaluations of these observations to determine the risk of pathogen transfer on hands after the activities occurred.³ Although EBPs only address gown and glove use during these activities, other PPE may be used as required in adherence to standard precautions if any blood or body fluid exposure may be expected during any care activity taking place.

It is not currently recommended that all residents in a SNF are immediately placed on EBPs. CDC recommends that EBPs are used for residents who have any wound or indwelling device, and any resident who is infected or colonized with an MDRO if TBPs would not otherwise apply.


Tips to implement EBPs include:

- Clear signage indicating EBPs are required.
- Readily available PPE and hand hygiene supplies.
- Appropriate locations of trash receptacles for proper disposal of PPE.
- PPE education and training for staff, and audits to monitor compliance.

Science supporting the use of EBPs in practice include:

- SNF residents are at increased risk for both colonization and infection by MDROs.⁴
- The prevalence of *S. aureus* and MDRO colonization among residents has been estimated at higher than 50 percent, with new colonization acquisitions occurring frequently.⁵
- Standard precautions are not always effective at controlling the spread of organisms, and because contact precautions are less frequently adopted in SNF settings, EBPs offer an additional prevention strategy.
- Studies provide evidence that EBP is effective in preventing acquisition, transmission, and infection by *S. aureus*.²
- Studies do not explicitly support that EBPs are effective in preventing the spread

of MDROs or other epidemiologically significant organisms; however, many of these organisms require contact precautions, so although not studied, EBP should certainly be an effective prevention strategy.

In summary, IPs across the continuum of care should be aware of the current recommendations around EBPs and how these are practically deployed in their state or country. Although EBPs are not currently recommended in settings outside of SNFs, acute care, or long-term acute care hospitals—IPs should be able to speak to the differences in prevention strategies in different care settings to clarify any questions from patients and their family members, as well as to better understand the risk of MDRO infection and colonization when patients and residents pass between facilities.³ 

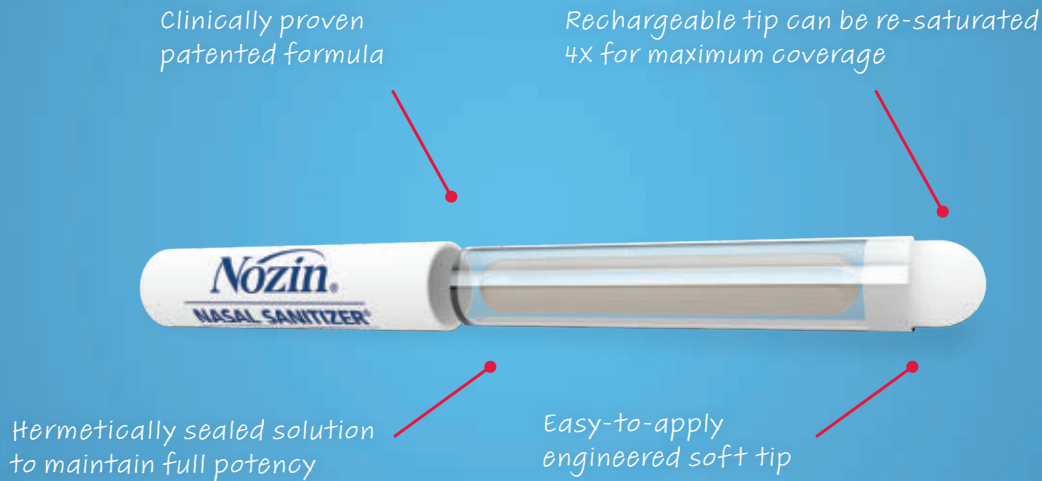
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Jenny Bender, MPH, BSN, RN, CIC, is a member of the APIC Practice Guidance Committee.



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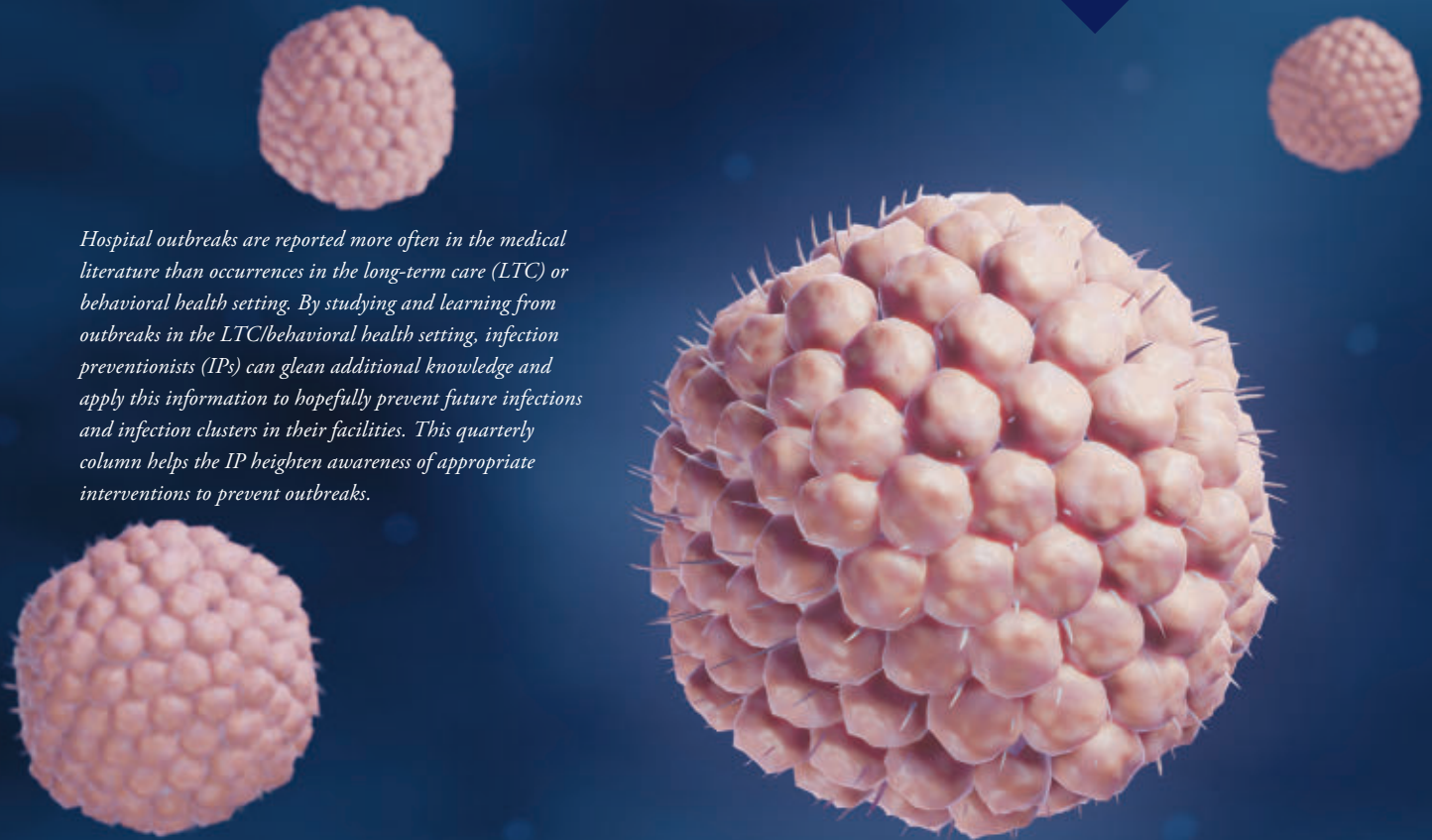
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Focus on long-term care and behavioral health outbreaks

Identify the pathogen!

BY STEVEN J. SCHWEON

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 (IPs) can glean additional knowledge and apply this information to hopefully prevent future infections and infection clusters in their facilities. This quarterly column helps the IP heighten awareness of appropriate interventions to prevent outbreaks.



Alanazi et al¹ describe six patients on the same ward and three healthcare workers (HCWs) in a psychiatric hospital in Saudi Arabia developing skin eruptions and pruritus (itching), with a characteristic distribution. The HCWs included two nurses and one physician.

Based upon your clinical acumen, and the geographic location, you suspect the pathogen(s) to be:

1. *Coccidioides sp.*
2. Middle East Respiratory Syndrome (MERS) virus

3. *Varicella zoster virus (VZV)*

4. West Nile virus (WNV)

The rash initially appeared on the chest, back, and face and ultimately spread across the entire body, developing fluid-filled blisters that evolved into scabs. Based upon the clinical presentation, the diagnosis was varicella, also known as “chickenpox.”

Varicella, or chickenpox, is caused by VZV, a member of the herpesvirus family. Smallpox,² with its characteristic skin lesions, is graver than the mild chickenpox infection with its skin lesions; the chicken is associated with weakness and pettiness, thus the name. The infection has no association

with the fowl. Varicella is a diminutive of smallpox.

The infection control team defined a varicella exposure. Efforts were made to identify all exposed personnel for post-exposure follow-up and vaccination. Additionally, an epidemic curve was developed to study the disease spread and time distribution of cases.

There was a total of 146 confirmed exposures, 96 HCWs were exposed, mostly nurses and housekeepers, and 50 patients were exposed.

Alanazi et al¹ identified numerous contributing factors to the outbreak:

1. The infection control staff had inadequate disease transmission and infection control precaution knowledge.
2. There was inadequate knowledge regarding how to conduct an outbreak investigation.
3. The patients moved freely in the ward and engaged in shared activities.
4. There was a lack of data pertaining to staff vaccination and immunity to varicella and other diseases.
5. There was also a lack of alcohol hand rub supply and low staff hand hygiene compliance.
6. Low staff compliance with using personal protective equipment (PPE).
7. No proper environmental cleaning and disinfection.
8. Isolation facilities were not available in the hospital.

After the primary infection,³ the VZV remains in the sensory nerve ganglia as a latent infection; when reactivated, it causes herpes zoster, also known as “shingles.”

After exposure to the VZV, the incubation period ranges from 10 to 21 days. A mild prodrome of fever and malaise may occur one to two days before the rash onset. The rash is generalized and pruritic, progressing from macular to papular to vesicular lesions before crusting. Lesions are mostly concentrated on the chest and back, with symptoms lasting four to seven days.

In healthy children, chickenpox is typically mild.³ Adults, unvaccinated pregnant women, and the immunocompromised are more at risk for severe disease and complications. Recovery from the primary infection usually provides protection for life. A second occurrence may occur in immunocompromised individuals.

