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Dear Colleagues,

I am frequently amazed with occurrences that appear coincidental but are so timely and impactful that I have to wonder if I’m witnessing a wider Hand playing a card. This happened twice this morning as I write my final Prevention Strategist message to you as the APIC President.

The first occurrence was when I read an article to Mark Jackson, a joyful surprise that I was so pleased to see. As I read the article it brought to life both Mark’s amazing career and her influence on APIC, but it also brought back a clear vision to me of her personal impact on my career, which helped shape my remarks to you.

I met Mark in 2002, ostensibly towards the end of her career, when I first moved to southern California. Even though she was preparing for retirement, she (like so many of our other founders) still had so much passion for our profession and was still envisioning the future. She had so many research questions that had yet to be explored that would help solve problems and reduce the risk of infection misery for many. She would go on to plant these seeds of curiosity and discovery among those with whom she remained in contact. Although I was only a new acquaintance and very early in my career, this seasoned veteran and giant in our field (I had no clue!) took time to listen, advise, and encourage me—the first of several discussions. Encouraging and enabling other’s success was in Mark’s DNA, my friends—it is a gift she gave to me and many others, and one that we can in turn give to one another each day, even through the basics like listening, lending a hand when the going is tough, or providing honest and constructive feedback. Mark also provides an amazing example to us of curiosity, tenaciousness, service, and leadership—characteristics I believe are innate and essential to those in infection prevention and control. It was a delight to have Mark’s story be the catalyst for my writing.

The second occurrence came through a book I just finished reading this morning, A Prayer for Owen Meany by John Irving. It’s basically a story about thick and thin friendship, acting through love even when the emotion isn’t there, and heroic service to others (with a healthy dose of political cynicism on the side). The story brought to mind what I see so often experienced among APIC members—how many of you have developed deep friendships with those you’ve met professionally? How many of you have slogged through long hours, polished an email, and taken that extra step to assure something was completed as it should be—shown love—through your work, even when it might not be noticed? How many of you have encouraged another at work—made them laugh—being their hero just at the right time? I closed that book and so many faces and memories flooded my mind of how rich an infection prevention and control career has been, even though it is also often difficult and often unsung.

APIC’s members and professional staff have accomplished monumental good in the last 50 years and have laid a foundation for a future that I am confident we will be proud of and thankful for. It goes without saying that I am beyond grateful to you for the privilege of serving as president of APIC this year—I hold you all in the highest esteem.

Onward and upward,

Linda Dickey, RN, MPH, CIC, FAPIC
2022 APIC President
Illuvia® Sense is the first and only nonturbulent surgical air disinfection system with reporting technologies. It captures variables to help inform your infection prevention efforts, including humidity, temperature, particle matter count, barometric pressure, CO2, and VOCs.

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Scan the QR code to download a sample of one of our air quality reports.
“The more you know about the past, the better prepared you are for the future.”

—Theodore Roosevelt

During APIC’s 50th anniversary celebration, we have chronicled the evolution of both the association and the profession. Fifty years ago, infection prevention and control roles were typically found in acute care settings with primarily one health care discipline performing the role. Today, we see infection preventionists (IPs) entering the field from many health sciences disciplines and working in a variety of settings. Infection prevention programs have moved beyond the traditional walls of healthcare institutions to congregate settings such as colleges and communities, to name just a few.

The purpose of the CIC® certification and recertification process is to protect the public by providing a standardized measurement of current essential knowledge needed for infection prevention and control professionals. The challenge for CBIC is to ensure that our certification continues to test current knowledge that is relevant to the IP role in the settings where healthcare is delivered. To this end, the CBIC Board of Directors held its strategic planning meeting in November 2022. The meeting was a time to reflect on the certification process of the past and the present, and how we can continue to meet the needs of the IPs of the future. Stay tuned for the release of our 3-year strategic plan in early 2023.

There has been an incredible amount of work accomplished in 2022. Many thanks to all the APIC volunteers on which CBIC relies for item writing, item review, practice analysis, and overall test development. You continue to ensure we have a current, relevant certification process.

Thank you to the approximately 300 candidates who participated in the beta test for our new long-term care certification (LTC-CIP). Beta test results will be available in early January 2023 with the official launch of the new certification exam scheduled for February 2023.

The number of successful certificants outside the USA and Canada continues to grow with certified IPs in over 40 countries. This year we have had the opportunity to speak with colleagues in India, Qatar, and Jamaica, who have expressed their interest in promoting certification within their country. CBIC has also had opportunities to speak with many local APIC chapter members about the value of certification and the process to achieve certification. If your chapter would like to hear from CBIC, please reach out to us at info@cbic.org. We’re here to help you.

Wishing everyone a safe and happy 2023,

Sandra Callery, RN, MHS, CIC
2022 CBIC President
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We’ve taken the EPR and transformed it at every level

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To discover how trophon2 devices take ultrasound probe reprocessing to the next level, simply scan the QR code or visit www.nanosonics.us/products/trophon-2
Highlights of International Infection Prevention Week 2022: 
Looking Forward to the Next 50 Years of IP!

Here’s to the next 50 Years of Infection Prevention! The last 50 years of infection prevention have seen emerging diseases rise and fall with the amazing work of Infection Preventionists. IIPW is a time to celebrate those past and present victories, and prepare ourselves for the next 50 years of infectious disease work. We join with IPs from around the world to celebrate the profession of IPC and share critical life-saving prevention messages…and take a moment to just BREATHE.

Instagram Takeovers: For the third year in a row, APIC shared the stories of IPs on Instagram during IIPW week. This year, Katelyn Harms, MPH CIC, and Shanina C. Knighton, PhD, RN, CIC, took over our Instagram stories and showed us what goes on behind the scenes of their work. If you missed our Instagram stories takeovers, you can still watch them in the highlights section of our Instagram profile @apic_infection_prevention.

Laughter Therapy: It has been said that the best therapy is laughter! APIC created several opportunities for IPs to take a break and giggle. Partnering with @infection.control.memes on Instagram to create series of memes for IIPW, APIC was able to share the important message of infection prevention as well as share some fun and laughter with our IPs. See the memes on our Instagram account: https://www.instagram.com/apic_infection_prevention/

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INTERNATIONAL
INFECTION PREVENTION WEEK 2022
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Defining the IP role for our healthcare colleagues

APIC’s Communications Committee has developed a new infographic highlighting the many roles of our Infection Preventionists—perfect for sharing with your clinical, leadership, and operational teams! Download and share our new infographic here:


Erratum

In the fall issue of Prevention Strategist on pages 38-40, the incorrect title for the case study chapter was cited. The correct citation is:

Health care-associated infections studies project: An American journal of infection control and national healthcare safety network data quality collaboration case study—Chapter 2 Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance case study vignettes

Henrietta Smith, RN, MSN, CIC, Jennifer Watkins, RN, BSN, MPH, Melissa Otis, RN, BSN, Joan N. Hebden, RN, MS, CIC, Marc-Oliver Wright, MT(ASCP), MS, CIC.

Published: March 08, 2022 DOI: https://doi.org/10.1016/j.ajic.2022.02.028.
Late-breaking news from APIC Headquarters

APIC staff and volunteers have been hard at work laying the foundation for some exciting new initiatives that will benefit APIC members in 2023.

**Special AJIC reprint collection to celebrate APIC’s 50th anniversary**

Included with your December issue of the *American Journal of Infection Control* is a special reprint collection to commemorate the first 50 years of APIC and AJIC’s 50th issue. The 16 AJIC articles included in this 50th anniversary collection were selected to add to your scientific understanding and provide an appreciation for the fundamental underpinnings of current IPC practice. The articles appear in four main sections by decade. Each section is preceded by an editorial from members of APIC’s 50th Anniversary Task Force.

**IP apprenticeships and formal IP title recognition by the department of labor**

APIC has been working to secure an apprenticeship program at the U.S. Department of Labor (USDOL) as well as seek formal recognition of the IP as a federal title designation registered with the DOL’s Bureau of Labor Statistics’ Standard Occupation Classification System. We are happy to report that USDOL has accepted IPs as a national framework for apprenticeship, bringing us much closer to a federal apprenticeship program and formal title designation recognition. There will be more news on this front in 2023!

**Missouri project: collaborative infection prevention and control training**

APIC is partnering with the Missouri Department of Health and Senior Services with funding from CDC to facilitate the creation of an infection prevention and control (IPC) training program in K-12 schools throughout the State of Missouri. The goal of the training program is to build organization capacity, improve IPC practices in schools, and facilitate understanding and correct interpretation of state and local IPC recommendations.

**Michigan training**

APIC is partnering with the Michigan Department of Health and Human Services to deliver customized IPC training, provide memberships for 240 IPs within the state of Michigan, as well as APIC publications. Training will include the 4-day CIC Preparatory Intensive Workshop bundled with *Certification Study Guides*, Long-Term Care Infection Preventionist Essentials virtual training, and the EPI Intensive 4-day course.

**Texas DSHS project**

APIC is partnering with the Texas Department of State Health Services to provide a plethora of services and products. These include registration for 1400+ IPs in nursing homes across the State of Texas in the Long-Term Care (LTC) Infection Preventionist Essentials online course, registration for 1400+ IPs to take the CBIC LTC-CIP examination, renewal of the State Health Department’s institutional APIC Text subscription, and various APIC publications.

**Education and networking for LTC IPs**

2023 will bring increased education and networking opportunities for IPs working in long-term care (LTC). APIC will launch a certification prep course to assist IPs who plan to sit for CBIC’s new LTC certification ([https://www.cbic.org/CBIC/Long-term-care-certification.htm](https://www.cbic.org/CBIC/Long-term-care-certification.htm)) exam. In addition, IPs and infection prevention champions working LTC can join a new national forum at [https://www.surveymonkey.com/r/L6ZJYFX?utm_source=newsletter&utm_medium=email&utm_content=three-question%20survey&utm_campaign=EDU%20%7C%20Education%20%20Now%20%209/26](https://www.surveymonkey.com/r/L6ZJYFX?utm_source=newsletter&utm_medium=email&utm_content=three-question%20survey&utm_campaign=EDU%20%7C%20Education%20%20Now%20%209/26) to share resources and answer questions, made possible through APIC’s partnership with the American Health Care Association. The new LTC forum is open to all LTC professionals focusing on infection prevention regardless of certification status or membership in either APIC or AHCA.

**Research center news**

Through APIC’s newly created Center for IPC Research, Practice, and Innovation, APIC will be disseminating IPC staffing ratio guidance, conducting research on health equity, and developing a robust research agenda to advance IPC practice.
This fall the GAO released a report, “COVID-19 in Nursing Homes: CMS Needs to Continue to Strengthen Oversight of Infection Prevention and Control,” that analyzed the COVID response in these facilities. One of the key findings of the report was the need for stronger oversight and guidance related to infection prevention and control (IPC) by the Centers for Medicare and Medicaid Services (CMS). The report found that what qualified for specialized training and how much staff time was allocated for IPC were inconsistent across facilities. The report concluded:

“Prevention and control both prior to and during the COVID-19 pandemic, there is more CMS should do. First, CMS should do more to strengthen oversight of the role of the infection preventionist, a position whose creation was reported to be critical for helping nursing homes during the pandemic. Specifically, until CMS sets minimum training standards for infection preventionists, nursing homes will not know which training programs are adequate for preparing their infection preventionists, and the skills of infection preventionists may not be adequate to allow them to effectively perform their role. Similarly, until CMS collects and uses infection preventionist staffing data, the agency will lack information critical to understanding whether infection preventionists are dedicating enough time to IPC to meet the risks of infectious disease in nursing homes. Finally, CMS should clarify its IPC guidance to nursing homes and state survey agencies. Specifically, until CMS clarifies guidance on the scope and severity examples for IPC deficiencies specific to COVID-19 and other respiratory diseases, state survey agencies...
to four months (a time period which can be extended). With increasingly complex cases and less training for front-line staff, the need for full-time IPs to work with, educate, and provide feedback to staff is at an all-time high. However, according to the 2020 APIC MegaSurvey, the average IP working in these facilities spends about a third of their time working on IPC priorities. These IPs are often forced to “wear many different hats” and are not able to focus on IPC, but instead are diverted to assist with the urgencies of the day. Having a full-time IP is a cornerstone to establishing IPC programs that can be built for success.

