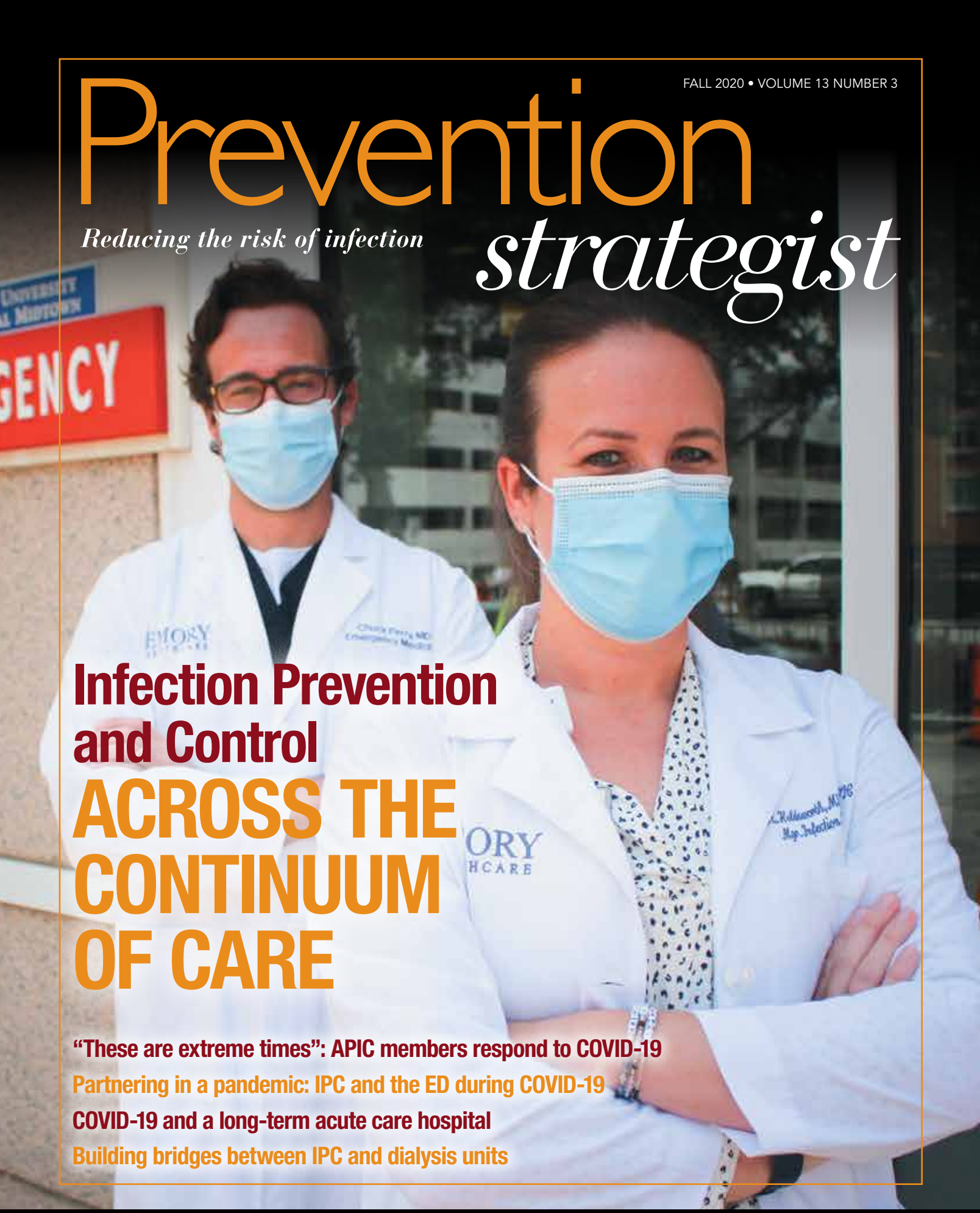
FALL 2020 • VOLUME 13 NUMBER 3

Prevention strategist

Reducing the risk of infection



Infection Prevention and Control ACROSS THE CONTINUUM OF CARE

"These are extreme times": APIC members respond to COVID-19

Partnering in a pandemic: IPC and the ED during COVID-19

COVID-19 and a long-term acute care hospital

Building bridges between IPC and dialysis units

A publication of the Association for Professionals in Infection Control and Epidemiology