Varicella is highly contagious, but less contagious than measles.³ The virus can be transmitted by:

- Direct contact (e.g., skin-to-skin)
- Inhalation of aerosols from vesicular fluid or skin lesions
- Possibly through infected respiratory secretions that may be aerosolized

The most common varicella complication³ in adults is viral pneumonia. Other complications due to bacterial infections include:

- Cerebellar ataxia
- Encephalitis
- Hemorrhagic conditions
- Septicemia
- Toxic shock syndrome
- Necrotizing fasciitis
- Osteomyelitis

- Bacterial pneumonia
- Septic arthritis

Laboratory testing is recommended⁴ to:

- Confirm suspected varicella cases
- Confirm varicella as an outbreak source
- Confirm varicella in severe cases such as hospitalization or death, or unusual cases
- Determine varicella susceptibility for treatment
- Determine if the suspected vaccine-related adverse events were caused by the vaccine strain VZV

The CDC recommends airborne, contact, and standard precautions for the duration of illness when managing an individual with VZV. Susceptible HCWs should not enter the room if immune caregivers are available.⁵

Varicella zoster immune globulin is administered to exposed individuals who lack varicella immunity, whose exposure will likely lead to infection, and are at high risk for severe varicella.³ Medications to treat disease include acyclovir, valacyclovir, and famciclovir.

The introduction of the varicella vaccine has greatly reduced the number of varicella cases, hospitalizations, and mortality.⁶ In 2019, there was a total of 8,297 cases and six deaths.⁶ An average of 78 percent of adults develop immunity after one dose, and 99 percent develop immunity after the recommended second dose.⁷

Immunity evidence³ to VZV includes:

- Documentation of age-appropriate varicella vaccination
- Laboratory evidence of immunity or laboratory confirmation of disease
- Birth in the United States before 1980, but should not be considered evidence for healthcare personnel, pregnant women, and immunocompromised persons

- Diagnosis or verification of a history of VZV or herpes zoster by a healthcare provider³

At the psychiatric hospital, to stem the outbreak, interventions included¹:

- Assigning a team to be responsible for implementing control measures and follow-up
- Dedicated staff and patient care area for positive cases
- Using high efficiency particulate (HEPA) filters as a substitute for a negative pressure room
- Review of the cases and exposures for immunity; susceptible staff were excluded from caring for the affected patients
- Vaccinating all possible exposed HCWs and patients
- Providing staff education
- Training staff with performing proper hand hygiene and PPE use
- Supplying staff with pocket-sized alcohol-based hand rub
- Educating infection control staff with the proper way of investigating an outbreak and data collection
- Training housekeepers with proper cleaning and disinfection
- Continuing to follow the outbreak until no new cases appeared
- Isolating patients until all lesions were crusted
- Implementing surveillance for two full incubation periods (42 days) after the rash onset of the last identified case

Alanazi et al¹ felt the exposure was multifactorial:

- The patients had “bad health behaviors” leading to challenges with directing



behavior, implementing infection control measures, maintaining isolation precautions, and receiving immunizations

- The lack of varicella data with staff immunity
- Insufficient knowledge of disease transmission
- A “weak” infection control program

In addition, Alanazi et al¹ felt the main lesson learned was that the implementation of an infection control program in a psychiatric hospital is mandatory and can contribute to the prevention and control of infectious diseases. **P**

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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.

TAKE-HOME MESSAGES

1. There are two varicella vaccines licensed for use in the United States. Varivax[®] contains only varicella virus vaccine. ProQuad[®] is a combination measles, mumps, rubella, and varicella vaccine. Additional information is available from the Immunization Action Coalition at https://www.immunize.org/askexperts/experts_var.asp. Information on breakthrough varicella is available at: <https://www.cdc.gov/chickenpox/hcp/index.html>.
2. Provide the varicella vaccine’s Vaccine Information Statement (VIS) to the parent, patient, or guardian prior to administering the vaccine to promote a thorough understanding of the vaccine.
3. Considering developing a varicella exposure policy. Ensure your local health department’s phone number and the after-hours phone number are part of the policy. In case of needing additional communicable disease guidance during after hours, consider adding both phone numbers to your personal phone.
4. Varicella is a reportable condition according to the National Notifiable Diseases Surveillance System (<https://ndc.services.cdc.gov/conditions/varicella/>).

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Treasure Hunt!

BY MARIA CUCCINELLO

In the serious world of infection prevention, it's important to lighten things up occasionally through games and contests. Doing so can engage staff in infection prevention and control (IPC)-focused activities, while also establishing the infection preventionist (IP) as a positive and collaborative part of the clinical teams. This article will be the first in a series describing some innovative ways to increase engagement while working toward IPC objectives...and have some fun while doing it!

Every IP soon learns that expired patient care supplies are a potential infection risk—and low-hanging fruit for survey readiness! Most organizations have standardized processes for rotating and monitoring supplies in their storage areas to minimize this risk. But what about those hidden “stash” where clinicians tend to squirrel away supplies?


Consider holding an “Expired Supplies Contest”!

In a suburban community hospital, we did just that. Partnering with the materials manager, the IP designed a fun, treasure hunt-themed poster (see below) describing the contest, which was distributed to the various departments, and each leader “talked up” the contest during staff huddles. Employees were given two weeks to search all the nooks and crannies for outdated supplies. To accommodate therapists, phlebotomists, environmental services, float staff, and other roaming services, employees were allowed to claim items from *any* patient care location within the facility (not just their home unit). Expired patient supplies found were tagged with the staff member’s full name and department, and where the item was found.

Prizes were awarded for 1) the *oldest* item found (bleach wipes dated 2015!), and 2) the *most* supplies found by one person (blood tubes that had been stockpiled in a cabinet). The prizes were Amazon gift cards supplied by human resources. Additionally, the materials manager kept a spreadsheet on the

findings, along with the dollar value of the items, and shared this with the leadership team. Overall, 105 expired items were found, with a dollar value close to \$1,200.

This novel approach was super successful! Staff had a lot of fun, became super engaged, and, as a result, became very aware of expiration dates and “stash.” Leaders were also able to identify problem areas and trends. The contest was such a success that it was repeated a few months later (using a *Game of Thrones* theme). We also passed our survey with no IPC findings!

I would encourage all my fellow IPs to consider implementing fun and creative ways to improve the safety of our patients. Healthcare is hard; let’s set the tone for positive and engaging ways to achieve our goals whenever possible. 

Maria Cuccinello, RN, MSN, CIC, is an interim infection preventionist who takes on assignments all over the country, and is an editorial panel member for Prevention Strategist.

You are invited to a treasure hunt!

Search your department for expired patient supplies!
(PT & CM may search the departments where they routinely work)

Prizes will be awarded to whoever finds the **OLDEST** and the **MOST** expired supplies!

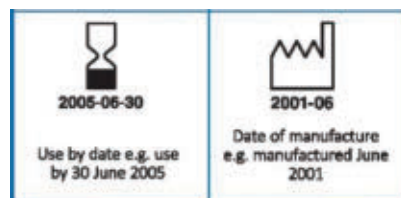
Be sure to hand any expired “treasures” to your department point person by Monday, **March 28th** so you can get credit for your find!

Hints: Look for items in “stash” and ancillary locations (i.e., outside of regular clean storage rooms). Also, look at items that have a short shelf-life, including bleach wipes & blood tubes.

Department point persons:

ICU:
Lab:
CM:
Med-Tele:
PSU:
Peri-op:
PT:
ED:

Reminder: Don’t confuse the expiration date (Left) with the date of manufacture (Right):



Understanding Ultraviolet C (UV-C) Dose in Decision Making

**UVD
ROBOTS**

The pandemic has led to an increase in the market for ultraviolet light devices. Infection Preventionists and Environmental Services Directors need to consider various factors while comparing UV devices. This includes the type of UV light, delivered dose, shadowing, maintenance, labor, and monitoring. Inactivation dose and monitoring are often not well understood and this article explains both.

Type of UV Light

Ultraviolet germicidal irradiation (UVGI) describes light in the germicidal range (200–320 nm) for disinfection of surfaces; UV-C (200-280 nm) and UV-B (280-320 nm) inclusive, UV-A (320-400 nm) exclusive.¹

UVGI alters microorganism nucleic acids resulting in replication failure. UV-C wavelengths are especially effective peaking at about 260-265 nm.² Most UV-C devices utilize light from low vapor pressure (LVP) mercury lamps radiating 95% of their energy at 254 nm optimizing germicidal effectiveness.³

This is not the whole story. The strength, position, and number of bulbs in the tower design, distance from the object, and exposure time affect dose for microorganism efficacy. Let's look at each.

What about Watts?

LVP mercury bulbs range from 40-1,000 watts. UV-C devices vary in strength and number of bulbs. For example, a device with 8 bulbs at 180 watts/bulb has output of 1,440 watts versus a device with 8 bulbs at 75 watts/bulb with output of 600 watts per disinfection cycle. The higher energy output results in more efficient disinfection by delivering more energy in a shorter time.

Tower design with reflectors delivers effective energy in all directions, and positioning of tower bulbs dictates light distribution in a 360 degree manner or less; important design elements to consider.

Don't be distant

Distance between UV-C device and surface affects light intensity. A device 1 meter away delivers 100% energy intensity, 2 meters about 25%, and 3 meters at 11%. The goal is 100% intensity on critical surfaces. Understanding device capability regarding distance is crucial.

^{1,2,3} Kowalski, Wladyslaw. Ultraviolet germicidal irradiation handbook: UVGI for air and surface disinfection. Springer science & business media, 2010.



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Exposure time

Energy output and distance affect exposure time for inactivation of epidemiologic organisms of concern. Vegetative bacteria are more susceptible than bacterial and fungal spores. Shorter exposure times can be used if the intensity of the light is strong and the distance is close.

Dosimeters for monitoring

UV-C dosimeter indicators, placed strategically, can monitor dose reaching critical areas within the room. Dosimeters change color with exposure to radiation levels. Typical dosimeters indicate yellow (no exposure), progress to orange (25 mJ/cm²), salmon (50 mJ/cm²), light pink (75 mJ/cm²), and dark pink (100 mJ/cm²). *C. difficile* inactivation is reflected by the dark pink change. Dosimeters are effective when comparing UV-C devices and as part of a quality program. Quality programs should also include real-time feedback, disinfection reports, and status reports on the health of the device.

Enlightened decision

Evaluating UV-C devices for enhanced disinfection should not be overwhelming. Recognizing that not all UV-C devices are the same, understanding basics behind proper dose for organism inactivation, and asking the right questions, the process can be simple and straightforward.