Infection Preventionists Need to be Specialized

While IPs in nursing homes are committed to IPC and their residents, the resources needed for recruitment and education are often lacking. APIC members have expressed concerns that IPs are often assigned or “volunteered” to fill these positions in nursing homes without prior experience or interest in IPC. Additionally, less than 40% of IPs surveyed in 2018 reported specific training in IPC and an additional survey showed less than 10% of IPs in these facilities were certified in infection control.

This is especially concerning as a Maryland study showed long-term care facilities with a trained IP recognized and reported outbreaks to the local health department two days sooner than facilities without a trained IP, resulting in fewer cases of disease. Additionally, another study showed nursing homes with certified IPs had nearly five times greater odds of having comprehensive antibiotic stewardship programs. The need for certification is further exemplified by studies in acute care facilities where multiple studies have linked better patient outcomes with specialized knowledge.

Resources are not currently allocated to find personnel with background or interest in IPC and individuals placed in these positions are not receiving the training necessary to be successful in this role. Unfortunately, this lack of prioritization and specialization puts residents at risk of harm during the constant battle against healthcare-associated infections (HAIs) and the growing threat of antibiotic-resistant infections. Specialized education and certification of IPs must be a priority.

It is worth noting that the current Administration has made it a priority to make nursing homes safer for residents. In addition to other requirements, CMS now calls for nursing homes to have at a minimum a part-time, on-site infection preventionist.

However, there are concerns that this new requirement will still leave a lot of flexibility for facilities to interpret how IPC programs are set up. This could continue the current culture highlighted in the GAO report, where the infection preventionist role is a “second thought assignment.”

As an organization dedicated to being the voice of infection preventionists across the continuum of care, APIC has made nursing homes a priority area of advocacy. Working with regulators and legislators, APIC is pursuing several key policy points to make nursing homes safer for patients and healthcare personnel.

Infection Preventionists Need to be a Full-Time Dedicated Position

Infection Prevention can no longer be a “second thought assignment.” Nursing home residents are already at higher risk for certain types of infections and as patients continue to live longer, they are requiring more complex care. Additionally, the workforce providing much of the front-line care has very limited training in IPC, with the vast majority of states not requiring any kind of continuing education in IPC for nurses or doctors. This is further exacerbated by a recent CMS waiver that allows certified-nurse assistants to have no training when joining a facility for up

will continue to face uncertainty about how to inspect nursing homes for adherence to IPC requirements.”

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Getting Started as a New IPC Consultant

An interview with APIC Consultant DeAnn Richards, RN, BSN, CPHQ, CPPS, CIC, LTC-CIP

What is your professional background and interests in infection prevention and control (IPC)?

I ventured into healthcare immediately out of high school with an Associate Degree in Occupational Therapy, which is also where I landed my first job in long-term care. I became frustrated early on when processes I established were not followed. After writing treatment plans and teaching residents to bathe, dress, or feed themselves, nursing staff would disregard the plans and “just do it” because it was quicker for nurses to take these actions rather than allow residents to follow the plan of care. I decided to move past my aversion to blood and become a nurse so I could better understand their processes. Once out of school, I was able to apply knowledge and skills in orthopedics, pre- and post-heart catheterization, and detoxification. When down staffing occurred, I opted for Occupational Health and found I loved the predictability and complexity of communicable diseases. Thus, my Association for Professionals in Infection Control and Epidemiology (APIC) membership started in 1998.

When the Infection Preventionist (IP) I worked with departed, she encouraged me to apply for her position. After accepting the position, I was given a one-hour National Healthcare Safety Network (NHSN) training and then was on my own as the sole IP for an organization that had long-term care, acute care, and outpatient clinics, including dialysis and dental. I spent the first two years reading APIC’s IP Talk and the APIC Text to fill my IPC learning needs. After 12 years, I ventured into hospice and palliative care, learning new areas of infection prevention for home health. I was then recruited to become an Infection Prevention Project Specialist for a quality improvement organization (QIO) and subcontracted for our state hospital...
association. I really thrived teaching and helping other IPs to find methods and tools to reduce infections.

**What made you decide to go into IPC consulting?**

I had always thought my ideal job would be as a Joint Commission Surveyor, so I was constantly trying to learn as much about healthcare as possible. I discovered along my learning journey that I really enjoyed helping others, which is why I went into healthcare in the first place. I attended the APIC Consulting 101 Pre-Conference session and learned that many of the skills required of consultants mirrored the IPC teaching and education I provided in my current role at the QIO. Initially, I intended to start consulting once my daughter finished high school. COVID-19 moved the starting line, and I jumped in feet first by starting my own IPC consulting business.

**What are the key professional attributes you need as an IPC Consultant?**

Each IP has their own experiences, but we share the same desire to provide quality care safely. This is my mantra, which reminds me that my role is to listen, to understand, and to present options on how to best proceed in the practice of infection prevention and control. The goal is not to be right, but rather to explain the pros and cons while sharing regulations, interpretations, and best practices. I feel that being open and honest is an asset while sharing my own healthcare experiences and outcomes. A big part of what an infection preventionist does is teaching adults in a way that supports their current knowledge but expands their understanding in a non-threatening way.

**What would you say are the biggest challenges to starting as an IPC Consultant?**

One of the hurdles I needed to conquer was confidence in my IPC knowledge. This hurdle was quickly put on the shelf as consulting allows an IP to use all the IPC resources available in their toolbox from years of experience. What I found through consulting was that the same challenges, such as hand hygiene, are present regardless of the setting. The second challenge has taken longer to hone—report writing. It has taken me years to develop a report writing style that is easy to read and understand while being to the point and as short as possible.

**What advice do you give to IPs interested in consulting?**

There are several great books and websites on how to start your business. By investing some time, you may discover starting a business is within reach. An experienced IP has the skills to start a business. After doing the research, I discovered the process was not as overwhelming as I originally thought. Honestly, the hardest part was deciding on my business’ name.

**How do you recommend IPs start their consulting journey?**

APIC Consulting Services allows a new consultant to dip their toes in the water without all the additional tasks that need to be managed but cannot be billed to the client. I am constantly recommending to IP friends to consider working with APIC Consulting. This option allows the IP to focus on the IPC consulting, rather than all of the business components necessary to win contracts and execute work, including contract writing and invoice collection. When an IP runs into a business or client dilemma, they can use APIC Consulting as a sounding board.

**What would you recommend to your novice consultant self?**

Work and life balance is not just a concept but rather a daily effort. Set your workdays and hours now so you can still be present for your family rather than constantly attached to your computer or the road.

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

Kathryn Hitchcock, MBA, is Deputy Director of APIC Consulting Services, Inc.

Each IP has their own experiences, but we share the same desire to provide quality care safely. This is my mantra, which reminds me that my role is to listen, to understand, and to present options on how to best proceed in the practice of infection prevention and control.
Conversation with an IP: DJ Shannon, MPH, CIC

DJ Shannon, MPH, CIC has been involved in Infection Prevention and infectious diseases for 7 years, with experience spanning research, state public health, academics, and acute care hospitals. With a background in Human Biology and Epidemiology, his focus is on antimicrobial resistance, vascular access, and infection prevention. He is a current Board Director and is the incoming President-Elect for APIC Indiana. DJ is experienced as a regional, statewide, and national speaker regarding antimicrobial resistance and infection prevention.

What inspired you to become an infection preventionist?

I have been intrigued with infectious diseases since my high school anatomy and physiology class. Throughout college, my interests in public health and preventing illness, rather than treating/managing disease states, grew. As I learned more about epidemiology and antibiotic resistance, I realized my specific passion is infection prevention and patient safety.

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

Initially, the learning curve from public health to the clinical setting was a challenge. Currently, there is no pathway for a non-clinically trained individual (i.e., MPH) to learn those aspects of Infection Prevention so I had to find my own approach. I spent much of my time talking with bedside staff and watching videos online to gain as much knowledge as I could. I now attend hands-on trainings for procedures like central line insertions so I can gain a better understanding of the practices my colleagues perform so I can be better aligned to help impact care.

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

I have found success by building relationships with colleagues from bedside staff to senior leadership. I work closely with senior leaders to influence change while I rely on my relationships with bedside staff to understand specific challenges in the hospital. My relationships with staff have allowed me to act as a resource and guide, rather than an enforcer.

How has your background helped you in the IPC profession?

My MPH training provided the knowledge to apply epidemiologic concepts in relation to infectious diseases and disease processes. Having a public health background has enabled me to approach clinical challenges from a different perspective and think outside of the box.

What were your challenges when you first entered the field?

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

Infection Prevention can be an overwhelming field from an outside perspective. I think it is crucial to make connections with other IPs and build relationships within your facility. Reading the APIC text and attending conferences are great ways to obtain new knowledge and network. Most importantly: don’t just sit behind your computer, be present on your units.

What motivates you in your daily work?

I truly believe in our mission as Infection Preventionists. As a patient safety advocate, I am working to move my own surveillance scope past federal surveillance mandates and begin surveilling all device-associated infections (e.g., PIV associated BSIs). Every single infection matters, regardless of device type, or monetary penalty/reimbursement. I am motivated by the ability for us to impact patient safety outcomes.

What was your specific passion that led you to infection prevention and patient safety?

I have been intrigued with infectious diseases since my high school anatomy and physiology class. Throughout college, my interests in public health and preventing illness, rather than treating/managing disease states, grew. As I learned more about epidemiology and antibiotic resistance, I realized my specific passion is infection prevention and patient safety.

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Infection Prevention can be an overwhelming field from an outside perspective. I think it is crucial to make connections with other IPs and build relationships within your facility. Reading the APIC text and attending conferences are great ways to obtain new knowledge and network. Most importantly: don’t just sit behind your computer, be present on your units.

What motivates you in your daily work?

I truly believe in our mission as Infection Preventionists. As a patient safety advocate, I am working to move my own surveillance scope past federal surveillance mandates and begin surveilling all device-associated infections (e.g., PIV associated BSIs). Every single infection matters, regardless of device type, or monetary penalty/reimbursement. I am motivated by the ability for us to impact patient safety outcomes.
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Focus on long-term care and behavioral health outbreaks
Identify the pathogen!

BY STEVEN J. SCHWEON AND AMBER R. GENSHEIMER

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.

Web R, Currier M, Weir J, et al. describe 3 long-term care setting outbreaks being reported by state or local health departments to the Centers for Disease Control and Prevention.

Nursing Home “A” in Mississippi reported three patients during December 2003 with an acute viral infection that is routinely reportable to public health authorities. The first patient was infected in September 2003, before all three patients were reported, three months later. During this three-month period, two patients died of acute infection. Neither the nursing home nor the lab, that processed the blood specimens, initially reported the required, positive findings to the state health department. Additionally, the nursing home did not investigate possible sources and causes of the infection.

After being notified, The State Health Department performed serology testing from 160 residents, including the two decedents:

- 15 residents had an acute infection
- 1 resident was chronically infected
- 15 residents were immune
- 129 residents were susceptible

Among the 38 residents who routinely received fingersticks for blood glucose monitoring, 14 residents had an active infection with this pathogen. One resident who did not receive fingersticks tested positive.

Based upon your clinical acumen and experience, you suspect the pathogen source is:
1. Human Immunodeficiency Virus (HIV)
2. Hepatitis B Virus
3. Hepatitis E Virus
4. None of the above

Serology testing revealed the residents were infected with acute Hepatitis B Virus (HBV) infection. The investigators reviewed infection control practices and performed site inspections. One glucometer and one spring-loaded, pen-like fingerstick device were used for each fingerstick procedure. Staff reporting changing the end cap and lancet for each fingerstick procedure. The spring-loaded barrel and glucometer were not routinely cleaned between residents. Insulin and other multidose medication vials were not labeled with the resident names or the dates the vials were first opened. An anonymous survey was conducted, with staff members reporting co-workers reusing a needle or lancet, or failing to change gloves between residents.

At the assisted living facility, where 22 residents received fingersticks for blood glucose monitoring, during a seven-month period, eight had active HBV infection. Eight of the nine patients who required daily fingerstick testing, performed by the nursing staff, had an active HBV infection. Investigators determined that while all residents who required blood glucose monitoring had their own fingerstick devices, a common device was occasionally used. One glucometer was typically used for all the residents. Glove use was discouraged to minimize the clinical environment ambience.