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Prevention *strategist*

FEATURES

MICHAEL PERRY, MEDICAL DIRECTOR OF THE EMERGENCY DEPARTMENT, AND JILL HOLDSWORTH, MANAGER OF INFECTION PREVENTION, EMORY UNIVERSITY HOSPITAL MIDTOWN.

VOICE

DEPARTMENTS

PREVENTION IN ACTION

We will overcome!

BY CONNIE STEED

FALL IS IN the air, and COVID-19 remains in the forefront of the day-to-day work of infection preventionists (IPs). Can you believe it? All of us are staying the course of this pandemic as we continue to face challenges and our resourcefulness and spirit are tested. We will overcome!

I continue to hear from many of you and admire your resilience. IPs are determined, but tired. APIC leadership is listening to your need for additional opportunities to discuss and share ideas about COVID-19 prevention and control. The COVID-19 Task Force is facilitating webinars to address the latest challenges. Visit **apic.org/apic-covid-19-task-force** to see the list of webinars and links to archived recordings. APIC also collaborated with the Mount Sinai Center for Stress, Resilience, and Personal Growth for a webinar on Fostering Resilience in Healthcare Workers Affected by the COVID-19 Pandemic: A Focus on the Infection Preventionist. In addition, APIC is presenting a series that focuses on your mental health and well-being. Please check the APIC webinars page (**webinars.apic.org**) and home page (**apic.org**) for more information on these opportunities to connect with APIC members around these issues.

This issue of *Prevention Strategist* provides several COVID-19 features, including an article on how COVID-19 has affected IPs and infection prevention and control practice in various healthcare settings across the continuum (page 42). Two additional articles focus on IPs working with the emergency department during the pandemic (page 48) and how a long-term acute care facility maintains patient and staff safety while supporting the patient-family relationships that are crucial to patient recovery (page 52).

What about your story? APIC wants to hear from IPs like you, who are working diligently to get your place of work through this global pandemic. APIC is collecting photographs and videos to tell the story of COVID-19. The submissions are being featured on our website—look for the link on the APIC homepage. I encourage you to become part of the APIC tapestry of diverse, unique experiences of IPs. Each of us has a valuable perspective to share. Learn more at **apic.org/your-ip-stories**.

Our APIC Heroes of Infection Prevention are also profiled in this issue (page 14). This award recognizes APIC members and infection prevention and control teams who have successfully applied best practices and adapted to the evolving healthcare system and advances in the field of infection prevention. I look forward to reading their stories and learning from their examples.

With COVID-19 still ever present and flu season joining the mix, let's reflect on successes and prepare for the battle to come. All IPs are heroes—think of the lives saved and the lessons learned. WE WILL OVERCOME!

Sincerely yours,

Connie Steed

Connie Steed, MSN, RN, CIC, FAPIC
2020 APIC President

Prevention *strategist*

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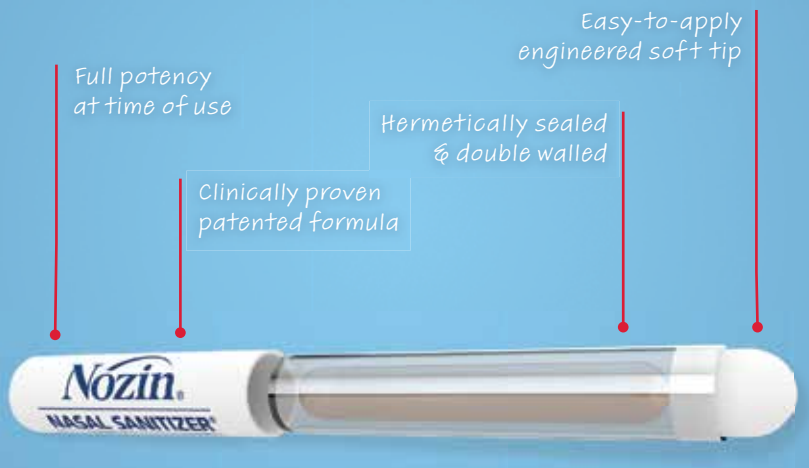
Anatomy of the #1 Daily Nasal Decolonizer