Debra Hagberg MT (ASCP), CIC
VP, Infection Prevention and
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Letters from Emerging Leaders

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What a Leader 'Looks' Like: A Letter from an Emerging Leader

BY LERENZA L. HOWARD

I attained my master's degree in healthcare administration (MHA), where I learned about the foundational knowledge of being an effective and efficient leader, including the different styles of leadership. What I learned from this experience is that the leadership style that aligns with my values and beliefs is that of a transformational leader. A transformational leader inspires their team to achieve a common goal and they have a genuine desire for each team member to be successful. Additionally, transformational leaders identify the need for change and formulate the vision, which includes a conduit to actualize the needed changes.

I have found that my MHA background has assisted me as an infection preventionist (IP) with effective communication skills and the knowledge of how best to navigate multidisciplinary collaborations while promoting synergistic relationships. I believe that leaders should receive some level of leadership training, because just having the title of a leader does not equate to knowing how to effectively lead people. It is pertinent that leaders perform a self-assessment of their skills and personality traits with the goal of identifying strengths and weaknesses, then initiate strategies to appropriately identify areas that require advancement and growth. Self-assessments are also beneficial for leaders to evaluate their impact, and this could be

an approach used to identify ways to foster and promote a healthy work environment. Self-awareness is an integral aspect in understanding how one's personality traits and predispositions impact their relationships, including those within the work environment. Leaders who practice self-awareness are impactful in ascertaining how they're perceived based on their actions and their communication style.

Another aspect of leadership that I believe is of great importance is to be a person of integrity and to have a code of self-ethics, holding yourself to a standard where you do right even when no one is looking. Effective leaders are trustworthy and hold themselves to a high standard and are



Lerenza Howard

examples for others to follow. Stewardship and taking accountability for your actions and the work you produce are attributes that are responsibly managed by good leaders, and these characteristics induce trust and confidence in the leader's capabilities.

Leaders should exemplify characteristics of servant leadership wherein they're committed to the growth and advancement of their team both personally and professionally. Therefore, effective leaders are mindful of what is best for the greater good of the team, understanding that their

PHOTO CREDIT: LERENZA HOWARD

role isn't to operate in a self-serving manner. There are times that may necessitate a leader rolling up their sleeves and assisting the team with tasks to overcome difficult times or challenges. A true measure of a leader is not only how you react to the good times but how you respond during difficult times. Beyond providing directives and deadlines when challenges arise, effective leaders identify ways in which they can contribute to the group's efforts, ensuring that organizational goals are met and to offset burnout. I believe that this is pertinent in allowing your team to know that you're vested in the vision and that you are a dependable stakeholder within the group.


Not only do impactful leaders communicate efficiently and synthesize differing perspectives, but they're also good listeners. They garner feedback regarding processes, procedures, and proposed measures of improvement with the overarching goal of advancing the organization's mission, vision, and values. They are open to new ideas and experiences which may not fit the mold of their conventional viewpoints, so it is necessary

to be open-minded. Leaders should exude emotional competence. It is apposite for leaders to leverage the capabilities of the group, and to allow for their skills, knowledge, and experience to show and shine while ensuring to give them credit and praise for their contributions.

I believe that relationships are reciprocal: you get out what you put in. Thus, a good leader does not require more of their team than they require of themselves. Although I currently do not possess the official title of one who's in a leadership role, I personally believe the title of a leader shouldn't be wielded to exert authority or power. Instead, an effective leadership approach considers the needs of the team and work environment while internalizing self-awareness.

In a society and workforce that is becoming more diverse, leaders should be culturally competent and possess a worldview outside of what they have always known. Diversity, equity, and inclusion (DEI) is a call to action and includes values that are an embodiment of measures to help individuals from all walks of life. DEI is not "lip-service," nor is it simply a checkbox that has been marked off a list

of to-dos. I believe that in promoting DEI within an organization pushes the leadership team and board members who are reflective of the individuals and communities in which they serve to ensure diverse perspectives are represented and the needs of stakeholders are appropriately addressed.

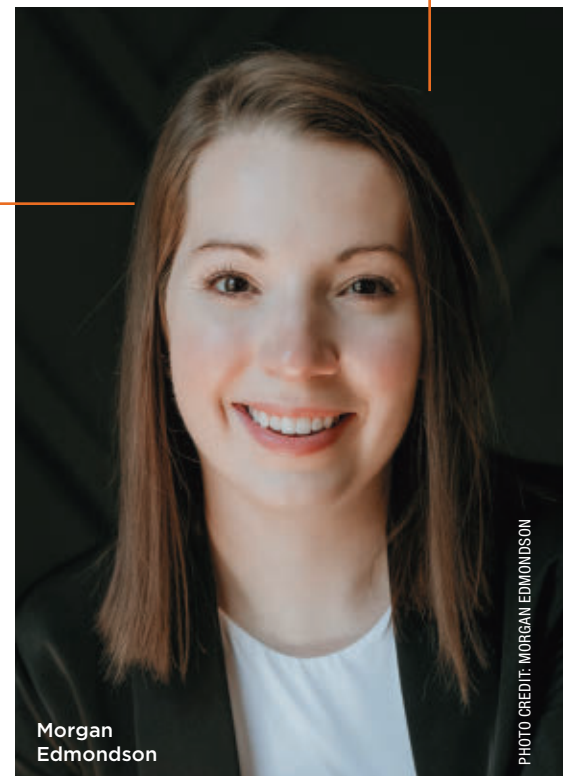
DEI is a process of mobilization that requires continuous actionable measures where resources and education are accessible for the betterment of the individuals within an organization. It is no secret that we have marginalized communities within our nation; therefore, it should be incumbent upon organizations to establish DEI initiatives that safeguard inclusive and equitable practices where everyone's voice is heard, and they feel seen. It is imperative that leaders are knowledgeable of DEI and ways in which they can promote these values within their personal and professional lives, demonstrating that they value the unique differences of others with respect and compassion. 

Lerenza Howard, MHA, CIC, LSSGB, is a 2023 Emerging Leader Award recipient, and a co-host of the 5 Second Rule podcast.

How Listening Can Lead to Growth and Fewer Infections: A Letter From an Emerging Leader

BY MORGAN EDMONDSON

Infection preventionists (IPs) are constantly learning and adopting new perspectives on various matters. When I had the opportunity to attend a class on root cause analysis (RCA) and apparent cause analysis (ACA), I was excited to learn more about a new topic. The two-day class went into detail about RCA, ACA, and common cause analysis (CCA) and when to best use each process. After discussing with some of the IPs in the class, we realized our unit-based review process could be redesigned to align more with the ACA process we were learning about. We developed a tool that integrated new ACA and RCA concepts while retaining the strongest aspects of our previous unit-based review process. The key to our new process was making sure the tool was easy to use so that unit managers and front-line staff could provide any information they had related to an infection.



Morgan Edmondson

PHOTO CREDIT: MORGAN EDMONDSON

Continued on page 35

AJIC AUTHOR INTERVIEW

BY PATRICIA STONE



PHOTO CREDIT: MOHAMED YASSIN

Mohamed Yassin

A *JIC* Editor in Chief Patricia Stone, PhD, RN, FAAN, interviewed Mohamed Yassin, MD, PhD, one of the authors of the *AJIC* article, Yassin M, Clifford A, Dixon H, Donskey CJ. How effective are the alcohol flush and drying cycles of automated endoscope reprocessors? Stripped endoscope model, *AJIC*. 2023;51(5):527-532.

Mohamed Yassin is an infectious diseases physician with 15 years of experience in infection prevention. He finished his fellowship at Case Western University Cleveland, Ohio, and is a faculty member at the University of Pittsburgh School of Medicine and Public Health. He has special interest in endoscope-related infections, burn infections, and water safety. He has been active with the APIC organization working on *AJIC* podcasts and attending research committee and editorial board meetings.

Prevention Strategist: What are the circumstances that led up to your current work?

Mohamed Yassin: Millions of endoscopic procedures are performed annually for various diagnostic and therapeutic reasons. Even a small percentage risk could lead to a massive number of infections. Infection preventionists have always been leaders in patient safety. The infection prevention team, including myself, actively searches for ways to reduce endoscope-related risks. I felt more capable of working on this problem particularly because of my previous training on endoscope-related issues as a young physician.

PS: What spurred this focus? Why is your role important?

MY: The outbreaks related to endoscope use were alarming for all of us in infection prevention. While earlier outbreaks were associated with faulty processing or design, the more recent infection events occurred despite proper processing. The idea that endoscopes are not as safe

as we thought had major implications. This led me to more closely investigate endoscope processing.

We noted that most of the information about endoscope-related infection is based on outbreak investigations. I wanted to explore the endemic (non-outbreak) rate of endoscopic infections. As we started looking into endoscope processing techniques, we found multiple opportunities for improvement. Despite the published reports indicating the need for improved safety in endoscope processing, endoscopes continued to show microorganisms, biofilm, or residual tissue debris that could potentially lead to infection.

PS: What challenge were you setting out to address when you started this type of work?

MY: There are multiple challenges in this field. First, we needed to establish a baseline regarding the rate of exogenous endoscope-related infection (due to contaminated endoscope and not secondary to the procedure itself). Second, we needed to objectively monitor the process of endoscope disinfection and patient outcomes. The endoscope sterilization process was monitored closely but not the product itself, i.e., endoscopes were not checked after processing. Third, we needed to understand how endoscope-related infections occur. The presence of microorganisms on or in the endoscope does not necessarily result in patient infection. In fact, endogenous infection is far more common than exogenous.

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

MY: Endoscopy is an essential and increasingly common element of patient care. The infection rate for endoscopy is higher than what it was thought historically and has translated to numerous cases of morbidity and mortality. Many patients undergoing endoscopic procedures are critically ill or immunocompromised, which increases the risk further. For all these reasons, prevention of endoscope-related

infection is a major challenge, and focusing on reducing the risk should be a priority for infection prevention leaders.

PS: What is a problem that you solved during your most recent project?

MY: First, we demonstrated that delayed processing is a major cause of biofilm formation and unsuccessful processing. This led us to implement audits on timely processing. Second, we performed microbiologic cultures and visual inspection (borescopic examination) to evaluate the endoscope (the product) rather than the process only. Endoscope cultures, despite being sensitive, did not reveal much additional information. Borescopic exams of the endoscope revealed numerous processing deficiencies and were very beneficial.

We have interest in pursuing molecular-based endoscope testing to focus on the most common pathogens encountered rather than non-specific microbiologic testing.

PS: Briefly, what excites you about your work?

MY: I get excited when I find new information that could add to preventing infections. I enjoy patient care, but infection prevention has a much larger impact, potentially on many thousands of patients. The infection prevention team—including myself—are very aware of the everyday issues that face infection preventionists everywhere. I am excited that we can improve things directly.