At the second nursing home, during a two-month period, 192 residents were tested with 11 residents having an acute HBV infection. Eight residents, of the 45 residents...
who required daily fingerstick glucose monitoring, had an active HBV infection. Investigators found only single-use lancets were used, and insulin vials were not shared among the residents. A single glucometer was used for all the residents receiving a fingerstick and there was no routine cleaning/disinfection after each use. Staff members also reported co-workers not changing gloves between residents, while performing the procedure.

The HBV is a vaccine-preventable, enveloped DNA virus that belongs to the Hepadnaviridae family. Other Hepatitis viruses include Hepatitis A Virus, Hepatitis C virus, Hepatitis D virus, and Hepatitis E virus.

Hepatitis is derived from the Greek word ἠφάτος, meaning “liver”, and -itis meaning “inflammation.” Hepatitis is a virus that causes inflammation of the liver.2

The World Health Organization (WHO) estimated that in 2019, 296 million people were living with chronic hepatitis worldwide with 1.5 million new infections each year.3

It's estimated that 862,000 people are living with chronic hepatitis B in the United States.4

In 2018, the Centers for Disease Control and Prevention (CDC) estimated that the number of acute hepatitis B cases was closer to 21,600 and not the 3,322 cases reported to the CDC.4

Hepatitis B risk factors include:4
- Infants born to mothers with hepatitis
- People who inject drugs or share needles and syringes
- Sex partners of people who have hepatitis B
- Sharing items such as medical equipment e.g., glucose monitor, with an individual who has Hepatitis B
- Direct contact the blood or open sores from an infected individual
- Men who have sex with men
- Healthcare and public safety workers exposed to blood on the job
- Individuals on dialysis.

Hepatitis B symptoms include fever, fatigue, loss of appetite, abdominal pain, nausea, vomiting, dark urine, clay-colored bowel movements, joint pain, and jaundice.4 The incubation period of hepatitis B ranges from 8 weeks to 5 months after exposure.4 The virus may be detected within 1-9 weeks after exposure.3

Hepatitis B (HBV) transmission occurs through exposure to infective blood, semen, and other body fluids.6 Other methods of transmission include infected mothers to infants at the time of birth, transfusions of HBV-contaminated blood and blood products, medical procedures, and contaminated needles through injection or drug.6 Healthcare workers are also at risk of HBV transmission if they sustain accidental needle stick injuries while caring for infected-HBV patients.6

Hepatitis B serology7 testing involves the identification and measurement of several HBV antigens and markers to determine:
- Acute or chronic
- HBV immunity due to prior infection or vaccination
- Susceptibility to HBV infection.

There’s no specific treatment for acute hepatitis B infections. Care4 should be focused on maintaining comfort, nutritional balance, and electrolyte balance secondary to nausea and vomiting. It’s important that individuals with acute hepatitis B infections avoid medications such as acetaminophen and paracetamol.

Chronic hepatitis B can be treated4 with antiviral medications such as tenofovir or entecavir. These medications help to suppress the hepatitis B virus which can slow the progression of cirrhosis, reduce the incidence of liver cancer, and improve long-term survival.

Timely postexposure prophylaxis8 can prevent acute hepatitis B infection and chronic liver disease. The mainstay of postexposure prophylaxis is hepatitis B vaccine. In certain circumstances, hepatitis B immune globulin is recommended in addition to the vaccine for added protection.

All infants, unvaccinated children and selected adults are recommended to receive the hepatitis B vaccination.4 Adults aged 60 years and older without Hepatitis B risk factors may also receive the vaccine.4

The hepatitis vaccination is a series of 2, 3, or 4 doses depending on the vaccine used or condition.10

Hepatitis B Virus infection that is acute, chronic, or perinatal is a reportable disease, through your health department, to the Centers for Disease Control and Prevention’s National Notifiable Diseases Surveillance System.11
Standard Precautions are recommended when caring for patients with suspected or confirmed HBV infection.1 HBV is stable in the environment and remains viable for > 7 days on environmental surfaces, at room temperature.2

As part of Standard Precautions, environmental services staff should wear the appropriate Personal Protective Equipment (PPE) when cleaning/disinfecting a blood or other potentially infectious material (OPIM) spill.

In summary, the authors concluded the following breakdowns with acceptable practice:

- The lack of adherence to Standard Precautions when encountering blood and other body fluids.
- Hand hygiene was not consistently performed between residents.
- Failure to implement long-standing recommendations against sharing fingerstick devices, among multiple residents.
- Reusing a spring-loaded barrel of a fingerstick device for multiple residents.
- Laboratory and nursing home failure to timely report a communicable disease to the health department.
- Virus transmission likely occurred from contaminated glucometers, insulin vials, injection equipment, gloves, and environmental surfaces.
- The investigators note that since 1990, fingerstick devices for accessing capillary blood should be restricted to individual use only. 

References


9. Centers for Disease Control and Prevention. Hepatitis B, acute and chronic infection being reportable. There may be clinical situations where the lab and nursing home both must complete the reporting, to prevent notification lapses from occurring. It might be helpful to develop a reportable diseases policy and procedure.

10. The CDC also has detailed information addressing “Infection Prevention during Blood Glucose Monitoring and Insulin Administration” at: https://www.cdc.gov/infectioncontrol/blood-glucose-monitoring.html.

11. Consider performing a staff audit, immediately after fingerstick monitoring, to ensure a glucometer is properly cleaned and disinfected after use, using the manufacturer’s recommended disinfectant.

12. The Environmental Protection Agency (EPA)’s “List D” contains the registered disinfectants specifically approved for use again HIV and HBV (https://www.epa.gov/pesticide-registration/list-d-epas-registered-antimicrobial-products-effective-against-human-hiv-1).

13. The Occupational Safety and Hazard Administration (OSHA), through the “OSHA Human-HIV-1 registration/list-d-epas-registered-antimicrobial-products-effective-against-human-hiv-1).”

TAKE-HOME MESSAGES

1. Adhere to your federal, state, and local regulations, in addition to facility policy, when an outbreak is suspected; consider developing an outbreak policy, which includes key contacts, including the daily and after-hours, phone numbers, of the appropriate health department. It might be helpful to keep a copy of your facility’s outbreak policy on your personal computer/phone.

2. The 2022 “Child and Adolescent Immunization Schedule” (https://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html) and the “Adult Immunization Schedule” (https://www.cdc.gov/vaccines/schedules/hcp/adult.html) detail the HBV vaccine schedule. The most current “Vaccine Information Statement (VIS)” is required by federal law to be given to the patient, before the vaccine is administered. Additional information is available at: https://www.immunize.org/vis/.


5. The CDC also has detailed information addressing “Infection Prevention during Blood Glucose Monitoring and Insulin Administration” at: https://www.cdc.gov/infectioncontrol/blood-glucose-monitoring.html.

5. Consider performing a staff audit, immediately after fingerstick monitoring, to ensure a glucometer is properly cleaned and disinfected after use, using the manufacturer’s recommended disinfectant.

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

Amber R. Gensheimer MSN, RN, NPD-BC, is Director of Infection Control and Quality Management for a large long-term care organization with a specialized interest in expanding infection control and prevention knowledge and process implementation in the Long-term/Postr-acute care industry.
It’s time to take proven infection prevention further

Figures released from the CDC make stark reading for Infection Preventionists. An estimated 722,000 healthcare-associated infections occur annually, resulting in 75,000 deaths and billions in additional costs. More than half of these occurred outside of the intensive care unit.

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What is the coolest thing about your work?
What's next?
What the future may hold—literally the sky is the limit.

What is a problem that you solved during your most recent project?
One major hurdle was determining whether during the transport of COVID-19 diagnostic samples, the flight itself would interfere with the integrity of the payload contents and lead to inaccurate results. The team successfully demonstrated that the drone flight samples showed no decay in the signal for SARS-CoV-2 on the testing capabilities of the post-flight test samples versus concomitant control samples.

Are your methods generally accepted?
Are they unusual or new?
The methods we describe are relatively novel and unique and although open many exciting opportunities we would have to say they are not generally accepted with respect to sending COVID-19 NP test kits to remote areas and then sending them back to the laboratory for PCR based laboratory testing.

How do your results compare with others in the area? How much consistency is there generally in this area?
We are uncertain how our results for drone delivery and return of COVID-19 test kits compare to other such testing given it is a new development. We found one paper that explored the feasibility of using drones in the face of the pandemic in a general sense but not the nuances of laboratory testing.

What are the circumstances that have led up to your current work?
I had the good fortune to team up with Wade Hawkins who is an integral figure within the Centre for Innovation and Research in Unmanned Systems (CIRUS) at the Southern Alberta Institute of Technology and they have the largest drone laboratory in Western Canada. We were able to map out some ideas and then with the pandemic arriving we were able to place our ideas into action in co-operation with the Provincial Laboratory and the Stoney First Nation.

Why is your role important?
We are able to integrate complementary skills—one in healthcare innovations and the other in drone technology.

What challenge were you setting out to address when you started this type of work?
Delivery of healthcare in remote and rural Indigenous communities is challenging especially for delivering timely health care services and supplies. This project allowed us to test emerging technologies in this setting and has huge future potential.

Why is your area of focus important (or relevant) for the infection preventionist and other healthcare workers?
The use of emerging technologies including drones and telerobotics will open up many facets of unique service delivery for infection preventionists in the future.

What is your favorite aspect of your work?
Thinking outside the box!
The Tru-D UVC disinfection system combined with highly-compliant manual disinfection products, such as PDI’s surface disinfectant wipes, has been shown to reduce microorganisms on hard, non-porous surfaces in healthcare environments\(^1\).

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PIC searched throughout its talented membership for the perfect combo of expertise and energy and discovered the superstar duo of Lerenza Howard and Kelly Holmes! Starting with the January 2023 episode, the 5 Second Rule podcast will be hosted by these two infection preventionists. Read on to learn more about your new hosts and find out what’s in store for the 5 Second Rule in 2023!

Why did you want to be co-host for the 5 Second Rule Podcast? What do you like best about the podcast?

Lerenza: Being a podcaster has been a desire of mine, but I had not put forth the energy toward starting my own. I am passionate about communicating infection prevention and control practices and providing education to stakeholders. When I saw the email noting the call for new co-hosts of APIC’s 5 Second Rule Podcast I jumped at the opportunity to essentially be one of the voices of my professional organization. I have a growing passion for public speaking therefore this was an opportunity for me to sharpen my public speaking and interviewing skills, but to also engage in discussions that are pertinent to myself and fellow IPs. I believe that the 5 Second Rule Podcast is a great way for APIC to disseminate quality content to IPs, and the new function where individuals can leave a voice message for the hosts is a wonderful approach in increasing engagement. As a listener of the podcast, I have enjoyed the interesting topics that are discussed such as Episode 38 where the authors of the Novice Roadmap for IPs provided their amazing insights on how this tool was formulated. The podcast has been a great way to educate IPs by inviting subject matter experts as guests to discuss various topics in infection prevention and I seek to continue this legacy.

Kelly: APIC has been an invaluable resource since my first day as an IP. I really wanted to be able to give back to the community and contribute to the continued growth of the program as it evolves for current and new infection preventionists.

How would you classify your interviewing/conversation style?

Lerenza: My conversation style is that of a dialogue. I enjoy having a two-way conversation seeking to ensure that we’re both heard. I love to interact in engaging conversations, but I believe that it is pertinent that I am a good listener and allow interviewees to talk and fully share their thoughts.

Kelly: Approachable, compassionate, and informative. My goal is to make the guest feel comfortable and engaged to share their experience and expertise. And having some laughs along the way is always a plus!

What do you hope listeners will take away from future episodes of the podcast?

Lerenza: I hope our podcast episodes will help listeners develop a deeper knowledge of the opportunities for IPs and the resources that are available to them such that they possess the tools to be impactful within their organization. I also hope to be an escape for IP listeners by engaging in discussions about mental wellness. In this post-COVID world, studies and discussions have focused on burnout among IPs in addition to the need to recruit IPs into the profession. My hope is that in some way the podcast is a conduit to addressing some of these issues and that it is a source of inspiration to remain within the profession. Although the podcast is now geared toward IPs, I would hope that the show will also attract individuals to this profession. I also hope that listeners gain knowledge about the opportunities to advance their proficiency and skills as IPs.

Kelly: After dealing with the difficult days of COVID-19, the podcast offers a tremendous opportunity to motivate current
If you could have any person, living or dead, as a guest on the podcast, who would it be and what would the discussion be about?