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Holding steady while looking forward

BY LINDA GOSS

THROUGHOUT THIS PANDEMIC, I have found myself on more than one occasion shaking my head and stating, "It's only Tuesday." This feeling underscores the tremendous toll that the pandemic has taken on those who work in the healthcare industry and the community that supports it. After these moments of self-awareness, I eventually seek composure and continue to work for the better of the patients and employees who we serve as infection preventionists (IPs). However, I acknowledge that self-awareness has not always led to self-care. My wish for you as we move into fall is to stay focused on your own health while diligently working to improve public health.

The show does go on

As the seasons change, I, as this year's CBIC president, along with the CBIC Board and staff, continue to work to ensure support for the successful steps we've been taking to offer innovative methods for certification and recertification. This pandemic has not dampened the exciting launches of the entry-level Associate–Infection Prevention and Control (a-IPC) exam and the portal for entering Infection Prevention Units (IPUs) for those who are recertifying via continuing education. Additionally, the Practice Analysis survey of infection prevention and control (IPC) practitioners around the world has been released, and we eagerly await the responses.

CBIC staff, like many others, have worked remotely and have not let this affect their work ethic. I want to recognize them for their efforts to keep the CBIC initiatives on track.

Excitement for the CIC® and a-IPC designations

Fall is upon us and brings with it a sense of accomplishment for the CBIC Board. Since we implemented recertification by IPUs at the beginning of the year, many of our CICs have already submitted their portfolios along with questions, insights, and support for this new recertification pathway. I am confident that recertification by IPUs will only continue to grow, and we will recognize a shift in offered educational activities and a renewed focus in domain-specific content. The possibilities are endless!

July saw the launch of our new entry-level a-IPC exam, and now that beta testing is complete, we are happy to announce that CBIC is accepting applications to sit for the exam. We are also excited to announce that we already have a few a-IPCs currently practicing in their chosen fields, and we could not be happier for them. I highly encourage anyone who is considering a career path in IPC or wants to test their knowledge in light of COVID-19 to apply.

Next on our agenda is IDWeek in October. Even though this event will be virtual, CBIC will still be there, so please stop by our exhibit booth. We may not see you in person, but we will still be supporting the IPC profession. Please review our website (CBIC.org) for the latest information regarding this event.

> "My wish for you as we move into fall is to stay focused on your own health while diligently working to improve public health."

CBIC's progress and commitment to IPC

While the impact of COVID-19 has altered deadlines, we have managed to stay true to our mission and released the Practice Analysis survey. CBIC is committed to performing a Practice Analysis every four to five years to ensure that the CIC examination accurately reflects the responsibilities and expectations of those working in IPC, and to take stock of what updates may need to occur. We will soon be looking over the survey responses and are eager to share the results.

I want to thank you all again for the tireless work you have been doing. I am confident that we can get through 2020 together and keep the strength and momentum of our specialty going. I look forward to hearing your voices in the Practice Analysis survey and wish you all well.

With appreciation and gratitude,

Linda Goss

Linda Goss, DNP, BS, APRN, ANP-BC, COHN-S, CIC, FAPIC
2020 CBIC President

CBIC® Certification Board of Infection Control and Epidemiology, Inc.