PS: What do you like to do when you aren't working?

MY: I love playing squash at least twice weekly. But I get my new ideas from walking or biking outdoors. I enjoy going for a coffee or lunch by myself. I love to read and write my notes and thoughts. Finally, I am a soccer fan and I follow the English Premier League and cheer for Liverpool. **Ps**

FURTHER READING

Tales from the auditors: What we learned from endoscope auditing

[DOI:https://doi.org/10.1016/j.ajic.2019.06.029](https://doi.org/10.1016/j.ajic.2019.06.029)

Splash generation and droplet dispersal in a well-designed, centralized high-level disinfection unit

<https://doi.org/10.1016/j.ajic.2022.08.016>

Borescope examination and microbial culture results of endoscopes in a tertiary care hospital led to changes in storage protocols to improve patient safety

<https://doi.org/10.1016/j.ajic.2022.09.009>

Healthcare worker feedback on duodenoscope reprocessing workflow and ergonomics

<https://doi.org/10.1016/j.ajic.2022.01.012>

Alcohol flush does not aid in endoscope channel drying but may serve as an adjunctive microbiocidal measure: A new take on an old assumption

<https://doi.org/10.1016/j.ajic.2022.09.020>

Improving mastery and retention of knowledge and complex skills among sterile processing professionals: A pilot study on borescope training and competency testing

<https://doi.org/10.1016/j.ajic.2023.03.002>

LETTERS FROM EMERGING LEADERS...

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We quickly learned a few things from our pilot of the tools. Just by encouraging managers to interview the involved staff, we discovered details that patient charts could not capture. Managers became mini-IPs, and front-line staff became disease detectives. After officially rolling out the new ACA tool, we identified common causes and disseminated information on a larger scale throughout our healthcare system. I was pleasantly surprised by the willingness of front-line staff and unit managers to provide all of this information. My biggest concern with the tool was that staff and managers would find it cumbersome and be reluctant to use it. Instead, staff felt empowered to speak up and share their knowledge.

I came across a quote by Adam Grant, an author and professor of organizational psychology, which said, “Everyone you meet knows something you don’t and has wisdom from experiences you haven’t lived. Every conversation is a chance to learn something new.” The ACA process illustrated this and more. Units and teams provided insight and fresh perspectives that were often missed when key team members were excluded. Each time teams met to discuss an infection, new ideas were shared and lessons learned. We found new solutions and have had our lowest number of CAUTIs and CLABSIs since COVID.

IPs lead every day, but occasionally, we forget to take the time to listen to everyone around us. It is during these moments that IPs

can truly grow. By listening and creating the opportunity to easily share knowledge, I built relationships, gained new perspectives, and as a team, we prevented more infections. If you don’t have a collaborative infection drill-down process, I encourage you to develop one. Engage with your teams and listen to their thoughts on what went wrong and how they want to prevent it in the future. As an IP, you never know where your day will take you, but that journey is always made better by partnering and learning from the people around you. **Ps**

Morgan Edmondson, RN, BSN, CIC, CCRN-K, is a 2023 Emerging Leader Award recipient.

PLAY A PART IN THE COLLECTIVE: AN INTERVIEW WITH AC2023 OPENING KEYNOTE SPEAKER BERTICE BERRY



Bertice Berry

PHOTO CREDIT: BERTICE BERRY

Bertice Berry, PhD, is an award-winning public sociologist, best-selling author, and lecturer. For the past 30 years, Berry has helped design and lead the DEI efforts of thousands of companies and associations including Northrup Grumman, American Association of Critical Care Nurses, Amazon, Seattle Children's Hospital, L'Oreal, and several others. Berry's work with the Institute for Story focuses on helping individuals and groups find their unique gifts and stories, so they can best position themselves for change. Her Internal Diversity Assessment (Vercher-Berry ID Assessment) is designed with the understanding that diversity increases positive outcomes and internal diversity produces a better outlook. She is the author of 14 works of fiction and non-fiction and has had her own nationally syndicated television show and has hosted, interviewed, and made numerous television, documentary, and radio appearances on a variety of venues. Berry is the recipient of numerous awards and accolades and has been awarded 10 honorary doctorates. She earned her own doctoral degree from Kent State University at the age of 26 and still sees her most fulfilling achievement and role in life as that of mother to her five adopted children. Listen to her speak in Orlando on Monday, June 26, at 8:30 a.m.

Prevention Strategist: What can healthcare professionals expect to learn from your presentation on Monday, June 26?

Bertice Berry: Attendees at APIC's conference can expect to learn several things. I'm going to talk about gratitude—first, for the tremendous amount that I personally have for who IPs are and what they do, and second, how IPs can increase the gratitude they have for each other and how to teach others around them to be grateful for them. Everyone needs to be grateful for the care that they receive from healthcare providers. IPs are the unseen, critical healthcare professionals, who are always working to keep us all safe. So it is critical for IPs to know and understand their worth. IPs may be hidden, but they are the foundation to safe and effective healthcare.

PS: How did the idea of everyone having a unique purpose develop for you?

BB: Sociologists recognize how connected people are to each other. The self is social. In South Africa, we have a word for that: *ubuntu*, which means "I am because we are." It is a whole concept and a way of existing. You need the collective, but the individual has a part to play, too. Society is very individualistic, we don't stop to think, what is my part for the collective? It's always, what do I get out of this, and not, how do I play my part in all of this? In graduate school, I learned from the psychologist Akbar that we are responsible to ask ourselves on a daily basis, "Why me, here,

now?" It may be that the moment calls for you to be selfless, to improve on something for the next individual, or to remind you of who you are.

PS: How would you motivate a healthcare professional who is experiencing doubts regarding the importance of their work?

BB: IPs are also people; they are affected by what they see and can do. I'd remind them that working with a purpose keeps you engaged longer. You are engaged because you feel a sense of belonging because you know your purpose, and there is passion in the purpose. Your calling is your purpose as an individual. It is not your job. Learn to tell your story better. It helps with understanding how we are and to help others develop their own purpose, so the collective continues. It's like having a mission statement for yourself, the way an organization or business will. As Archbishop Desmond Tutu said, "Humans become human through other humans." We are all responsible for creating a better collective. IPs are a great example of individuals being connected to the whole collective, where an individual purpose (to keep others safe in a world full of infection) connects to the collective.

PS: What is your own story about reconnecting with your purpose?

BB: I like to say, "You don't have a story, you have a library." No one is one story. Reconnecting and reigniting your purpose

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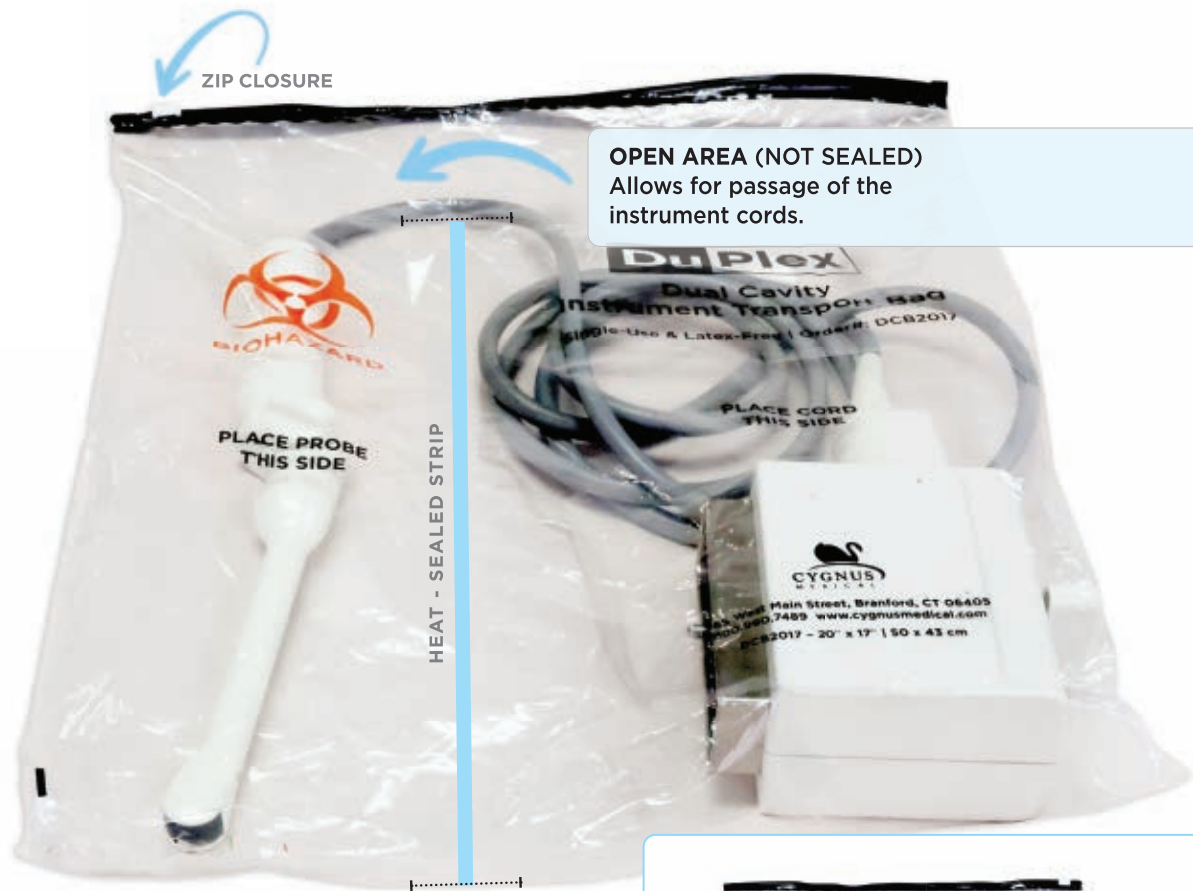


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Around the world with WHO's ALICE SIMNICEANU

BY SASKIA POPESCU



I had the pleasure of interviewing Alice Simniceanu, MPH, CIC, a few years after meeting and getting to work together at the World Health Organization (WHO), which was a real treat considering how inspiring her work is, but also how honest Alice has been in the challenges and rewards of infection prevention and control (IPC). In this interview, we discuss her exciting work within the WHO, what the future looks like for IPs, and also how diverse our range of work can be.

Prevention Strategist: What skills as an IP have best served you in your WHO role?