Lerenza: My daughters. My daughters were tremendously impacted by the COVID-19 pandemic as were many other children. I think that it would be interesting to learn how the pandemic has impacted them and what they’ve learned throughout the course of the pandemic. I’d like to know which infection control practices they now use both in school and outside of school. Protecting our loved ones is why we’ve stayed the course and continued to enforce infection control practices. We as IPs are focused on educating stakeholders throughout our organizations, but do we also educate our loved ones on infection control?

Kelly: This one is tough! So many, I’ll pick one of each:

Living: Brené Brown is one of my favorite authors, she has a great perspective on empowering individuals to embrace their imperfections and rise strong professionally. The topic of that podcast would be tailored toward mental health, facing burnout, and successful strategies to grow through difficult experiences.

Dead: John Snow. As the “father of modern epidemiology,” his story intrigued and inspired me during my Master’s work. The discussion of that podcast would be picking his brain on pattern recognition and pattern analysis that would lead to the removal of the handle from the water pump stopping a cholera outbreak in its tracks. We would also discuss how his discovery led to the changes in the water and waste systems of London that were eventually adopted by other cities.

What do you want listeners to know about you?

Lerenza: I am a mother of two amazing daughters who keep me very busy. I am from Chicago, and I absolutely love my city. There’s so much to do, and I may be biased, but we have the best skyline! I am a self-professed nerd who loves learning how things work and how things are built. I am a passionate IP who is seeking to increase awareness of our profession. I am a student of life who believes there is always something to learn from situations and people. I enjoy assisting others in excelling at their professional career or breaking into their career. I am passionate about mentoring young girls about career development and roles within STEM and healthcare. One thing that brings my heart joy is giving back to my community here in Chicago. I also want listeners to know that I am a proud member of Zeta Phi Beta Sorority.

Kelly: I’m passionate about educating new IPs and supporting them through certification. I started my career as an IP in 2004 in Houston, Texas. I’ve worked in multiple practice settings including acute care, long-term acute care, and acute inpatient rehabilitation facilities. I’ve had the wonderful opportunity to consult with multiple hospital systems around the country to provide program assessments. I currently mentor a wonderful group of IPs in New Orleans and provide remote surveillance for multiple facilities. I’ve worked with colleagues to develop multiple training sessions and case studies for inter-rater reliability applying the NHSN surveillance definitions. I love that I still learn something new every day! I currently live in St. Louis. I have three sons, and we play a lot of hockey!

Is there anything else you’d like to share about yourself, your goals for the podcast, or the future of the IP profession?

Lerenza: It is such an honor to be one of the new co-hosts of the 5 Second Rule. I hope the podcast will be a source of inspiration for IPs and that we will engage in discussions that advance the field. I am excited to see how APIC’s IP Academic Pathway (IPAC) will advance the profession with certification and degree curriculums. I am looking forward to possibly sharing the educational opportunities created by IPAC with our listeners to provide them with opportunities to advance their knowledge-base while also assisting them with matriculating through APIC’s competency model. I hope the podcast helps to motivate IPs to be their best selves even in the face of adversity and that we encourage IPs to seek challenges and to ‘do away with’ fear. I would want us to have transparent conversations regarding the current and future state of our profession to hopefully advance the field of IP. My goal for the podcast is for it to be a positive influence for future and current IPs and that the information we provide sparks a desire for IPs to also pursue leadership roles within infection prevention.

Kelly: I would love APIC’s 5 Second Rule podcast to become a “must-listen” for infection preventionists with continued content they look forward to and enjoy. I believe the future of infection prevention will include more implementation science strategies and processes for sustained improvement.
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Creating an Academic Pathway for the IP Profession

BY MICHELE PARISI

Over the 50 years since the Association for Professionals in Infection Control and Epidemiology (APIC) was founded, the profession has established itself as fundamental to the practice of safe and effective healthcare in the United States. If the global community wasn’t aware of the critical importance of infection preventionists before 2020, the COVID-19 pandemic certainly accelerated this understanding.

“COVID shined a very, very, bright light on the importance of infection prevention and control, not just the role of an infection preventionist, but actually, on the profession,” said Letty Klutz, Vice President, Education and Events, of APIC.

In addition to raising awareness about the critical role of infection preventionists, the global pandemic increased the urgency around bringing more individuals into the profession. “There is this perfect storm, created by demand for more infection prevention professionals simultaneous with the loss of professionals in the field due to retirement and burn out,” Klutz said.

A national audit completed by APIC in 2021 demonstrated that among U.S. colleges and universities, there is no clear pathway for students to enter infection prevention and control (IPC) careers. And while the pioneering infection control professionals who founded APIC, and the many APIC members who have followed them, have created many tools to support professionals already practicing in the field, the organization has not yet outlined a pathway into the field. But this is about to change.

Last year, APIC announced the formation of an Infection Prevention Academic Pathway (IPAP). Through this first-of-its-kind national initiative, APIC is creating an intentional track for undergraduate- and graduate-level infection prevention (IP) and degree programs. The APIC IPAP committee has already identified four core pathway components that detail competencies needed to work successfully in IPC as outlined by the Certification Board of Infection Control and Epidemiology (CBIC).

“For decades, IP roles were largely filled by nurses who were ‘voluntold’ or otherwise fell into vacant positions,” Klutz said. “To create a broader funnel of new professionals, we need to make it easy for people to find out what IPC is all about. When the four components of IPAP are complete, students who are interested in IP will actually have validated resources to help encourage and prepare them.”

A Successful Model

Long-time APIC member Donna Haiduven, PhD, RN, CIC, CPH, FAPIC, can confirm first-hand the logic and value of the IPAP model. Dr. Haiduven is a professor and the director of Graduate Infection Control Programs in the College of Public Health (COPH) at the University of South Florida (USF) in Tampa, FL.

In what Klutz says is “perhaps coincidence and perhaps a bit of divine intervention,” Haiduven and colleagues have independently created a program whose components align—uncannily—with the four core components (certificate program, two degrees, and an internship) of IPAP. In total, these programs have generated hundreds of infection control (IC) certificate and degree graduates.

Haiduven received her Bachelor of Science in nursing from USF, Master of Science in Nursing Administration from the University of Miami, and PhD in Occupational Health Nursing from the University of California, San Francisco. She became an infection control nurse in 1986 and in the intervening years has conducted research on safer needle devices to prevent sharps injuries, written and lectured extensively on a range of IPC topics, and established herself as a prolific educator and mentor to aspiring IP professionals.

When Haiduven joined USF as an assistant professor in 2001, the university’s COPH already offered an online graduate certificate in infection control. Haiduven initially taught a single component of one certification class. Her role in the program expanded until—in 2005—she became its director and taught three of the four courses in the certificate.

By March 2013, the USF infection control graduate certificate had the highest enrollment in the university’s COPH and the third highest enrollment in the university. A needs assessment survey conducted among undergraduate students in the USF COPH indicated that infection control was a high priority for them as well.

“Enrollment statistics, the interest and demand highlighted by our undergraduate survey, and the success of the graduate certificate program all pointed to the need for more specific infection control degree and certificate programs,” Haiduven said.

In just over a year, Haiduven proposed and then created both a Master’s in Public Health (MPH) with an infection control concentration and an undergraduate minor in infection control. These programs, which launched in 2013 and 2014 respectively, drew from multiple, validated IPC models and guidelines (see sidebar) to supplement the existing graduate certificate program and provide a continuum of IP education.

- **Undergraduate minor in infection control**: Housed in USF’s Bachelor of Science in Public Health or Health Sciences, the curriculum for this degree is modeled after the national certification for the Associate—Infection Prevention and Control (a-IPC) exam administered by the CBIC.
- **Graduate certificate in infection control**: This program enhances the knowledge base of post-baccalaureate nurses,
medical technologists, microbiologists, and other health professionals employed as IC practitioners. Courses provide a comprehensive knowledge base to prepare students for the CBIC examinations.

- **MPH with a concentration in infection control**: This concentration provides specialized and individualized training in infection control and prevention, enabling current and future public health practitioners to expand their knowledge of IC practices and procedures.

In addition to successfully addressing growing interest and demand, the USF programs have enabled hundreds of individuals to enter the IP field while also establishing a model academic pathway for the profession. To date, 266 undergraduate students have completed the IC minor (with five moving into the MPH program), 350 students have completed the graduate certificate, and 90 students have graduated from the MPH in IC concentration, with an additional 70 currently enrolled. During the COVID-19 pandemic, Haiduven offered an accelerated certification program to accommodate a spike in enrollment and help fill the urgent need for trained professionals.

Haiduven points to former students as the most important factor in the USF program’s success. “We have so many graduates who have gone on to successful positions in the healthcare and IP field,” she said. “They talk about our program and drive new students in.” This advocacy is not happenstance, but rather an outcome of Haiduven’s teaching philosophy. “There is a broad continuum within infection prevention, from new students to those with 20 or more years of experience,” she said. “I stay in contact with students after they graduate and encourage them to give back, whether it’s as simple as sharing their experiences in our programs or becoming preceptors to the next generation of infection preventionists.”

Other factors Haiduven believes have contributed to the program’s success are:

- **Breadth**: USF’s IC certificate and degree programs all reside in the university’s COPH vs. its College of Nursing. This opens up enrollment to a broader group of students, including physicians, pharmacists, laboratorians, pre-med and microbiology students, etc.

- **Validation**: The three graduate-certificate classes taught by Haiduven have all received Quality Matters qualification and certification, providing objective validation for students exploring potential programs.

- **Visibility**: Haiduven and other APIC members who assisted with last year’s APIC audit learned that when students applied to or enrolled in MPH programs catalogued through the Association of Schools and Programs of Public Health (ASPPH), the infection control tracks and classes were hidden under other categories, such as communicable diseases or global health.

“We were able to get a separate category added for IPC,” Haiduven said. “I think this will have a big impact on our program enrollment in the coming academic year.”

- **Accessibility**: All courses for the MPH with IC concentration are offered online, with the exception of a required internship, which students can complete where they live.

The MPH internships are both one of the degree’s highlights and one of its key limiting factors. In 2017, Haiduven traveled through multiple U.S. states, meeting with USF program graduates and institutions to establish internships.

“This works great until we have students in states or countries where we don’t have internships set up,” she said. “We’re constantly striving to find internship placements, and this is where we really need help from practicing infection preventionists.”

### A Call to Help Build the Future

Internships are a core component of APIC’s IPAP and, in Haiduven’s experience, not only an essential component of IP education, but also mutually beneficial for students and practicing IP professionals.

“I hear it and see it over and over again. The infection preventionist is an invaluable mentor for the student learning about the IP profession,” she said. “But students offer something valuable as well. They can assist with much-needed projects that infection preventionists can’t get to because of limited time.”

The IPAP task force has already completed the Accelerated Internship Guide for Infection Prevention & Control (apic.org/academic-pathways-internship/), and both Kluttz and Haiduven hope that experienced IP professionals will rise to the occasion when the time comes. “Once the four components of the IPAP are completed, I encourage current infection preventionists to reach out to academic programs in their area and offer to serve as preceptors for internships,” Haiduven said. “I would love to see a national APIC network of infection preventionists that academic programs across the country could reach into to find internships for their students.”

Haiduven and the profession won’t have to wait much longer. The IPAP task force recently completed the second component of the model—a suggested curriculum for a certificate in IPC. In January 2023 they’ll begin work on a suggested curriculum for a Master’s degree in IPC and, finally, develop a suggested curriculum for the undergraduate degree.

“Once this work is done, we’ll conduct a validation study to confirm the programs will resonate with employers and practicing IP professionals, and ensure we’re adequately preparing people for careers in IPC,” Kluttz said. “We’ll be actively seeking university partners to help support this initiative.”

Kluttz is hopeful that validation will be completed in 2023, after which the task force will accomplish its final step: creation of a process enabling universities to submit their IPC curriculum for evaluation against IPAP certificate and degree standards. “We’ll look holistically at universities’ programs to assess whether they are covering the content we recommend—the content that will set individuals up for success when they graduate,” said Kluttz. “The USF program provides an outstanding model for the types of programs we believe IPAP will inspire.”

Learn more about IPAP at apic.org/ JPACademicPathway or contact ipap@apic.org.