Prevention *strategist*

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MANAGING EDITOR
Elizabeth Nishiura

CONTRIBUTING EDITORS
Elizabeth Garman, CAE
egarman@apic.org

Elizabeth Haberkorn
ehaberkorn@apic.org

PROJECT MANAGER
Russell Underwood
runderwood@naylor.com

ADVERTISING
Brian Agnes
bagnes@naylor.com

GRAPHIC DESIGN
Sunny Goel

MISSION

APIC is creating a safer world through the prevention of infection. APIC's nearly 16,000 members develop and direct infection prevention and control programs that save lives and improve the bottom line for healthcare facilities. APIC advances its mission through patient safety, education, implementation science, competencies and certification, advocacy, and data standardization. Visit us at www.apic.org.

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Congratulations to the 2020 APIC Fellows!

The APIC Fellows Program recognizes exemplary APIC members with status as a Fellow of the Association for Professionals in Infection Control and Epidemiology (FAPIC). Fellow of APIC status is a distinction of honor for infection preventionists who are not only advanced practitioners of infection prevention practice but also leaders within the field. To learn more about the APIC Fellows program, visit **apic.org/professional-practice/apic-fellows**.

Khaled Alnafee, MA, CPHIMS, CPHQ, M(ASCP), CIC, FAPIC
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Tamara Behm, MSN, RN, CIC, FAPIC
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Nicole Spencer Bryan, MPH, CPH, CIC, FAPIC
Susan Bridwell Cali, MSN, RN, MHA, CIC, FAPIC
Mayra Castillo, MPH, RN, CIC, FAPIC
Shannon Davila, MSN, RN, CIC, CPHQ, FAPIC
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Brenda Ehlert, MBA, CIC, FAPIC
Susan Fletcher-Gutowski, MS, BSMT, CFPH, CIC, FAPIC
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Mona Foda Salama, MBBCH, MSc, PHD, D(ABMM), FCCM, CIC, dip(RCPath), FAPIC
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Matthew E. Weissenbach, DrPH, CPH, CIC, FAPIC
Shane Zelencik, MPH, CIC, FAPIC

International Infection Prevention Week: October 18-24, 2020

We Love IPs: Collaborating to Protect Communities from COVID-19

2020 has been no ordinary year, that is for sure. What is also certain is that infection preventionists (IPs) are no ordinary professionals. When we first got word about the novel coronavirus, IPs went on high alert, activating emergency plans, sourcing personal protective equipment, and running drills. As COVID-19 crisscrossed the country, IPs stepped up, leading teams, managing shortages, interpreting guidance changes, and generally making the best of a bad situation—often without thanks or acknowledgment from colleagues or administrative leaders. You are unsung heroes, often under siege, doing battle. Every. Single. Day.

So, International Infection Prevention Week (IIPW), October 18-24, 2020 will celebrate *you*—our wonderful IPs—for your extraordinary role protecting patients and healthcare workers during COVID-19. APIC is planning engaging social media activities, IP takeovers of APIC's Instagram account, and "We Love IPs" memes and other social media shareables. We will continue to promote the COVID-19 IP stories that have been shared to raise awareness of the IP's role and contributions during the pandemic. And the IIPW store will be stocked with "We Love IPs" merchandise for the whole family. Keep an eye out for updates in *eNews* and on the *Infection Prevention and You* website: **professionals.site.apic.org**.

APIC will also continue to educate the public on COVID-19, sharing factsheets and expert resources on ways to stay well.

Be social with @APIC!

- Twitter: **twitter.com/apic**
- Facebook: **facebook.com/APICInfectionPreventionandYou**
- Instagram: **instagram.com/apic_infection_prevention**

Share APIC's prewritten posts and make sure to include **#IIPW** and **@APIC** in your posts.

Share your COVID-19 story with APIC

APIC is collecting videos and photographs to tell the story of IPs during the time of COVID-19. We will share the submissions via multiple channels, including a video wall on our website. Everyone's experience being an IP during the COVID-19 pandemic is different, and we want to hear yours! Visit **apic.org/your-ip-stories** to learn more.

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Celebrate the passion, dedication, and determination of IPs during this year's International Infection Prevention Week.