Alice Simniceanu: Having previously worked as an infection control practitioner in Canada prior to coming to WHO, I understood the context of making guidelines and trainings for IPC practitioners and healthcare workers. Working in the local hospital system, as well as for provincial and federal governments, I understood the need for operationalizing this guidance and sometimes having to adapt the guidance to a local context where the best practices were not possible to be implemented. Oftentimes, and especially at WHO, we make guidance based on the recommended best

practices—these are the most correct things you should be doing if you wanted to ensure you are completely preventing nosocomial infections—but the truth is that even in the top hospitals in the world, they were not able to cope with the increased demand of the COVID-19 pandemic and therefore as an IPC professional, you must use your knowledge of basic IPC principles of the precautionary principle to adapt guidance and best practices to the best of your abilities.

PS: What surprised you most about working for WHO?

Like any other budding public health professional, getting to be able to work in public health at the global scale for WHO was my ultimate dream. I imagined getting here at 50 after 25 years of working in various settings and coming here as an “expert” at the end of my career. In fact, I landed my first job with WHO on my 30th birthday and after starting at headquarters, I realized there are lots of young professionals here, some in their 20s.

What surprised me most is the wide breadth of activities that WHO is a part of and the range of things that you are exposed to when you work here. I remember one of my first weeks at the WHO canteen, I was sitting beside David Heymann, who wrote the “control of communicable diseases” manual

we used in the hospitals as IPC professionals. It was such a fangirl moment for me. A few months later, the pandemic began, and I got pulled into the COVID-19 outbreak response, and I remember going to these morning meetings where everyone gathers to update on their area of the response, and it was really a “wow” moment to be in the room among some of the world’s leading experts in these fields.

During these emergencies, the world looks to WHO for guidance, and I was amazed to be a part of that team, developing guidance for IPC during the pandemic. What surprised me about this was the extensive processes of development, the literature reviews, the expert discussions, and although outbreak responses require quick guidance, these processes sometimes took months and included input from hundreds of people globally. It was really a career highlight that will go down in history for me.

PS: What advice would you give to a fellow MPH who is interested in following in your footsteps?

I think the most important thing to do is to figure out what you really want and as early as possible so that you can set up your work experiences and professional goals in that direction. I would try to get involved in

different projects early on, to look for roles that give you a range of different experiences. For me, I discovered infectious diseases as a part of my MPH, and in speaking with the professor and others about jobs in public health and infectious diseases, they led me to the field of infection prevention and control and antimicrobial stewardship, and it was the perfect blend for me because I loved epidemiology and infectious diseases, and so was born my idea that I wanted to become an infectious disease epidemiologist one day. So I started cold-emailing professionals in those positions at different hospitals, and they led me to my first role as in IPC for Mount Sinai hospital in Canada working with one of the giants of IPC and AMR in Canada at the time, Dr Allison McGeer. I then set up all of my work experiences in the direction of hospital epidemiology and IPC. I made sure that when I had multiple opportunities, I always chose the one that aligned with my ultimate goals. I would tell young professionals to reach out to those in their field and ask for advice, ask for guidance, and ask for help. It never hurts, and the worst they can do is not reply to you, but someone will, and eventually you will find kind, caring, supportive mentors who can help guide you along your road. I have definitely found some great people along the way who I owe my career progression to.

PS: Is there one “universal truth” related to IP for all of the different diseases you have helped respond to?

I think the IPC principles are the same for all diseases, known or unknown: we

have to use our risk assessment and our precautionary principle. SARS-CoV-2 was indeed an unknown virus, but quite quickly we were able to determine it was a respiratory disease with transmission primarily through aerosols exhaled from a person’s mouth and nose, much like the first SARS-CoV and other viral respiratory infections—the IPC principles remain the same; you want to prevent transmission at the source and prevent onward transmission so the basic measures of physical separation of infected persons (either by distance or barriers, hand hygiene, mask and other PPE use, cleaning, etc.). Of course a novel virus meant we had great debates over what kind of masks, how much separation is enough, how long to isolate patients, etc., but the principles are the same; the risk of transmission will determine what measures you need to recommend. Of course these nuances of which PPE and which masks to wear may change among the different diseases like Ebola, mpox, and MERS, but the need for IPC is constant—it is needed wherever healthcare is being delivered. And that is why it is important that champions in our field need to advocate to be at the table whenever decisions about healthcare are being made, to ensure that healthcare is delivered safely and that infectious diseases are always managed by healthcare workers alongside professionals specifically knowledgeable and dedicated to IPC.

PS: What role can IPs take in preventing the next outbreak?

This is a good question, and one we have been thinking of in the past year as

we start thinking of what we’ve learned from the COVID pandemic. I think IPC professionals have an important role in educating healthcare workers who they work with in their healthcare settings about the importance of basic preventive measures we’ve taken away from the pandemic, both in the healthcare settings—hand hygiene, appropriate use of masks and PPE, the importance of ventilation, cleaning and disinfection, etc.

During the pandemic they had a unique position in being one of the only few professions that was competent enough to give recommendations and train other healthcare workers in the best preventive methods not only in health settings, but also out in the community. I think one of the greatest learnings we have to take away is the constant advocacy for preventing infections and for these measures (such as cleaning your hands, wearing a mask when sick, covering your cough or sneeze, etc.) that healthcare workers have had renewed training on and the public has had more awareness of—whether it’s a small cold or maybe COVID, it is not OK for you to go sick to work, or to not try to protect those around you against getting your illness. Similarly in the community, public buildings and restaurants continue to provide hand sanitizer and people are more aware of their overall hygiene practices.

I truly hope that these are some of the things that will outlast this pandemic and hopefully work toward preventing future outbreaks. **PS**

Saskia Popescu, PhD, MPH, MA, CIC, is a Prevention Strategist editorial panel member.

PLAY A PART...

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are a constant effort, as is knowing the answer to “why me, here, now,” and understanding that the answer will change. You have to be able to say, when you have a limited physical capacity, that you still are who you say you are. When you are doubting the existence of anything outside yourself, are you still who you say you are? Learn to reconnect and strengthen your purpose all the time. If you don’t own your narrative, someone will twist it.

PS: You have authored 14 books! Which is your favorite and why?

BB: I don’t have favorites, because favorites become preferences, and preferences become prejudices. Having favorites of things is the brain’s way of saving energy and cutting down on too much overthinking. I allow myself to get excited about all my books. I just released a book through my own publishing house, Freeman House, called *Black World*. Early reviews have come in and refer to the book as “history with hope.” *Black World* tells the sweeping story of a history in which everyone can see themselves, and you see the cause and

effect of the collective. In order for stories to be effective, they need to be hopeful.

PS: What else would you like to share with the attendees of the annual conference?

BB: IPs know the unseen, and see the unknown, and understand how close we are to sickness and danger all the time. Before the COVID pandemic, the story of the IP was that we didn’t know who they were because we didn’t have to. Prevention is invisible. But invisible doesn’t mean that they aren’t amazing. **PS**

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Insights on Antimicrobial Stewardship with AMAL AL-MAANI



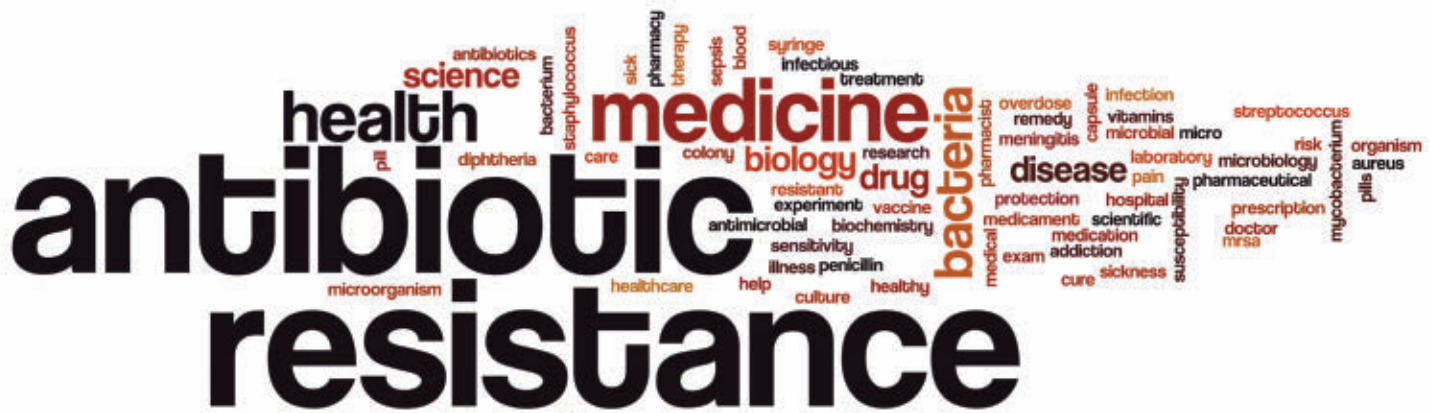
Amal Al-Maani, MD, DTMH, FRCPC, ICC, is senior consultant in pediatric infectious diseases, and director general for diseases surveillance and control, Ministry of Health, Oman.

She has presented at many national and international conferences and is the 2021 recipient of the WHO's Sasakawa Health Prize in 2021, which is awarded to anyone having accomplished outstanding, innovative work in health development, for her work in the field of infection control and antimicrobial resistance. She has published many papers in the field of infectious diseases and infection control with a focus on antimicrobial resistance and emerging resistant pathogens, and most recently, on COVID-19.

Prevention Strategist: In Oman, what role do infection preventionists play in antibiotic stewardship?

Amal Al-Maani: Oman mandates that all healthcare workers are trained in basic infection prevention and control (IPC), and this includes students who wish to work in a clinical area and provide patient care. For students to further their practical education and continue training or pursue electives, they must present current certification from their institution that they have been provided basic IPC training. In doing so we have made IPC everyone's business. This mandate was suggested following the MERS outbreak in the region and Ebola in west Africa so that we ensure the preparedness of healthcare facilities for infectious hazards.

The COVID-19 pandemic had enforced the need to implement and follow up organizations' performances and progress in staff training, and it also had created a need for the online platform where workers can attend and complete the theoretical aspect of training in their own time. During outbreaks and the pandemic, we really cracked down on IPC because the spread risk was mostly in emergency rooms and hospitals, among the healthcare workers and from them to the patients with potential spillage to the community. The root cause analysis was that nurses and physicians weren't following IPC practices and there was a noticeable gap in IPC training. But hospitals in Oman saw fewer MERS outbreaks, and this was credited to the strong IPC programs implemented. In this era, in which infectious diseases and outbreaks present risks to healthcare systems, everyone can prevent infection before it causes more fatalities and burden through observing the best practices of IPC. The training and certification of healthcare workers are important parts, but more important is the follow-up and governance. With the limited human capacity in the infection prevention field, we tried to make the best of technology in both training and follow-up. Initially, the online interactive courses for IPC that we build within educational institutions were for residents, but now all healthcare workers in governmental sectors and private sectors can access and take them for free. They can do the course on their own time, do an assessment after each section, and can do it over a period of time. Once the online course is completed, they have to take the certificate of completion to the hospital and do the competency part in



order to get registered as basic IPC certified in their facility. Healthcare workers are only required to do the competency part for hand hygiene and personal protective equipment observed by the facility IPC team, which is less of a burden for the team compared to before, when they had to conduct full training. The recertification in basic IPC was set to be every three years.