Michele Parisi is a freelance writer for Prevention Strategist.
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December is upon us, and another year has almost come and gone. 2022 seems to have gone by in a blink of an eye, perhaps in part because we spent so much of it speculating the future of our ‘new normal’ and what changes may be just around the corner. The APIC Text is no exception, and our team took great care pondering Text readers’ evolving needs in the infection preventionist (IP) community. How do we best serve IPs? What can we do better? Do we need a chapter on monkeypox? How much coffee is too much coffee?

Our questions regularly had us looking to the future and ultimately resulted in an expansion of efforts and increase in resources to provide IPs with the most up-to-date content as quickly as possible in a rapidly changing world. The Text tripled its revised chapter publications in 2022 compared to last year and will build on this momentum to publish even more chapters in 2023. The editorial team added 16 chapters to the existing revision queue and this August added an Editorial Specialist to its ranks in anticipation for the work ahead. Our 2023 editorial team will also be bigger than ever with an additional Clinical Editor, Patricia Lawrence, MS, BSN, BS, RN, CIC, and four new Associate Section Editors. Our new colleagues are certified, practicing IPs from around the country and beyond with experience across diverse fields with a demonstrated passion for infection control, patient care, and overall excellence.

In reaching out the community, the APIC Text developed a standing author pool of IPs ready to accept chapter invitations which continues to grow with volunteers eager to contribute to their community. Subscribers at APIC’s Annual Conference were kind enough to give us valuable...
feedback regarding their usage of the Text and how we can improve (special thanks to all who completed the APIC Text User Survey and to those that stopped by the APIC Conference Store to chat! Connecting with subscribers is a gift and a pleasure).

One can’t speak about the APIC Text without mentioning the incredible individuals fueling its progress. Tremendous gratitude goes to our tireless authors who worked for months behind the scenes to update and improve APIC Text Chapters (see sidebar) despite being busier than ever. We also recognize the many authors that are continuing their work into 2023 on content yet to come.

Likewise, the Text’s devoted team of Clinical Editors, Associate Section Editor, and Lead, Kelley Boston, worked tirelessly, and we can’t thank them enough. Every word, statistic, and comma in chapters undergoes rigorous review by the editorial team. We have them to thank for ongoing innovations to the APIC Text in addition to their management of countless chapters. The Text is an essential resource to many in the IPC community and it is the community that maintains it, for which we are eternally grateful.

The above efforts are in the name of APIC Text readers, i.e., dedicated members of the IPC community that are working hard to bolster community health and combat evolving healthcare needs. For those of you unfamiliar with the APIC Text, I encourage you to check out pages at text.apic.org and consider purchasing a subscription. The 120+ reference chapters address a fantastic tool to IPs for day-to-day use in addition to a valued study tool, and received, on average, 62,000 monthly pageviews in 2022 alone – in no small part due to its dedicated contributors.

Work on the APIC Text, not unlike the work of IPs, is far from over, however we look forward to releasing more updated chapters than ever and increasing the APIC Text’s reach in 2023. It is an honor to serve IPs, particularly in the extraordinary climate we find ourselves in. Thank you, readers, contributors, and IPs, at every level.

Rachel Walther is Senior Content Manager, Practice Resources, at APIC.

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Facilities Should Implement NEW ENDOSCOPE PROCESSING GUIDELINES

BY MELANIE PADGETT POWERS

Health care institutions should begin evaluating and updating their processing procedures for endoscopes, according to an expert who spoke at the APIC 2022 Annual Conference in June.

In March, the American National Standards Institute and Association for Advancement of Medical Instrumentation published a new updated version of “ST91–Flexible and Semi-Rigid Endoscope Processing in Health Care Facilities.”

“The new standard completely replaces the now outdated 2015 ST91 version,” said presenter John Whelan, RN, BSN, clinical education specialist at Healthmark Industries in Fraser, Michigan, during the June 13 session “Critical Updates: AAMI ST91 for Flexible Endoscope Processing.” Whelan was a member of the work group that created the new guidelines.

Whelan gave an example from an incident six years ago to illustrate why proper endoscope processing is so important: Six patients became ill and two died after E. coli infection was traced back to endoscopic procedures. A borescope inspection showed brown stains and scrape marks on the endoscope biopsy channel interior. Further testing confirmed a leak.

“When we talk about embedding quality control measures to prevent harm and reduce infection risks, it’s precisely instances like these that we’re working to prevent,” Whelan said. “What we need to do...is embed quality control, especially at the human error hotspots.”

Emphasis should be on areas of enhanced visual inspection, cleaning verification, drying monitors, and surveillance, he said.

Changes in the new standard include the following focus areas:
• Attention to detail in wording, such as using “should” versus “shall” in recommendations
• Inclusion of peer-reviewed research, and citations from the U.S. Food and Drug Administration’s Manufacturer and User Facility Device Experience (MAUDE) database
• Emphasis on certification, training, and competencies
• Direction for physical design
• Management of “high-risk endoscopes”
• “Point of use treatment” rather than “precleaning”
• Enhanced visual inspection, cleaning verification and borescopic inspection
• Recommendations against manual disinfection
• Drying post processing
• Clean handling and storage
• Embedded quality monitoring
• Sterilization
• Multiple informative appendices

Whelan outlined several of these areas in detail, pointing out why the changes were made. At minimum, healthcare facilities should adhere to the 33 “must” recommendations and 33 “shall” recommendations in the guidelines, he said.

Whelan specifically talked about “high-risk endoscopes,” defined as those associated with infectious outbreaks, and those that are difficult to process. These include elevator-channel endoscopes, bronchoscopes, ureteroscopes, cystoscopes, endobronchial ultrasound (EBUS) scopes and others determined by each facility.

High-risk endoscopes must undergo cleaning verification every cycle. Non-high-risk endoscopes should still have cleaning verification, but each facility can determine how often that should happen.

“It should be based on science, not just throwing darts at a dart board,” Whelan said. “Ideally, it would be based on frequency of
use, procedural volume, patient population served—that type of thing.”

As Whelan walked attendees through the endoscope processing workflow, he pointed to the new term “point of use treatment,” which represents all the tasks immediately required post-procedure. It includes pre-cleaning, but that’s only one of the steps. Staff should also remove accessories from the scope, identify the scope as contaminated, place scope in a transport container and create a communication method for processing staff so they know the time of precleaning.

“It’s critical to remove the bioburden load as soon as possible so that the subsequent steps are successful,” he said. “You can’t justify not performing precleaning because it’s the same staff member that’s going to take the scope and clean it in the processing room or because the processing room is right next to the endo room….None of that matters….It needs to happen right at the bedside right after the procedure.”

The guidelines also emphasize that staff need to pay attention to delayed processing protocols. That means the time from point of use treatment to the start of manual cleaning. The most prescriptive direction comes from endoscope manufacturer Olympus, which says the time should be no more than one hour, Whelan said.

If more than one hour passes, delayed processing protocols need to take place. This means conducting an extended detergent soaking—which can take from one to several hours, depending on the extent of soiling. Extended detergent soaking should not be part of standard practices.

Whelan said he still regularly sees facilities in which endoscopes are used after regular work hours and then endoscope cleaning staff find dirty endoscopes waiting for them in the morning.

“That is not acceptable anymore,” he stressed. “You have to fully process a scope after it’s used, so what that means is people need to have the staff and the resources to either get the scopes to a 24/7 operation like [sterile processing] or have the on-call staff trained and competent to process the scope.”

Whelan went through the multiple steps once flexible endoscopes make it to the processing area. The first task is leak testing, which must happen every time. “When you round, you should ask ‘how often do you perform leak testing?’ The correct answer is ‘every time.’ It’s not correct to say ‘we do it once a day’ or ‘what’s a leak tester?’” Whelan said.

Leak testing is the opportunity to prevent not just fluid invasion, which can damage the internal components of the scope, but bioburden invasion that might not escape until it’s used on the next patient.

Scopes must be removed from service if there is any leak. “Do not let staff try to justify: ‘it’s just a small leak,’” Whelan said. “Again, you’re putting the next patient in line at risk by doing that.”

There is a new recommendation in the guidelines on performing daily tests of pressure outputs on the leak testers. Consider reviewing documentation to see how often staff spot a leaking scope. If they never discover a leak, that’s a red flag because leaks will happen.

Next comes the most important step of processing: manual cleaning. The guideline covers delayed processing protocols, utility water rinsing, and drying.

Drying is important because the next step is inspection and you cannot see through water. It doesn’t have to be “bone dry,” but wipe the scope with a lint-free cloth and blow air through the channel so you can adequately inspect it.

If your facility uses automated endoscope reprocessing machines (AERs), know that AERs don’t replace or abbreviate point of use treatment. If your institution is considering a fully automated process, a risk assessment should be performed that includes IP staff, Whelan said.

Inspection is the next step after manual cleaning. Best practice is enhanced visual inspection with lighted magnification. However, it’s impossible just by looking to tell whether the scope is truly clean, so then it’s time for cleaning monitors or cleaning verification tests.

High-level disinfection is the next step. The document references manual high-level disinfection because people still need to be trained on it in case of equipment failure, Whelan explained. Fully automated high-level disinfection is recommended.

Drying comes next. Endoscopes must be completely dry before they leave the processing area, whether it’s going to a procedure or storage. The AER has an air purge, not a validated drying cycle. Whelan finished up the workflow by going over multiple storage recommendations.

As staff review the new standards, they should recognize they can’t do everything all at once, Whelan said. Use a priority matrix: “At the very least, we need to give priority to those high-risk endoscopes, the ones we already know have had issues, the ones that we know are being used in places of the body where they put the patient more at risk.”

Melanie Padgett Powers is a freelance writer for Prevention Strategist.
A Deeper Look at HUMAN FACTORS ENGINEERING

BY SANDY SMITH

The best-laid plans can go awry when implemented by a real—and fallible—human in a real-world situation. Understanding that becomes the basis of human factors engineering. The Systems Engineering to Enhance Patient Safety (SEIPS) model brings human factors engineering directly to infection prevention.

Linda McKinley, RN, PhD, MPH, CIC, FAPIC, research health scientist at Madison (Wisconsin) VA Hospital, and Marc-Oliver Wright, MT (ASCP), MS, CIC, FAPIC, clinical scientist liaison at PDI Healthcare Inc., discussed how the two integrate into improvements in during the APIC’22 session, “Human Factors Engineering and Infection Prevention.”

Two reports—*To Err is Human* and *Crossing the Quality Chasm*—were published by the Institute of Medicine (now known as the National Academy of Medicine). Those reports, McKinley said “were very influential in how we address patient safety.” Notably, that change was in looking at a systems issue rather than an individual failing.

McKinley showed a cartoon of Homer Simpson holding his head, overwhelmed by the number of buttons before him. “You can see that Homer is trying to hold his brain together as he looks at this dashboard of technical equipment. It’s the same for us. When we look at our complex environment, we see that. To keep our patients safe, it is very difficult to make it simple. Even though maybe human factors engineering might be a new term to you, I would argue that you probably have already been involved. If you’ve been involved in any design or redesign of tasks, or bringing in new products, you likely have been involved in human factors engineering.”

In 2006, the University of Wisconsin, Madison developed the concept of SEIPS and broke a work system down to five categories: the person, organization, tools and technology, tasks, and environment. Each of those categories looks more deeply into what might influence those areas. The person, for example, might be impacted by education, skills and abilities. The organization will be influenced by communication and a patient safety culture. Even the physical environment can make a difference, if it was too hot to don PPE, for instance, or the lighting was poor.
Taking all of these factors into consideration can help pinpoint problems—and potentially improve safety.

Rethinking C. diff

The SEIPS model was applied to combat C. diff infections at McKinley’s facility. “Many times, when people apply evaluation using the SEIPS model, it involves observation, staff interviews, or a combination of both.”

The interviews included questions that were “very basic and open-ended,” she said. “We asked questions like, ‘What do you like or don’t like about chlorhexidine bathing?’”

The interviews were the basis of a tool kit, and everything was on the table. “We argued back and forth: ‘Are we going to call this chlorhexidine bathing or chlorhexidine bathing treatment?’”

The tool kit included the human factor design principles: consistency, standardization, usability, mental models, and participatory design. A few participated in a pilot and evaluated the tool kit’s usefulness.