We honor you this week for your leadership, perseverance, and resilience. You are protecting those on the front lines and around the world from COVID-19. *Thank you.*

INTERNATIONAL
infection prevention week
October 18–24, 2020

APIC

Learn more at:

apic.org/iipw

Meet the 2020 Heroes of Infection Prevention

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

Exemplary leadership unifies infection prevention across healthcare system

Brenda Ehlert, BS, MT(ASCP), MBA, CIC,
Ascension Wisconsin, Oshkosh

When Ascension Wisconsin (AW) integrated four healthcare systems as one, Brenda Ehlert's vision and collaborative approach united the organizations' multiple, independent, and diverse infection prevention and control (IPC) programs. Her leadership generated a standardized, outcomes-driven IPC program that has dramatically reduced healthcare-associated infections (HAIs) across the AW system.

As the director of infection prevention for AW—which comprises 24 hospital campuses and more than 100 clinics—Ehlert is the matrix leader for 14 infection preventionists. "As soon as we came together as Ascension Wisconsin, I made a commitment to meet each of them in person," Ehlert said. "I wanted to tell them this was their program. This was *our* program."

To standardize practice and optimize resources across the market, leaders formed an infection prevention council that includes representatives from all four legacy healthcare systems. This outcomes-driven group guides development, prioritization, implementation, and measurement of HAI reduction across AW, and they work to ensure the organization aligns with Ascension's national guidelines. Within the council, work groups address specific HAIs, assigning leads from across the market to spur ownership, accountability, and creativity.

"We focused first on creating a hand hygiene policy for the market, and it took us six months to complete," Ehlert said. "We all knew standardization was essential, but we didn't realize all of the nuts and bolts that would go into it. After the first policy though, we got much faster."

Ehlert's leadership—along with the committed work of the council—has resulted in consistent reductions in multiple HAIs across the AW system. The AW team's work has also supported Ascension's national program targeting best practices for standardization.

"COVID-19 showed us the value of standardization and the success of our efforts," Ehlert said. "We were able to share staff across facilities and implement consistent protocols."

Pioneering new IPC technology

Westchester Medical Center IPC Team
Valhalla, NY
Sophie Labrecque, MSc, RN, CIC
Lynda Mack, MSN, RN, CCRN, CIC
Moira Quinn, BSN, RN, CIC
Georgetta Rinck, MPH, RN, CIC
Teresa Rowland, BSN, RN
Rita Sussner, BSN, RN, CIC

The Westchester Medical Center (WMC) IPC team adopted and integrated a first-of-its-kind IPC technology, leading the way for transformation of current IPC surveillance and practice.

Responding to a request from New York Medical College, the WMC team provided patient samples to fuel development of the first adaptive-intelligence, genomic-based platform for identifying and mitigating HAIs. Once the tool was created, the team worked diligently to integrate it into the IPC workflow at their 652-bed network hospital.

"This visionary team was the first to advance genomics for pathogen monitoring from the research world into real-world IPC practice," said Mary M. Fortunato-Habib, an APIC member and clinical director at Philips Medical Systems, which supported the app development. "They've also benefited the entire infection prevention field by disseminating their knowledge through publications and presentations."

The new app looks at culture isolates genetically, compares them consistently across time and hospital location, and alerts staff to any possible clusters. Users can, as the WMC team did, apply the genomic analysis to assess potential transmission routes and explore underlying causes through analysis and investigation.

"It's very difficult to realize there's a cluster in your facility if you're not looking for it," said Rita Sussner, WMC's director of infection control.

"This tool helps us see the facility as a whole to identify patterns."

Integrating the new app into the existing hospital IT system and workflows required a multidisciplinary approach, many hours, and an education in pathogen genomics.

"We had to learn what it means to look at these organisms genetically. It was a different way of thinking," Sussner said. "We were excited, though, to know more about our infection clusters. And this tool really helps validate our team's work and the importance of our interventions."