PS: What has worked for you in Oman against antimicrobial resistance (AMR)?

AA-M: Our strategy against AMR is that we have really tried to prevent the spread of the superbugs within the healthcare setting with special attention on raising awareness of healthcare workers and the community. There was a lot of attention when AMR first became an issue, and the focus was on how dangerous the resistance can be. The rapid solution is infection control. We were seeing most AMR in healthcare-associated infections (HAIs), so by strengthening the IPC and surveillance, the spread across the healthcare environment will be limited and thus limiting the risk of spillage of those microbes into the community. If we can prevent the transmission of infections, utilization of antibiotics is limited to one or two infected individuals, rather than a cluster in an outbreak, which is an important aspect of antimicrobial stewardship. We strengthened the core capacity of the hospital’s IPC program by educating specialized people to be leaders in, and to implement, good IPC practices, the

transmission of infections including those caused by superbugs were minimized, and overutilization of antimicrobials were limited. Ultimately, this will work for communities at national and global levels.

PS: Tell us about your surveillance system.

AA-M: We started by examining different systems in different countries, as well as the global system coming from WHO. We realized we wanted to do something more inclusive that would allow us to closely monitor our own situation. It’s a different system in that it doesn’t concentrate on certain bugs; it is made to cover all the bugs, and can detect if there is a new resistance. It means less of a burden on those hospitals in the system because the surveillance system can analyze data at the central level and support the hospital by giving them data so that they can focus on the control part of an infection, which results in cutting the need to hire more people. That makes them willing to be part of the surveillance system. The system, OMASS (Oman Antimicrobial Surveillance System), includes data on multidrug-resistant organisms, and it pulls the data directly from labs. Any organism flagged as resistant is noted, removing duplicates per patient for a defined time interval. We include blood, urine, and other specimens but monitor blood cultures as an indicator for invasive infections and thus burden of resistance.

With OMASS data we were able to build an annual national antibiogram by pulling data on sensitivity of different bugs to

antibiotics, which will help guide prescribers in different parts of the country on best choices for treating infections and also contribute to antimicrobial stewardship. If you are not aware of a bacteria’s sensitivity to a certain antibiotic, things can go horribly wrong with patients in clinical scenarios. The antibiogram can provide guidance for the physician and also is an important consideration when updating treatment guidelines.

As part of OMASS, we also look at utilization of antibiotics at the institutional, regional, and national levels. By comparing yearly consumption information, we can identify areas where there are significant increases in utilization and investigate the issue and provide feedback and corrective intervention as per analysis of the situation. For example, there was a steep increase in amoxicillin prescriptions in dental practices from a particular region after dental extraction. We did focus training and rectified the practice with enhanced monitoring and education for both patients and care providers.

PS: What could the U.S. learn from Oman experiences in term of best practices to combat AMR?

AA-M: When looking at best practices in the United States and Oman, we are not comparing apples to apples! The health system in the U.S. is much different from Oman. So when it comes to different set-ups and different healthcare systems, you can’t say who has the best practices in different

parts of the world. In public health, we don't re-invent the wheel; rather, we build on what we already have in the system and tweak what is working well so we get the best of the system that we already have. Everyone needs to figure out what is best for their system and implement those concepts and ideas. At different meetings on the global level, such as those hosted by WHO or at medical conferences, we meet new colleagues and present our medical literature to show the evidence, but also discuss the pros and cons. It's all a part of how we can benefit from each other.

PS: In your opinion, what is the U.S. doing “right”?

AA-M: There are a few things:

Governance in general is better in the U.S. Of course there are many disadvantages to the insurance system, but insurance policies make the hospital invest in infection prevention and control efforts to avoid getting HAIs. Insurance agencies are driven by the interest to not have to pay for infections. The government in Oman pays for the healthcare system, but insurance may really strengthen the seriousness of healthcare facilities in prevention and control of the spread of HAIs and improving AR in our country.

Sharing of hospital data. Oman does not yet publish data on the surveillance of HAIs but the U.S. does, and it has a positive impact. Hospitals compete for best quality of care, which strengthens their efforts. Regardless of the way the healthcare system is set up, in the end, we all want a safe healthcare system for everyone.

Stewardship. The U.S. is also doing better in terms of AM stewardship. It's a strongly structured system in the way the U.S. follows, monitors, and mandates the implementation of their program. In Oman, there is no mandate of AM stewardship for healthcare facilities. There are facilities that have adapted an accreditation system, which I advocate for, because by going to an accreditation system you set up best practices. Only certain hospitals in Oman have the AM stewardship program. Other facilities use WHO patient safety mandates that look at process implementation rather than outcome targets as a minimal requirement. You need to have a proper AM stewardship program with funding and staffing. In Oman, there is a shortage in human capacity, because people involved

in the program are also practicing. There is no allocated budget for the program that can pay for the intervention. There is a committee for AM stewardship, but members are also on staff with other clinical duties. Pharmacists, IP consultants, nurses; there isn't always an epidemiologist, but you try to make the best of current staffing available in the building to develop programs.

PS: What does the future look like for global antimicrobial stewardship efforts?

AA-M: There are current approaches, such as One Health, that promote improvements in environment, animal, and agriculture health, which is all part of the fight against AMR. They are just the beginning of a strong global movement against AMR. Awareness, surveillance, and IPC are all applicable to animal and human health. Oman hosted the third AMR conference last November, and the output was really that we need to work on action plans for One Health rather than concepts and mobilize the assistance. [<http://www.amrconference2022.om/>]. We will take this to the United Nations to advocate and endorse at the global level to work on appropriate usage of antibiotics, to work directly to strengthen IPC and improve other health aspects by improving food manufacturing or animal health so we don't need antibiotics.

WHO, food and agriculture and the environmental organizations under the UN, and the World Organisation for Animal Health, overlook different aspects of One Health when it comes to controlling and implementing action plans for AMR at a global level. We are moving into a new era where action is monitored at a global level. The global threat of AMR is one of 10 threats that the WHO lists as a priority.

The Global Leaders Group advocates for political and financial support for interventions and looks at problems at a global level rather than in silos. If countries work together to help each other, they can also support areas that are really struggling. We will not succeed against AMR by just focusing on our own levels. The global community needs to do as IPs, or healthcare workers in general, do, meaning we have that ability to save lives, not only in our own part but globally, and to share our stories. It will help others and make them feel supported and promote change in their area. **Ps**



“In the end, we all want a safe healthcare system for everyone.”

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Demystifying DATA ANALYSIS

BY SANDY SMITH



For many people—including infection preventionists—working with data can be unfamiliar and intimidating. And when it comes to making presentations to leadership, said Jordan Bosco, MPH, CIC, these IPs can field queries without giving the common response of, “I’ll have to ask my analyst.”

“As infection prevention has evolved, it has become a lot more data driven,” said Bosco, a senior infection preventionist at University Hospitals Cleveland Medical

Center. It used to be that only nurses were hired for these positions. These days, the field draws lab technicians and those in public health, among others. And in a

lot of departments, especially in larger health systems, he said, these infection preventionists rely on data analysts to pull and interpret reports. Not all IPs are required to pull reports from CDC’s National Healthcare Safety Network—the nation’s most widely used healthcare-associated infection (HAI) tracking system—at all.

Bosco, a data analyst who became an IP, enjoys sharing his knowledge, just as he did with the session “Bridging the Gap: Data Analysis and Infection Prevention” during the APIC 2022 Annual Conference. He also encourages IPs to remember that

hospital leadership is focused on finances and what's best for the hospital overall. Here's where effective data analysis helps; it can drive evidence-based strategies and help secure the funding and resources needed for infection prevention programs and initiatives.

Evidence shown to reduce infections has direct ties to CMS reimbursement programs, helps address adverse outcomes, and saves patient lives. According to the CDC, he said, hospital-acquired infections affect about 2 million patients each year in the U.S. Nearly 90,000 patients die, and the direct costs to healthcare facilities range from \$28 billion to \$45 billion. "So when we're presenting our data, we want to consider determining attributable costs of HAIs to both patient illness severity, comorbidity and length of stay prior to acquiring an infection." Not accounting for this in the presentation, he said, may lead to biased estimates. Establishing trust and credibility, then, means keeping action plans consistent with the hospital's strategies and goals; showing ways to measure success while demonstrating cost-effectiveness with as limited bias in estimates as possible; and framing the problem clearly and developing a hypothesis for potential solutions.

During the session, Bosco broke down key terms.

The Standardized Infection Ratio (SIR), for example, is a summary measure used to track HAIs at a national, state, or local level over time. It adjusts for various facility and/or patient-level factors that contribute to HAI risk within each facility. The SIR allows comparison of observed infections with the number of predicted infections, based on the standard population, as calculated by the NHSN. SIRs are the preferred method for data analysis.

NHSN calculates the expected number of infections for CAUTI and CLABSI using a negative binomial regression model, considering factors such as the CDC location code, facility bed size, medical school affiliation, facility type and birthweight (for CLABSI in neonatal intensive care unit patients). Infection preventionists are not likely to have to do their own calculations for the number of expected infections. "But what you might be asked by leadership is what factors account for the risk, or the adjusted measurement, in your expected number." Further NHSN guidance is available

through <https://www.cdc.gov/nhsn/ps-analysis-resources/>.

The expected number of LabID infections is also calculated through a negative binomial regression model. As for surgical site infections (SSI), they're calculated using a logistic regression model. The more surgical procedures, the higher the risk of infections in that population.

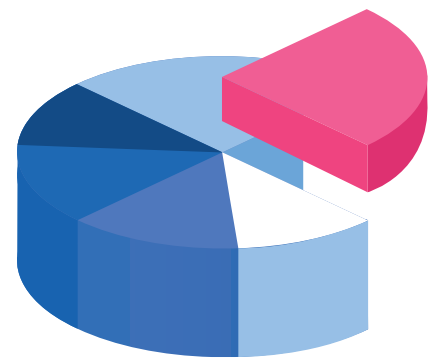
Bosco dove further into interpreting p -values and confidence intervals for unit SIRs. The p -value is a measure of the probability that an observed difference could have occurred just by random chance [if not statistically significant (>0.05)]. Simply, it's defining whether the observed number is different from the expected number. The confidence interval is the range of values in which there is a high degree of confidence that the SIR lies within it.