Terminal Room Cleanings

Wright used environmental services (EVS) and terminal room cleanings as the basis for his discussion, pointing out the importance of involvement of all participants. “Take a multi-process and multi-stage” approach, he said. “You make sure the people involved in the work system have what they need to understand the process, a clear expectation of the tasks and steps of what is expected is laid out. No matter how clear you make the process, what you want is to have participants who know the system, who do the work, help you identify those steps and barriers.”

He shared a case study of supplemental disinfection to prevent multidrug-resistant organisms (MDROs). “Most or all supplemental strategies bring in additional work. It is an additional task and not sufficient to say ‘Go for it.’ When do you start this process? Hopefully before you’ve signed any checks. You want to do that earlier down the road, before you commit to a specific tool.”

He cited a Johns Hopkins paper redesigning an EVS room discharge work system. It highlighted the three areas most likely to be impacted by any change: tools and technology, people, and tasks. “The thing I appreciate most about SEIPS model is you don’t see one-way arrows. Each of these areas impact the other.”

Barriers and Facilitators of Success

Both, however, organized their topics into looking at barriers and facilitators of success. “When we did develop our tool kit for chlorhexidine bathing, we did use human factors engineering design principles,” McKinley said. “Just make sure that you have some end users who are part of your team when you develop instruments.”

It’s important to consider whether the change being implemented is significant. “Not all change is equal,” Wright said. He said changing from a gel-based hand sanitizer to foam may not require significant restructuring in processes, but it could provide the opportunity to evaluate whether policies need to be updated or dispenser locations need to change. Without that sort of intervention, though, the change likely was not enough to merit significant consideration.

But what might be seen as a simple change for EVS on patient discharge cleaning might be more involved and reach across several departments. “Let’s say your EVS has a 20 percent vacancy and a 15 percent turnover,” Wright said. “Your evaluation showed that this may add 20–25 minutes of time in room turnover. Your facility occupancy rate is 85 percent. This is cause for evaluation of your whole work system. If you just go with that new device or work process, you’re pounding a square peg into a round hole. It’s not going to get you very far.”

Instead, include not only EVS, but also others who might be impacted, such as room scheduling, patient transport, and the emergency department.

Sandy Smith is a freelance writer for Prevention Strategist.
The Making of an IP: An Interview with an APIC Icon

Marguerite Jackson

Prevention Strategist wraps up a year-long anniversary celebration by interviewing a legend in the profession.

When researching the history of Infection Prevention and Control, APIC found that the name Marguerite Jackson, PhD, FAAN, was especially prevalent among ground-breaking publications, the development of requisite courses in IP education, and historical events that have brought IPC to the forefront of healthcare in today’s world. In a lustrous career marked with accolades and awards, Jackson has been recognized for her contributions to the nursing profession and elected by her peers to serve the nursing and IPC professions in roles such as the Nursing-at-Large representative to The Joint Commission’s (TJC’s) Standards and Survey Procedures Committee; serving as one of five authors for the Centers for Disease Control and Prevention’s (CDC’s) update of the Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007); and on the Board of the National Foundation for Infectious Diseases (NFID). She is a fellow of the American Academy of Nursing and the Society for Healthcare Epidemiology of America (SHEA). Read on as Jackson shares her journey through IPC with Prevention Strategist:

Jackson reflects on how networking pivoted the direction of her career:

Back in 1973, I had the opportunity to attend the CDC Course 1200G while still living in Mississippi. Meeting people who were new to infection control and prevention (ICPs, or Infection Control Practitioners) and also recognizing that my master’s degree in microbiology and my nursing education...
prepared well for this field, I began my quest to become an ICP. In 1974, I moved to San Diego with my husband and young son, and it took until 1977 for me to get a job in the field; however, in the meantime I attended a new course at the University of California San Diego Extension called “Epidemiology for Infection Control Teams” and partnered with the ICP at UCSD for a research project. She had the clinical skills and I had the research knowledge. I also joined the APIC chapter and, since I didn’t have an ICP job, offered to be secretary in exchange for attending the meetings. At the end of the year-long UCSD Extension course, a second ICP position opened at UCSD and I was selected for it. Networking and volunteer work brought me great joy and UCSD employment provided outstanding career opportunities for over 33 years.

**Jackson recalls how the collaboration between research and clinical efforts influenced changes in nursing practice:**

In 1980 I was invited to present a session on basic research at the Annual APIC conference. At that conference were CDC personnel who were developing a course called “Management Skills for Infection Control Nurses.” I was invited to be one of the members of the working group for developing that course, along with seven other ICPs from all over the country. We got to know each other well and were excited to be part of the development of something unique and important for ICPs. Patricia Lynch was one of the members of the working group. Pat’s extensive clinical knowledge and my strong research background put us in a position to work collaboratively on many aspects of this course development. We also began to question techniques for isolation precautions which were still largely based on the red and yellow book, *Isolation Techniques for Use in Hospitals* (1970; revised in 1975) – pictured at right. These publications provided a roadmap about “how to” implement isolation precautions, once a physician had directed the nursing staff to do so. We called this a "diagnosis-driven" isolation system. At about the same time, a study was published about sero-prevalence of hepatitis B antibody among personnel at Boston City Hospital. Results showed that a significant proportion of nurses working in the ED and laboratory workers had evidence of having had hepatitis B. How could this be if “Blood Precautions” were used for “anyone who is HBsAg positive”? It was clear to us that such a diagnosis depended on a lab test, the results for which could take several days. Thus, the precautions would not be directed until the diagnosis was made. In the meantime, there had been ample opportunities for exposure to blood bare-handed. Gloves were not available unless the patient was "on isolation" or having a sterile or surgical procedure. The focus of Blood Precautions was on needles and syringe precautions and labeling of blood specimens. There was no mention of gloves.

Armed with this “ah-ha” moment, we conceptualized a different approach to isolation precautions called “Body Substance Isolation.” It focused on taking precautions with blood, urine, stool, and other bodily secretions and excretions based on the interaction with the patient rather than the diagnosis of the patient. We published a paper in the *American Journal of Nursing* (1984;84:208-210), “Infection Control: Too much or too little” that depicted the epidemiologist’s iceberg (cases of many infectious diseases are undiagnosed and thus under the water line) and the spectrum of infection (most cases of infectious diseases are transmissible to others before the diagnosis is made). This work, combined with a review of nursing practices for “communicable diseases” through careful review of issues of the *American Journal of Nursing* from 1900-1984, provided the basis for another publication, “Isolation practices: A historical perspective” (*American Journal of Infection Control* 1985;13:21-31). We learned that there was little or no research basis for dozens of practices that had been integrated into nursing practice for decades. For example, “Everything in the room of a person on isolation is contaminated so everything in the room must be discarded when patient is discharged.” This meant that all unopened paper products including toilet paper, etc., had to be thrown away, which led to use of the “isolation cart” outside of the room so that only items to be used were taken into the room. The cart was the only location for gloves. There were none at the bedside. The needle disposal box (for clipping the needle) was also on the cart outside the room. The needle disposal box (for clipping the needle) was also on the cart outside the room.

Over the years, Pat and I were developers of the “interaction-driven” approach to isolation precautions, as were increasing numbers of practicing nurses and physicians. Most ICPs were early adopters of this approach and spent countless hours working with their individual hospitals to implement changes in their isolation practices. Of course, HIV/AIDS came along at this same time and that helped move things forward. In 1996, the
IPs didn’t just come into being as they are today. Back 50 years ago there were no evidence-based practices for isolation techniques. In fact, the first booklet of instructions to implement isolation precautions had very few references and they were about infectious diseases. (Isolation Techniques for Use in Hospitals, 1970, US Department of HEW, Public Health Service).

Jackson recalls how shifting from “how to” conduct a specific procedure to “why” conduct a specific procedure was key to research and development of evidence-based practices:

With our review of the American Journal of Nursing’s approach to the care of patients with “communicable diseases” it was very clear that nurses were taught HOW to do a task rather than WHY they were doing the task. This orientation to nursing education not only applied to isolation precautions but was pervasive throughout the discipline. In fact, many ICPs anecdotally reported they got “in trouble” when they asked nursing or medical personnel why they were doing a particular task in a particular way. “We’ve always done it that way” was often the response. It has taken many, many years for the nursing profession to become evidence-based. Many researchers have studied and continue to study nursing procedures with the intent of improving practice and patient outcomes. Risk reduction strategies for prevention of many types of healthcare-associated infections are now being studied by researchers who include ICPs in the research teams. ICP research teams also conduct quality research that is published in a variety of peer-reviewed journals. We have come a long way since Pat Lynch and I asked the question “Infection Control: Too Much or Too Little?”

Jackson comments on her legacy in APIC’s history and development:

I have had a wonderful career that all started when I learned about APIC and joined in 1973. I also take pride in believing that Pat Lynch and I made a contribution to changing the direction of nursing practice. Because I was among the pioneers to develop this new discipline, I participated in the first Curriculum Committee, was a contributor and Associate Editor for the first APIC Curriculum, helped develop the first CBIC examination, and spoke internationally about reducing risks to healthcare workers and patients through interaction-driven care procedures.

Words for the current and future members of APIC:

I believe strongly that having a passion for a career in infection prevention and control made me a better person and contributed to my joy in life. IPC was never just a “job” for me. I loved volunteering for APIC committees (most of the work was done on weekends and evenings outside of my regular job) and delighted in being invited to participate in many task forces and committees for other organizations. I was not paid for this work. Volunteering has been an integral part of who I am all of my life. I have carried this through post-retirement to volunteer activities focusing on theater. My son learned from observing me and has also become a very active volunteer in his professional associations, church, and his children’s activities. I am very proud of him and my two grandchildren. I am a widow now, almost 80 years old, and adjusting to the next chapter of my life.

Much of her time now is filled with spending time with her grandchildren and travel. She is also now The Costume Lady for the PowPac community theater in Poway, California.
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Healthcare-associated infections (HAIs) were becoming an increasing concern in the 1950s and 1960s with staphylococcal outbreaks reported frequently during this period. In 1960 in the U.K., infection control emerged as a separate discipline in nursing and soon afterwards, infection control nursing became a specialty in the U.S.

By the late 1960s, Claire Coppage at the U.S. Centers for infection control course where nurses from around the country began learning and networking. The seeds for APIC were sown at those courses. APIC was founded in 1972 by a pioneering group of infection control nurses who had attended Claire Coppage’s classes and realized the need for a national association to promote an organized approach to the prevention of HAIs.

Follow APIC’s development from the 1960s through 2022 on the next pages and celebrate 50 years of infection control and prevention.

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By the late 1960s, Claire Coppage at the U.S. Centers for Disease Control and Prevention (CDC) began offering an infection control course where nurses from around the country began learning and networking. The seeds for APIC were sown at those courses. APIC was founded in 1972 by a pioneering group of infection control nurses who had attended Claire Coppage’s classes and realized the need for a national association to promote an organized approach to the prevention of HAIs.

Follow APIC’s development from the 1960s through 2022 on the next pages and celebrate 50 years of infection control and prevention.
Carole DeMille from Massachusetts General Hospital, along with Betsy Pantelick from Yale New Haven, Pat Lynch, and others, met at the CDC training program (1992) for nurse epidemiologists. The course was organized by Claire Coppage of the CDC who was the driving force behind the formation of APIC. Claire recruited two members of each 1200 G class to serve on a rational steering committee to begin planning what would eventually become the Association for Practitioners in Infection Control.

Patricia Lynch is elected as APIC's first president.

Carole DeMille, along with Betsy Pantelick, Shirley Bradley, and other ICPs in New England became the architects of APIC-New England, APIC's first chapter.

APIC releases first position statement entitled: "Statement on Infection Control Programs."

APIC participated in the first international conference on the role of the "Infection Control Nurse" sponsored by the World Health Organization in Denmark.

CDC undertook a nationwide study known as the Study on the Efficacy of Nosocomial Infection Control, or the SENC Project. This study was a very thorough assessment of infection control effectiveness in 338 hospitals with and without CDC-style infection control programs. Final study results determined that hospitals with infection control programs experienced significantly lower rates of HAIs than did their counterparts without these programs.

1969
Key Wenzel, an APIC founder and one of the first IPs in the U.S., publishes an article on the profession in Nursing Clinics of North America.