Collaboration transforms a hospital's IPC culture

Northside Hospital—Gwinnett Medical Center
Lawrenceville, GA
Charles Ash, BSMT(ASCP)^{CM} MBA, CIC
Nicole Bryan, MPH, CPH, CIC, FAPIC
Trudy Cannon, BS
Darlene Carey, DNP, RN, CIC, NE-BC, FAPIC
Cinnamon Compton, MSN, RN, CIC
Shylanda Neal, MSN, RN, CIC
Kaleb Price, MPH, MT(ASCP)^{CM}, CIC

Stepping into a facility with no IPC leadership and a history of HAI penalties, the IPC team at Northside Hospital—Gwinnett Medical Center dramatically increased understanding about the integral role of infection prevention across their facility and decreased HAIs.

As the new leader for the IPC department, Darlene Carey consciously built a diverse team of professionals who could help transform the perception of infection prevention at the 553-bed hospital. "Initially, the first reaction when we were on a floor was always, 'What did we do wrong?'" Carey said. "Our team's approach was, 'I'm just here to see if I can help. I'll be here every day.' We all positioned ourselves as readily available resources to support staff and help them find areas for improvement."

The new team launched an HAI prevention committee with involvement from partners across the facility. The committee identified actionable items and processes for implementation and follow-up. As they helped staff address priority HAIs, the IPC team focused on creating a collaborative mindset and approach.

The team also engenders trust by evaluating the impact of new IPC projects before launching them. "We consider how departments will be impacted and work out the kinks first,"

Charles Ash said. "We also do what we can to avoid adding to their already heavy loads."

Over three years, the team created meaningful changes, including significant decreases in both the overall number of HAIs and the standardized infection ratio. "Additionally, the trust and collaboration we've built throughout the system have contributed greatly to sustained progress," Carey said.

Networking and collaboration suppress national outbreak

Kelly West, MS, RN, CIC
Children's Hospital Colorado
Aurora, CO

Craig Gilliam, BSMT, CIC, FAPIC
St Jude Children's Research Hospital
Memphis, TN

Kelly West and Craig Gilliam partnered to identify, investigate, and help address a *Serratia marcescens* outbreak, despite their facilities being more than 1,000 miles apart.

In early 2018, four blood cultures at Children's Hospital Colorado (CHCO) tested positive for *S. marcescens*. "It was notable because we typically see one to three positive cultures a year, and we had two in January alone," West said.

West initiated an investigation at her facility and took to her pediatric IPC network to alert others. This included posting to a Children's Hospital Association listserv for IPC directors.

"Kelly and her team are well known for discovering clusters and outbreaks, so her note piqued my interest," Gilliam said. Recalling a recent *S. marcescens* case at his facility, Gilliam reviewed St. Jude's data and, after discovering a total of three recent cases, immediately connected with West. Genomic typing showed that the bacteria at Gilliam's Tennessee-based facility and CHCO matched.

By systematically cross-referencing the products used by infected patients at both facilities, West and Gilliam identified prefilled heparin syringes as the likely culprit. They worked with their internal teams to pull the syringes, partnered with state health departments, and engaged the Centers for Disease Control and Prevention to address the problem nationally.


Kelly West


Craig Gilliam

"The keen skills of these two infection preventionists and their stellar outbreak investigation provided the data necessary for federal partners to initiate a product recall," Susan Dolan, RN, MS, CIC, FAPIC, of CHCO said.

For their part, West and Gilliam emphasize the importance of external networking and collaboration. "Without the ability to reach out to trusted colleagues nationally, I don't know that the pieces of this outbreak would have been put together," West said.

Driving culture change and improvement through relationships

Emory University Hospital Midtown
Atlanta, GA
Paul Gentile, MPH, CIC
Jill Holdsworth, MS, CIC, FAPIC, NREMT, CRCST
Aaron Preston, RN, BSN, CIC
Patty Rider, MEd, CIC, CPHQ
Winta Yallew, MPH

The infection prevention team at Emory University Hospital Midtown leveraged their diverse, complementary expertise and commitment to relationship-building to enhance perception of the IPC function at their facility and reduce HAI rates.