Targeted Assessment for Prevention (TAP) NHSN reports allow ranking facilities or locations to identify and target the areas with the greatest need for improvement. They allow calculation of the cumulative attributable difference (CAD), or number of infections that must be prevented to achieve an HAI reduction goal. It's the distance from the target.

The Standardized Utilization Ratio (SUR), meanwhile, is used to measure device use that is risk-adjusted based on facility and patient-level factors. It's the number of observed device days divided by the number of predicted device days. SURs, he said, are a process or outcome measure that infection preventionists can use to promote action within their facilities. They were developed to track both infectious and non-infectious patient complications. Unnecessary device use is a marker for poor quality of care and may provide patient harm outside of infection risk, he said.

Bosco also compared run charts and control charts. A run chart, he said, is an epidemiologic tool used to identify how processes change over time. It's typically represented by a line graph, with variations shown as changes of the overall trend of the graph. Run charts don't measure specific statistical variances such as in control charts. The main parts of a run chart include a center line or median; the X-axis or time period of interest; the Y-axis or scale of plotted points; and the data values on the graph.


Process control charts, conversely, are a set of methods that can be used for improving systems, processes, and outcomes. Their primary goal is to recognize and understand



"common cause" and "special cause" variations that affect a process. Control charts are useful because they help distinguish between outliers in data and significant changes in process. Processes deemed "under control" show data curves that are stable with limited variation. Parts of the control chart include the upper control limit (UCL), central line (CL), and lower control limit (LCL).

Common cause variations show that future data points are easy to predict based on observed patterns in the data set. Hand hygiene compliance provides an example. When an external influence or process is introduced—something like a new employee who doesn't know protocols—that's considered a special cause variation. Once identified, special causes must be fully understood and addressed. In the previous example, a process measure might be hand hygiene in-services for new nursing unit employees. Special cause can be positive or negative, based on whether it's a good or bad change in process. It's important, he said, not to focus on an upward or downward trend, but rather what's desirable based on the data illustrated.

Control charts typically contain between 25 and 50 data points. Too few data intervals, he said, may inappropriately capture special causes that don't reflect true process change. Run charts are also a good option when statistical programs aren't available. And if the facility is too small for NHSN to create an SIR, rates could be used instead, or reports could be run over a longer date range, such as a year rather than a month.

Overall, he said, data pinpoints key issues, provokes conversation, and solidifies the role of the IP. "Data drives change." 

Sandy Smith is a freelance writer for Prevention Strategist.

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INFECTION CONTROL RISK ASSESSMENT: Leveling the Risk of Construction Projects

BY SANDY SMITH

The end goal of any healthcare construction project is improved facilities and conditions for the patients. Whether repair, renovation, or an entirely new building, there is a long path between idea and shiny new facility—and it can introduce infection risks at every turn.

Gregory C. Gagliano, MSN, RN, CIC, has been a nurse for more than three decades, and started in infection prevention since 2009. He was trained in ICRA best practices in healthcare construction in 2014 and now serves as quality manager at Cleveland Clinic. He believes that many infection preventionists may not take full ownership of this critical area. He knows this because when he was new to infection prevention, risks were not a focus until the day he was asked to attend a meeting about a new project.

“I was confused, unsure, and perplexed,” Gagliano said in an APIC webinar, *Tool Belts and White Coats: Healthcare Construction*. “I learned a lot. I took notes and found answers.”

Still, there was something about construction that appealed to him. “The ICRA leads were so friendly and engaging that I wanted to learn more about the program. Also, it is an area of infection prevention that is different, and I liked that ‘out of the routine’ feeling.”

While it may be a passion for him, it may be unfamiliar to many infection preventionists. Infection control risk assessment (ICRA) is a multi-pronged approach used to evaluate and assure safety during any construction project. An ICRA matrix can help determine the level of risk. An ICRA plan is shared between the facility and construction



crew, agreeing on ways to mitigate risk to decrease the chance of infection to all those in the building during the project. ICRA certification training can empower facility staff and construction crews on safe practices and ensure everyone is speaking the same language.

“We need to understand what the other is thinking and why they think what they do,” he said. “The construction professional may be thinking, ‘Why do we need to put up all these barriers? Why do we need to have negative pressure?’ The infection preventionists are saying, ‘You will get dust all over the hospital. Dust can infect patients.’”

Knowledge is Power

Gagliano has been involved with ICRA for projects large and small, from building a completely new hospital building, to fixing a pipe above a hallway ceiling tile. The new building was a big project but lower in risk since patients were not present. Another project, a months-long renovation of nursing units within an existing hospital, was very different.

“So much dust, dirt, and debris were produced. The patients, as well as employees and visitors, needed to be protected from any infectious agents stirred up from the first day until the last. With vigilance and ICRA training certification, the construction professionals and hospital workers were able to open beautiful, brand-new units without harm to anyone. This was a proud moment.”

The smaller the project, the more likely that an ICRA plan might be overlooked. “But opening up just one ceiling tile for a few seconds can generate dust,” Gagliano said. “It’s the popping of the tile that creates the problem, not the length of time the tile is open.”

For larger projects, like a renovation that may stretch on for months, adhering to infection control practices is vital. “These can be a significant source of infection and we need to maintain every possible barrier, every negative pressure solution, to make sure no one gets infected.”

The ICRA plan is completed by the project manager or facility manager and sent to impacted committees, including infection prevention. Each participant has a say in what is required—and know what is expected for the project.

“If a zip wall or negative pressure was not put on the form initially, I have the ability to make sure it is done so that these things are known ahead of time. That way, when the construction team is preparing to do the project, they know what is needed.”

A copy of the final ICRA plan is required to be on hand at the construction location. Gagliano encourages the infection preventionist (IP) to be comfortable asking to see it, even if not assigned to the project.

In addition, the IP should make a point of conducting regular rounds on construction projects. “If you know you filled out an ICRA for a project that was supposed to start in March and it is now March, you need to make sure that everything is going according to plan.”

The Team Approach

Each member of the construction crew, the IP, the project manager, facilities, environmental services, and others have roles to play. Gagliano believes that ICRA certification can help each role understand the overall needs and importance of the collective goals.

“ICRA training supports communication,” he said. “If followed properly, the entire process from start to finish ensures a safe, clean environment for everyone.”


Ensuring patient safety may be the responsibility of every worker in a facility, but it often falls to the IP. Certification can be invaluable in empowering the IP to speak up, and not just on projects they oversee. “Every IP who has ICRA certification is qualified and authorized to speak up at any construction site, at any location,” Gagliano said. “I compare it to being certified in infection control in that the knowledge base earned through the training qualifies any IP to be an IP in any healthcare setting for any population. The information learned in UBC ICRA training transcends all healthcare settings.”

ICRA training is readily available, with some fee-based training providers. Gagliano works with the United Brotherhood of Carpenters and Joiners of America (UBC), which provides free training. Learn more at <https://ubc-icra.org/>.

“ICRA training helps you understand each other’s perspectives and leads to better compliance. Better compliance is easier when you know what’s expected.”

It is not just for infection preventionists and construction teams; Gagliano encourages a variety of disciplines to take the training so that they can play a part in ensuring a clean environment.

That can put additional eyes on the facility, something Gagliano has appreciated. At his facility, one patient transporter took ICRA training and became “very observant. He paged me at least a few times when he wondered if something at a construction area was not right. I so much appreciate him for doing this. Turns out he was right. I talked to the construction manager and had a good outcome.”

Not every IP will have a passion for construction projects like Gagliano. But understanding the risks that these projects bring is vital to ensuring patient safety. 

Sandy Smith is a freelance writer for Prevention Strategist.

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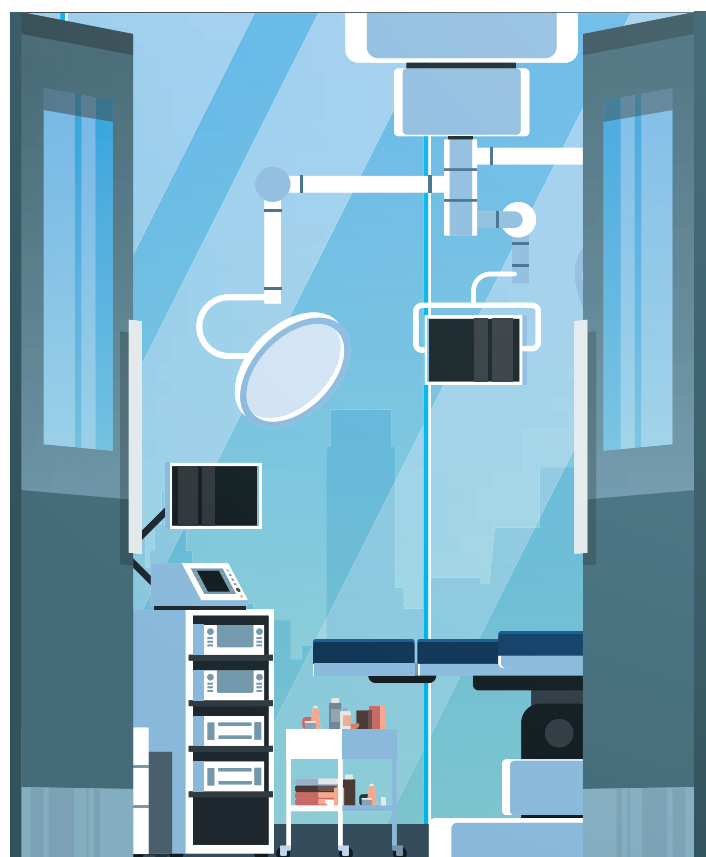
¹. Beausoleil C, Comstock SL, Werner D, Li L, Eby JM, Zook EC. Antimicrobial persistence of two alcoholic preoperative skin preparation solutions. *J Hosp Infect.* 2022 Aug 30;129:8-16. doi: 10.1016/j.jhin.2022.08.008. Epub ahead of print. PMID: 36049573.

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To Tackle SSIs, IP Teams Deploy **STANDARDIZED PROTOCOLS AND MONITOR COMPLIANCE**

BY MEREDITH SALISBURY



With the rates of some hospital-associated infections (HAIs) continuing to rise, it is critical to address their most common source: surgical site infections (SSIs). According to the U.S. Centers for Disease Control and Prevention, SSIs account for one in five HAIs in hospitalized patients, extend each patient's hospital stay by an average of about 10 days, and cost a collective \$3.3 billion annually. SSIs also significantly increase a patient's risk of dying, with 75% of deaths among patients with SSIs attributed to the infection.