1970
APC publishes first issue of newsletter.

1972
First national conference of APIC is held in Toronto.

1973

1974
Marguerite Jackson joins APIC and becomes one of the pioneers in the field, contributing immensely to the science and practice of IPC. She and Pat Lynch changed the direction of nursing practice with their development of the Body Substance Isolation System that is the precursor to Standard Precautions. She was an author of the Delphi project looking at staffing requirements for IPC programs and worked on the "Brown Book" project. To this day, Marguerite is instrumental in bringing California IPs to APIC conferences with her generous annual scholarship.

1976
First Infection Control standards by the Joint Commission on Accreditation of Healthcare Organizations.

1978
Ebola outbreak: Between September 1 and October 24, 1976, 318 cases of acute viral hemorrhagic fever occurred in northern Zaire.

Legionella was discovered after an outbreak in 1976 among people who went to a Philadelphia convention of the American Legion. Those who were affected suffered from a type of pneumonia that eventually became known as Legionnaires' disease.
In the late 1980s, CDC started to hold their trainings in the field, away from Atlanta, and this was one of the courses, part two of “Management Skills for ICNs.” The photo includes students and facilitators of the CDC course, held in NYC during the fall of 1989. Standing: Marie Ciaccio Tevittis, Wes McKieley, Julie Jefferson, Lucille Plantimoli, Sherry Chisom, George Allen, Joyce Manuel, Lilian Burns, Urula Reyes, Nora Ainsch, Audrey Adams, Kathleen Russo. Seated: Ellen Clark, Anne-Marie O’Brien, Irene Chorney, Eileen Englebracht, Elaine Atwood, Marlene Harrison, Joanne Savitt.

The APIC Journal becomes the American Journal of Infection Control (AJIC) and the first issue of AJIC is published.

CBIC administers first certification exam

APIC’s first president, Pat Lynch, and fellow IR, M. Jeanne Cummings, pictured in 1985.

“National Infection Control Week” is established by President Reagan, to eventually become “International Infection Prevention Week” or IPW.

Infection control was upgraded by the Health Care Financing Administration (now Centers for Medicare & Medicaid Services) from a standard under sanitary environment to a separate Condition of Participation.

1980
First cases of an illness subsequently defined as acquired immunodeficiency syndrome (AIDS) is reported by healthcare providers in California and the CDC.

1981
The APIC Certification Association (APICCA) is established, to eventually become the Certification Board of Infection Control and Epidemiology, Inc (CBIC).

1983
HealthChief Calls AIDS Battle ‘No. 1 Priority’

US Assistant Secretary of Health and Human Services identifies AIDS as number one public health priority.

1985
APC issues its first guideline, “Draft of guideline for use of topical antimicrobial agents” in AJIC.

1986
TB sees huge resurgence due to human immunodeficiency virus infection (HIV).

1987
PDI
PDI introduced the EPA registered hard surface disinfecting wipe Sani-Cloth®. Today, PDI offers multiple disinfectant products, including Super Sani-Cloth® wipes, the preferred disinfectant wipe in healthcare.

1988
1988 Program Committee (Annual Conference Committee)
Back row, from left: Unidentified, Mary Butler, Elsa Hubert, Sue Sebacco, Jeannette Daniels, Sue Slavish, Front row: Jerry Amundsen, Dee Miller, Nancy Click, Nick Hall

1989

*Thank you to our sponsors for their generous support as we celebrate our 50th year.*
APIC's "Guideline for selection and use of disinfectants" is published in AJIC.

1990 Program Committee (Washington, DC)
Back: Liz Mazzei, Sue Sebazco, Joe Klinek, Joanne Balderson
Front: Terrie Lee, Mary Brachman, Nancy Clicx, Jan Frain

AIDS becomes the second leading cause of death in the U.S. among men ages 25-44 and is likely to be one of the five leading causes of death among women ages 15-44.

CDC establishes its Healthcare Infection Control Practices Advisory Committee (HICPAC) to provide advice on the practice of infection control.

1990

1991

1993

1994

1995

1996

1997

APIC’s President Linda McDonald announced the formation of the APIC Research Foundation to sponsor research studies and collaborate with academic investigators on projects that align with the association’s priorities.

1993 APIC

1995 APIC President Terrie Lee, during her presidential address, demonstrates the Internet and what it could do for APIC.

APIC turns 25. Pictured left to right: Gine Puglise, Ria McCormick, Martin Faveiro, Jean Reed, Vondramarre, Carla Alvarado, Julia Garner, Kathy Lucente, Margarite Jackson, Patricia Lynch, Janice Belcher, and Betsy Pantelick.

APIC publishes its first hand hygiene guideline, authored by Dr. Elaine Larson.

Elaine Larson becomes Editor of AJIC, a position she holds for 25 years, until her retirement in 1999.

The International Infection Control Council (IICC) is established. The concept for its inception was to add to the expert resources available to members of three organizations—APIC, CHICA, and ICNA—through collaborative development of projects of mutual interest.

APICList, now known as IPTalk, debuts.

APIC.org website is launched.

The APIC Infection Control and Applied Epidemiology: Principles and Practice is published; it is now known as the APIC Text.

Program Committee Chairs
1997 - Sue Sebazco
1998 - Pat Kulich
1999 - Gail Harris
1995 - Jan Frain
1999 - Judy Prescott
Publication of Requirements for infrastructure and essential activities of infection control and epidemiology in out-of-hospital settings: A Consensus Panel report, with SHEA.

The U.S. declared that endemic measles cases were eliminated in U.S. However, during 2011–2014 there was a resurgence of measles outbreaks in the U.S.

APIC Guideline for endoscopy is published.

APIC celebrates 30 years.

Four states (Illinois, Florida, Missouri, and Pennsylvania) began to mandate that healthcare facilities report HAIs to the public.

The first APIC/CDC/SHEA safety symposium/ e-learning modules are published.

The emergence of West Nile virus (WNV), a flavivirus within the Japanese encephalitis antigenic complex, in New York City in the summer of 1999 marked the first time that this Old-World virus had been identified outside of the Eastern Hemisphere.

Post-9/11, anthrax is mailed to several businesses throughout the U.S. five people die as a result, bioterrorism fears grow.

SARS-CoV (Severe Acute Respiratory Syndrome) pandemic begins, with 8,098 cases worldwide (8 in U.S.) resulting in 774 deaths. Canada requests U.S. IPs to assist, which several did. Ann Marie Pettis, Linda Greene, Janet Franck, and others arrived at Scarborough Grace (ground zero hospital).

In 2003, TheraDoc launched the Infection Control Assistant. Users could find and document infections as well as generate infection reports. The documentation was designed to match CDC forms to standardize workflow across health system hospitals and benchmark against published data.

“Guidance on public reporting of healthcare-associated infections: recommendations of the Healthcare Infection Control Practices Advisory Committee,” published in AJIC. This guidance paved the way for individual states and eventually the federal government to require hospitals to report their HAIs to the CDC’s central database, the National Healthcare Safety Network (NHSN).

Two research projects seeking to reduce central line-associated infections (CLABSS) were published. One study joined the CDC and the Pittsburgh Regional Healthcare Initiative (Reduction in Central Line–Associated Bloodstream Infections Among Patients in Intensive Care Units — Pennsylvania, April 2001–March 2005). The other study brought together researchers from Johns Hopkins University Hospital and the Michigan Hospital Association (An Intervention to Decrease Catheter–Related Bloodstream Infections in the ICU). Both studies found a 95% reduction in CLABSS by implementing relatively simple interventions.

APIC publishes a State of the Science Report on the Economic Impact of Infection Control. Denise Murphy, 2007 APIC President, was a lead author on the report.

“Thank you to our sponsors for their generous support as we celebrate our 50th year.
APIC publishes its first major research study showing a much higher rate of MRSA than previously reported. “National prevalence of methicillin-resistant Staphylococcus aureus in inpatients at US healthcare facilities, 2006,” compiles data from infection preventionists at more than 1,200 U.S. hospitals.

APIC’s second major research study is published: National U.S. Inpatient Healthcare Facility Clostridium difficile Survey. This was the largest, most comprehensive prevalence survey of C. difficile, which revealed that colonization and infection rates among hospitalized adults were much higher than previously estimated.

The Joint Public Policy Committee (APIC, SHEA, CDC, CSTE) creates “Essentials of Public Reporting of Healthcare-Associated Infections: A Tool Kit.”

H1N1 swine flu pandemic begins, resulting in 12,220 deaths worldwide.

2006
Mumps outbreaks across multiple states result in 6,500 cases, many on Midwestern college campuses. The largest outbreak would take place in 2009-2010, when 3,000 cases in religious communities in NYC were reported.

2007
APIC introduces the term “infection preventionist” to describe the work of infection control professionals and better articulate the expanding roles of APIC members.

Congress mandates CMS to stop providing increased payments to hospitals for the care of patients with HAIs. CMS worked with CDC to determine which HAIs were “reasonably prevented.”

APIC/SHEA Guideline: Infection prevention and control in the long-term care facility is published.

APIC Consulting Services is founded.

APIC News becomes Prevention Strategist.

2008
Congress incorporated HAI prevention into the Value Based Purchasing program of the Affordable Care Act. The first HAI for mandatory reporting was CLABSI.

APIC member Susan Dolan discovers three patients with blood cultures positive for Bacillus cereus, an organism that can lead to life-threatening infections. Her team’s exploration reveals non-sterile alcohol prep pads—one of the most widely used products in healthcare—as the source of contamination. Dolan’s investigation led to a worldwide recall of tainted lots and FDA reminders about the safe use of these products.

2009
The CDC report, Antibiotic Resistance Threats in the United States, is published in 2013. Using conservative estimates, the CDC determined that antibiotic-resistant organisms are responsible for more than 2 million infections and 23,000 deaths per year in the United States, at a direct cost of $20 billion.

Candida auris emerges in the U.S. in MD, NY, IL.

2010
By year’s end, more than 6,000 union carpenters completed the 24-hour ICRA training class. That same year, the UBC started the 8-hour ICRA Construction Trades Best Practices Awareness Training for Healthcare Professionals to change the culture of healthcare construction.

Pertussis resurfaces with 48,277 cases in U.S.
MERS-CoV emerges in the Middle East.
APIC issues Strategic Plan 2020.

Nationwide fungal meningitis outbreak is traced to a compounding pharmacy in New England. Infection preventionists were key to solving the mystery of this outbreak.

Dr. Marion Kainer, who helped uncover the outbreak, speaks at APIC’s Annual Conference.

2012
APIC develops the first model for infection preventionist (IP) competency.

2013
The CDC reports—Antibiotic Resistance Threats in the United States, is published in 2013. Using conservative estimates, the CDC determined that antibiotic-resistant organisms are responsible for more than 2 million infections and 23,000 deaths per year in the United States, at a direct cost of $20 billion.

Candida auris emerges in the U.S. in MD, NY, IL.

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In September 2014, the CDC confirmed the case of Ebola in the U.S. in a man who traveled from West Africa to Dallas, Texas.

APIC members provide training to teams traveling abroad and serve on the ground in West Africa assisting with the response.

APIC makes national headlines and testifies before Congress with its “Ebola Readiness Survey” which found that only 6 percent of IPs at U.S. hospitals indicated they were well-prepared to receive a patient with Ebola and that one in two hospitals have only 1 or fewer than 1 full-time IPs on staff.

An estimated 2,800 chikungunya virus disease cases are reported among U.S. travelers returning from affected areas in the Americas. Chikungunya is a particular concern for pregnant women.

Measles outbreaks occur as a consequence of undervaccination.

Sodexo Healthcare sets a new standard for environmental infection prevention with the launch of Protecta®, an evidence-based, standardized approach, successfully reducing HAIs at over 120 partner sites to date.*

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APIC holds Consensus Conference on the Future Role of the Infection Preventionist

The CRE strain of KPC (Klebsiella pneumoniae carbapenemase) took the lives of seven patients at the National Institutes of Health Clinical Center near Washington, D.C. According to the CDC, the first reported CRE case occurred in a North Carolina Hospital in 2001, and since then, cases have been identified in 41 states.

CDC releases Ebola supplemental funds to support infection prevention efforts.

Non-tuberculosis Mycobacterium infections associated with heater-cooler devices used in cardiac surgery are reported.

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CDC releases Ebola supplemental funds to support infection prevention efforts.

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The UBC trained nearly 100,000 industry professionals and started our first strategic partnership with APIC. Through training we ensure the health and safety of every patient, healthcare professional, and visitor. It's the number one priority of the UBC ICRA program.*

January 20th: 1st U.S. case of SARS-CoV-2 identified in Snohomish County, WA.

February: 1st nursing home outbreak of SARS-CoV-2 identified in King County, WA.

March 11th: WHO declares COVID-19 a global pandemic.

December: The COVID-19 vaccine created by Pfizer-BioNTech is released under EUA to the U.S. public 16 years and older.

Devin Jipp joins APIC as CEO.

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BD now offers an exclusive portfolio of fully sterile skin prep applicator products and a wound irrigation solution to assist clinicians as they strive to reduce healthcare-associated infection rates in health facilities.

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- **BD PurPrep™** The first and only fully sterile povidone-iodine (PVP-I) plus IPA in a single use applicator in the U.S.
- **BD Surgiphor™** The first and only pre-mixed terminally sterile povidone iodine (PVP-I) wound irrigation solution.

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What Will the Future Bring?

50 YEARS FORWARD IN INFECTION PREVENTION

Compiled by Heather Ridge and Jay Liggins

Heather Gibson, BSN, MBA, CIC, APIC Communications Committee member, 2020-2022

Birgette Lao, MA, RN, NEA-BC, CIC, APIC Communications Committee member, 2021-2023

Janet Haas, RN, PhD, CIC, FSHEA, FAPIC, APIC President 2018

Marie Moss, MPH, RN, CIC, APIC Communications Committee member, 2022-2024

Deanna Hillstrom, RN, MSN, CIC

Patti Grant, RN, BSN, MS, CIC, APIC President 2013

Tania Bubb, PhD, RN, CIC, FAPIC, APIC President-elect

Anne Marie Pettis, BSN, RN, CIC, FAPIC; APIC President 2021

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TO CLOSE OUT THIS HISTORIC YEAR FOR APIC, MEMBERS OF APIC’S COMMUNICATIONS COMMITTEE, HEATHER RIDGE AND JAY LIGGINS, POLLED A GROUP OF MEMBERS ON ABOUT PAST MILESTONES AND PREDICTIONS FOR THE FUTURE.

**QUESTION:** What do you see as one of APIC’s greatest accomplishments over the past 50 years?

*HG:* Helping people and especially new IP’s manage to limit transmission.

*BL:* Infection Prevention became a recognized field of specialization and not just one of the tasks.

*JH:* Establishing IPC as a specialty in healthcare.

*MM:* APIC has provided outstanding opportunities for professional development to all levels of infection preventionists, from novice to highly experienced.

*DH:* I feel that APIC has been successful in bringing to light infections and resources to minimize the risk. Understanding that there is a problem such as an infection is half of the battle.

*PG:* Staying the course while keeping the mission and knowing when to ‘let go’ as the content experts and hiring a professional HQ staff so the IP’s can “IP.”

*TB:* APIC’s commitment to the growth of IPC profession and professional development of IP’s—providing relevant resources, AJIC journal, annual conference, training, webinars.

*AMP:* Creation of a diverse, equitable and inclusive APIC organization (membership, staff and leadership). Also we must advocate for these same principles in healthcare delivery.

**QUESTION:** What goals or accomplishments do you hope for APIC in the next 50 years?

*HG:* To become a bigger source of education for IP’s and the public.

*BL:* To be more global in influence and membership.

*JH:* Defining the role and training of IPs, getting the Department of Labor to recognize IPC as a profession, and defining credentials and how to obtain them.

*MM:* I hope that APIC becomes a household name for health care consumers to turn to as a source for Infection Prevention information.

*DH:* I hope that APIC continues to message the Importance of Infection Prevention and inspire others to join the chaos that is a day in the life of Infection Prevention.

*PG:* Narrowing down the IP niche by not diluting our core mission of preventing infections in all healthcare settings first, and the world in general second.

*TB:* Increased visibility, recognizability, and credibility within the auspices of healthcare facilities, like organizations, and by public.

*AMP:* Creation of a diverse, equitable and inclusive APIC organization (membership, staff and leadership). Also we must advocate for these same principles in healthcare delivery.

**QUESTION:** If we were to create a time capsule to be opened in 50 years, what would you include, and why?

*HG:* A facemask, as a symbol that we should never take for granted our resources will be available.

*BL:* Posters on respiratory hygiene and 5 moments hand hygiene: a good reminder on what we are doing.

*JH:* PPE, NHSN definitions, some first person accounts of being an IP During COVID, some news clippings from various places and phases of the pandemic. In the first wave, healthcare personnel were heroes, by the third, public health officials were run out of town. Definitely include something on the impact of COVID on our elders in nursing homes. Maybe put in the report that showed the US was prepared for an epidemic from 2019 (Gates foundation?) as a cautionary document.

*MM:* A battery-operated alcohol hand sanitizer hand sanitizer dispenser and a mannikin wearing a Tyvek suit, multiple pairs of gloves and a PAPR. Why? Because COVID-19 PTSD!

*PG:* A profession dictated by publicly reported measures that cannot ever reflect actual patient care: this is already a reality yet not in the extreme. Public reporting of HAIs has brought the critical role IP’s play into focus. If not tempered with reality, there is the potential to fall into the same falsehood of mandatory testing for students within the public school system: teaching to the test. IP’s might be ‘forced’ to placed resources only on publicly reported measures despite the true challenges within their facility, be it a hospital, restaurant chain, or the penal system.

*TB:* So bad at sentiments like this—maybe, a picture of an IP performing environmental swabs?
QUESTION: What do you predict as the NEXT biggest threat (e.g., can be beyond pathogens, staffing shortages, AI, etc.)?

HG: Public complacency with transmission and infection.

BL: Science is clear on what options for infection prevention can be taken even with emerging pathogens. The biggest threat will be the generators and vehicles of false news.

JH: Science denialism, misinformation and backlash against public health interventions—including anti-vaccination, anti-masking, etc.

MM: Fast-occurring, then resolving 9"rapid-cycling")epidemics for different pathogens that occur simultaneously or back-to-back.

DH: Outside of Ebola sneaking around the corner, I hope nothing as we could all use some reprieve!

PG: CMS CoP decides IP&C systems are no longer relevant…do you think Healthcare would do the right thing anyway? Hopefully yes, yet I am not naive enough to think it would be business as usual.

TB: All the things listed in parentheses and invisibility and type casting (stereo-typing—nonscientific, environmental police rather than epidemiologists) of the profession (which, flipped are also opportunities if addressed strategically by APIC). Also, lack of growth for IPs within their healthcare facilities—often not seen as having transferable skillsets.

AMP: Our window of opportunity to create lasting change closing due to the principle of “complacency/crisis/complacency.”

QUESTION: What do you think will change the most in the next 50 years (e.g., specific technologies, pathogen threats, resources, etc.)?

HG: Growth of technologies and growth on understanding of infection prevention and its impact on our job. I think back to how nursing was when I started 25 years ago and I am amazed at the changes.

BL: The use of home based technology for testing and contact tracing. There will be different apps that can be downloaded as guidance for disease specific infection control measures and compliance.

JH: Continued diffusion of healthcare into non-traditional settings (telehealth at home, primary/urgent care at WalMart or CVS etc) further limited access to primary care and to other care—due to financial and wacky insurance situations, and due to staffing (25% of clinicians want to get out of healthcare, rural settings have always been struggling with attracting care providers, nursing burnout etc). Technology will be needed to empower people (everyone or just those who can afford and understand it?) to self diagnose/manage much of their care at home—apps make this possible for some things already. Not all of this is bad, a silver lining for IPC is that HAI are not transmitted via telehealth!

MM: Using AI to prevent epidemics and infectious disease outbreaks in healthcare settings.

DH: With technology taking over so much of what we do, I hope that we can use this to our advantage. I think we will be able to
take aspects of technology to minimize risks to patients and team members as well as easier ways to identify room for improvement when it comes to safety.

**PG:** Automation, automation, automation with the ability to actually PDCA infection prevention systems to get to an irreducible minimum of infection.

**TB:** Limited financial resources within healthcare, therefore limiting excess (IPs are a cost center, prevention activities often intangible—need prevention/simulation modeling data). (Re)Emerging pathogens, transmission modalities, and air and ventilation requirements. Regulatory arena—shift of focus from environment to practice techniques. Technology used to detect deviations from mean (indicating outbreak) for various (or specific proxy) organisms (HAI) within healthcare. Low tolerance by healthcare insurances for HAI costs.

**AMP:** Methods of surveillance.

**QUESTION:** Do you think the focus will change as far as HAI’s (airport safety changed their field to zero harm, will we get there)?

**HG:** This is a hard one! I really hope so and have seen tremendous movement towards understanding of prevention but I also see competing focuses as barriers, ex covid, staffing, tired staff etc.

**BL:** Possibly more diseases to track but the mechanisms of tracking may change. Hand hygiene and other preventive measures may be tracked electronically and there will be ‘talkies’ saying “you need to scrub the hub again” or “please clean the catheter exit site.”

**JH:** Without regulatory requirements, the gains we have made will be lost. We cannot count on a majority of agribusiness, healthcare business, insurance companies etc. to voluntarily prioritize HAI prevention and smart use of antibiotics, development of new products, drugs and strategies to prevent HAI, without incentive or regulatory requirements.

**MM:** An increased focus and emphasis placed to prevent/control MDRO (i.e. CRE, C. auris) transmission in SNFs.

**PG:** APIC has already taken a stance on zero tolerance and getting as close to zero infections as possible, but not as a “number” this is zero tolerance for noncompliance with evidence-based practices we know work. How is it lack of hand hygiene is still ‘tolerated’ and not escalated through human resource coaching just like medication errors, poor documentation, and being chronically late?

**TB:** Will we get to zero—no. Some HAI’s are not preventable. For others, which are preventable, the lack of coordinated strategy individual healthcare facilities, local health departments, individual states, and the nation takes will inhibit progress to zero. Other reasons include, travel and globalization, human behavior and environmental impact on same.

**AMP:** Hopefully economics will increase and maintain the demand for prevention of HAI’s.

**QUESTION:** Any thoughts on staffing/shortages in the future (any creative solutions)?

**HG:** Because of the staffing shortages, nurses will be pushed to cut corners in optimal care. IP’s need to work with nurses so they understand that cutting IP corners is not the corner to cut.

**BL:** Nursing staffing shortages globally. Possibly in 50 years, there will be a digital application that health institutions will use to measure IP ratio, and look into their database on who qualifies to be trained. Whoever fulfills the criteria will be asked to complete the APIC IP Residency Training Program (an on demand, digital training program that culminates to a certification exam).

**JH:** The surveillance work of IPs should be mostly done by algorithm—it’s not a good use of time to manually collect denominator data, for example, and staffing shortages may push the EMR providers to (finally) prioritize collecting these data in ways that are needed for surveillance purposes. The NHSN definitions are data/algorithm driven, so they could/should be applied automatically—with IP oversight to correct errors and work on interventions. IPs will need to be on the forefront of how robots for patient care are implemented to assure they are not vectors for cross contamination.

**MM:** Increase the number of non-RN MPH IPs. Hire more new grad RNs, NPs and PAs who aren’t interested in bedside nursing or are mid-career new grads.

**DH:** I feel that with technology, there will be ways to do some of the work that is time consuming. Taking the imop for example that has the ability to clean the floors at homes, why not take that to the next step to enhance what can be done in healthcare facilities.

**PG:** The original IP’s are retiring quickly—we were born in 1972—so mentorship must be stronger and altruistic, otherwise newbies will not make it past the two year mark.

**TB:** See bullet 4 re prevention/simulation modeling as a creative solution to justifying our existence and need for ‘x’ number of IPs to create cost-savings.

**AMP:** All the work we are doing to create the academic pathway and microcredentialing will help.
Highlights of International Infection Prevention... continued from page 10
were contracted while patients were being treated in hospitals. By 2015, infections were reduced to 687,000, an almost 2/3 reduction in infection rates.

Tracking prevalent HAIs in these facilities must be a priority. With the systems already in place and users starting to get acclimated, this is an ideal time to start tracking and reporting infections in long-term care.

Tiered Approach

While all three of these items are crucial to establishing IPC programs for the future, APIC is working with policymakers to implement these provisions as opportunities arise. If you are interested in learning more about these proposals, join the Action eList to get updates by emailing legislation@apic.org.

References

3. Fu CJ, Mantell E, Stone PW, Agarwal M. Characteristics of nursing homes with comprehensive antibiotic stewardship programs: Results of a national survey.

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