Infection preventionists (IPs) have an important role to play in helping to reduce the incidence of SSIs by standardizing and monitoring certain preoperative protocols. At a hospital in Atlanta, one team demonstrated this with an emphasis on three key areas: chlorhexidine gluconate (CHG) bathing, nasal decolonization, and hair clipping.



In a recent continuing education webinar, two participating IPs from Emory University Hospital Midtown shared their experience

with the rollout of these updated practices. Siyeh Gretzinger, infection prevention coordinator, and Jill Holdsworth, manager of infection prevention, offered valuable lessons about what worked—and what didn't—in the three programs that were first launched in 2018. Their findings could be used to guide similar infection prevention efforts at other hospitals and healthcare systems.

Where to Start

With a goal as ambitious as reducing SSIs, it's easy to feel overwhelmed about where to begin. At Emory, the IPs started by narrowing down the entire universe of possible improvements to three specific tasks. That allowed them to take a deep dive into the protocols associated with CHG bathing, nasal decolonization, and hair clipping as they looked for opportunities to keep patients safer.

To get broad buy-in, the team prioritized an approach that invited participation from many stakeholders. All three programs were coordinated through the hospital's Surgical Site Infection Steering Committee to ensure leadership involvement and support. "That was essential to making sure we were taking a holistic approach," Gretzinger said in the presentation.

One common goal was to get as much done as possible outside of the operating room—and even out of the preop arena. Managing these tasks ahead of time meant reducing the chances that a procedure would be performed hastily or incorrectly later. CHG bathing, for example, could be performed the night ahead and again the morning of surgery. "We wanted to take work away from preop," Holdsworth noted in the webinar.

For each protocol, the IPs and their teammates assessed current practices within the hospital, taking particular note of any differences in how these were performed across service lines. They also reviewed the literature to help them set specific goals for improvement with each program. They aimed to increase the use of preoperative CHG bathing by 10 percent annually for inpatient and outpatient procedures, increase compliance for nasal decolonization from 70 percent to 90 percent or better, and reduce the noncompliance rate for hair clipping in the operating room to less than 1 percent.

Standardized Protocols

With their targets set, the infection prevention team worked closely with their front-line staff to standardize protocols as much as possible across service lines and patient needs. Each program required dedicated time for training and education to ensure that nurses and other care providers understood the new plan, why it was important, and how to document the protocols when they were performed so they could be tracked by the hospital's analytics team.

Whenever possible, they aimed to roll out the standardized protocols across the board. It can be easier to implement a universal change than to introduce it in some service lines but not others, Holdsworth noted. Still, some exceptions had to be made. For example, Gretzinger said, while the protocol for nasal decolonization required povidone iodine, the cardiac surgery team was allowed to continue with their preferred mupirocin technique.

For privacy and other reasons, a number of exemptions were given to the new protocols designed to move hair clipping outside of the operating room. These included vascular, craniotomy, cervical, genitalia, and ENT procedures, for which hair clipping could still be performed in the operating room so long as it was done with a special vacuum device to capture clippings. All team members were given extensive training for hair clipping procedures, which vary quite a bit by location and type of hair.

Evaluation and Compliance

After rolling out new protocols, it's all about tracking results. At the Emory hospital, the team began with monthly reports and quickly realized they needed more frequent updates. Following up on non-compliance events that had occurred a month earlier meant that staff members rarely recalled why, for instance, hair clipping had needed to be performed in the operating room and not before. After shifting to daily reports, those conversations were much more informative.


Taking a team approach with regular training and check-ins made a huge difference as well. Involving the front-line staff was "one of our biggest keys to success," Gretzinger said. Asking members of the leadership team to round in preop also helped increase compliance.

Those in-person follow-ups made it possible to track down easy-to-remedy problems—such as finding that nurses weren't sure how to document that CHG bathing had been performed—as well as ongoing challenges like finding clippers

with blades that work effectively across all hair types. "The moral of the story is, spend time with the team that you're asking to do these things and you'll usually find the answers [for] how you actually can improve these processes," Holdsworth said. Now, surgeons and other clinical team members routinely send photos or text messages to the IP team to alert them to problems or offer suggestions for improvement.

The Emory programs have become part of the hospital's routine, but the IP team continues to get daily reports of noncompliance, have monthly meetings, and offer ongoing staff training to ensure that protocols are still being followed. They also continue to roll out the programs to additional service lines. Overall, they met their goals for CHG bathing, nasal decolonization, and hair clipping, though outliers do still occur and are being addressed in some service lines. For example, the cardiac surgery team consistently performs hair clipping inside the operating room, and that's usually because they have to place a central line. "We're actually currently working with our cardiac surgery partners on a very standard protocol for preop clipping so that they're prepared for that central line placement," Holdsworth said.

But what about the ultimate goal of reducing SSIs? That has been more difficult to ascertain. "We have had some decrease in SSI rates," Holdsworth said, but noted that it's impossible to tell whether that was a direct result of these specific programs or if it was affected by other IP efforts at the hospital. Of course, the COVID-19 pandemic proved to be another confounding variable in monitoring changes in SSI rates since 2018.

Still, these SSI prevention programs offered a successful demonstration of the IP team's ability to create new standardized protocols, launch them across service lines with buy-in from the front-line staff, and monitor compliance on a regular basis. They also serve as a useful template for IPs in other hospitals looking to address similar issues. 

Meredith Salisbury is a freelance writer for Prevention Strategist.

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WHO WATCHES THE WASHERS?

How Patient Observers Can Improve Hand Hygiene Compliance



BY MEREDITH SALISBURY

Since the mid-19th century, when Hungarian doctor Ignaz Semmelweis first pushed for hand hygiene prior to performing medical procedures, handwashing has been a boon to patients—and often a bane to healthcare practitioners. Among infection prevention (IP) experts, it’s no surprise that handwashing continues to be a source of friction in healthcare facilities.

Today, many healthcare systems ask team members to observe each other’s hand hygiene practices as a way to boost compliance with handwashing guidelines. But in outpatient settings where nurses or doctors often care for patients alone behind closed doors, another model is needed.

At an ambulatory care center in downtown New York City, IP and nursing professionals considered a different approach. If outpatient care meant that the only two people in a closed room were the healthcare worker and the patient, what if the patient could be the observer to help monitor hand hygiene practices? In a recent continuing education webinar, Marie Moss and Jemilat Siju from

Mount Sinai Union Square spoke about their three-year study of patient observers: why they started it, how they rolled it out, and what the results showed. They are currently working to publish results of that study, but *Prevention Strategist* readers can get a sneak peek here.

Patient Observers Needed

Mount Sinai Union Square is a large hospital and ambulatory care facility, with more than 30 multi-specialty practices collectively logging more than 500,000 patient visits each year. While Mount Sinai has a well-functioning hand hygiene model for inpatient units based on healthcare worker observers, handwashing compliance

in outpatient units was much more difficult to monitor.

Still, they tried. Before launching their patient observer study, IP stakeholders worked with the Nursing Shared Governance Committee to assign volunteers to monitor handwashing practices in the outpatient setting. For something that should be done before and after every patient interaction, the results were disappointing: compliance was only 32 percent. That number didn’t mean 68 percent of healthcare workers failed to wash their hands; it meant that in those cases, nobody could verify that handwashing had occurred.

The experience validated the IP team’s initial concern—that having healthcare workers serve as hand hygiene observers was ill-suited to the outpatient care environment. “There is no real opportunity for the healthcare worker-as-observer to be successfully implemented,” Moss said. But without monitoring, there was no guarantee that hand hygiene guidelines were being followed. “Unless hand hygiene becomes part of the patient care flow, the team will forget to do it,” she added.

“It became very clear really quickly that we needed to explore another alternative to be able to do this and do it successfully in the ambulatory care setting,” Siju said. They began planning a new program that would offer patients the opportunity to be the observer.

While patients would be the ones reporting compliance, Siju and her team aimed to enlist everyone’s participation in the program. Their goal: get handwashing compliance to at least 90 percent by the end of the study. That would take cooperation from all stakeholders.

Working closely with the IP team at Mount Sinai, study members launched an educational program about hand hygiene to remind all staff of the need to wash hands before and after patient interactions. They created a fun music video to reinforce the concepts, hung handwashing posters throughout the facility, and designed buttons that could be attached to ID badges as a visible reminder to patients to ask their nurses, doctors, and medical assistants if they had washed their hands.

Compliance would be assessed through the use of written surveys designed with simple yes/no boxes so patients could check off whether each team member had cleaned his or her hands before and after a visit (options were yes, no, and unsure; unsure responses were counted as a no). Based on advice from a statistician, the IP team chose to give surveys to every patient in each practice for one week of a month. The practice was allowed to select

the week and to choose how to distribute and collect the surveys, but they were given a script to help patients understand what they were being asked to do and why. Patient participation was entirely voluntary. “We built in some flexibility to give the practices the autonomy to make their own decisions and hopefully increase their buy-in and participation,” Siju said.

To provide extra incentive, the study group distributed a monthly compliance report to hospital and practice leaders, and the two best-scoring practices each month got a trophy and treats to encourage some healthy competition.

Another benefit the team hoped for was that being asked to observe hand hygiene would empower patients. “That was one of the intentions of this project, to make sure patients are actively involved in their own care,” Siju added.

Exceeding Expectations


The original study ran from January 2019 through December 2021, with more than 280,000 surveys completed from about 19 percent of patient visits. While the COVID-19 pandemic introduced a wild card into the effort with two months where no surveys could be issued, results still showed the success of the patient-as-observer approach. In 2019, many practices came close to the 90 percent target, with the occasional dip in compliance rates. By the end of 2020

and throughout 2021, though, compliance was routinely above the target.

But team fatigue was a real factor during the study, even for practices that performed well. “People have so many competing obligations,” Moss said. The IP team had to rally ambulatory care staff with recurring education, regular reminders about the program, and check-ins when compliance rates fell.

Helpful findings that emerged from the study included advising staff to tell patients when they were cleaning their hands to help reduce the number of “unsure” responses and also relying on paper surveys because QR codes and tablet-based surveys led to lower participation rates.

The study was so successful that the model has now been introduced at other Mount Sinai practices. Newer data from 2022 show that “we continued to exceed the threshold,” Siju said. “The goal now is to raise the bar even further.”

“We’re going to keep looking at results and refreshing the program,” Moss added. 

Meredith Salisbury is a freelance writer for Prevention Strategist.

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