Two years ago, the newly restructured Emory University Hospital Midtown IPC team set a goal to increase both their visibility and their partnership with the hospital's clinical units. "We needed to change perception of the IPC function and be viewed as partners," infection prevention manager Jill Holdsworth said.

Building a strong relationship within the IPC team was paramount." As the first non-nurse infection preventionist at Emory, Holdsworth saw value in a diverse IPC team and sought candidates with a variety of backgrounds. All team members participated in interviews to ensure new hires would be a good fit, and the resulting team works exceptionally well together.

This relationship-focused approach was applied to the broader organization as well. The IPC team conducts daily rounding on all units, actively engaging with frontline team members. "You need to be on the floor every day, even if it's just for staff to see you," Paul Gentile said.

The team created an HAI-focused multidisciplinary steering committee with IPC team members and nurses coleading specific HAI reduction groups. These groups develop and implement standardized, apparent-cause HAI analysis templates to identify common failure modes and implement corresponding, targeted interventions.

Over the past two years, Emory Midtown has achieved significant HAI reductions, including a 50% decrease in catheter-associated urinary tract infections. Importantly, the organizational perspective on the IPC function has also improved significantly.

"This team changed the entire culture of how the hospital views the IPC program," Emory Healthcare's infection prevention program director, Kari Love, said.

Multidisciplinary engagement changes culture

Regions Hospital
Saint Paul, MN
Molly Bisciglia, MLS(ASCP)CM
Dan Cates, MPH, CIC
Annette Lund, RN, BSN, CIC
Cindy Montgomery
Boyd Wilson, MT(ASCP)CM, MS, CIC, FAPIC
Brie Zurn, RN, BSN

The Regions Hospital infection prevention team created an integrated, multidisciplinary IPC program that has generated sustained infection reductions, as well as system-wide cultural change.

In 2015, as part of a broad Regions Hospital improvement effort, the infection prevention team at this large, safety-net facility launched a comprehensive program to reduce *Clostridioides difficile (C. diff)* HAI rates.

"We knew we wanted a multidisciplinary team," Boyd Wilson, director of infection prevention and control, said. "It ensured a well-rounded approach informed by the necessary expertise."

Following a gap analysis and literature and guidelines review, the *C. diff* prevention team focused their efforts on environmental cleaning and disinfection, as well as determining when *C. diff* testing is appropriate. The hospital's environmental services (EVS) director was appointed as the project's process owner. "This unique approach helped create a different level of engagement and accountability," Wilson said.

Over the next 33 months, the team systematically implemented tactics to reduce environmental *C. diff* exposure, including nurse, provider, and EVS staff education; a patient safety risk dashboard; and a regular report for nurse managers.

On the testing front, the team revised protocols, initiated ongoing staff education, and adjusted nursing workflow, including the introduction of a two-nurse review process for specimen collection. IT staff modified the

hospital's electronic health records system to support appropriate test ordering.

The team reviewed compliance and process improvement at weekly meetings, guided partly by multidisciplinary case reviews.

From 2015 through 2018, the *C. diff* HAI rates declined 46%, and unnecessary or inappropriate testing declined 53%.

"We've improved the quality and safety of our care and created a sustainable support system for staff to follow best practices," Wilson said. PS

No typical days during the pandemic

A CONVERSATION WITH KIM STRELCZYK

KIM STRELCZYK, MSN, APRN, FAPIC, CIC, has 27 years of experience in infection prevention and control. She has worked with all sizes of hospitals in multiple states and is currently part of a group of APIC consultants working on behalf of a large state department of health. Kim earned her master of science in nursing as a clinical nurse specialist from Texas Christian University.

Kim has published extensively on her work managing outbreaks caused by multidrug-resistant organisms; making infection prevention program improvements in hospitals; and meeting regulatory and accrediting requirements for infection prevention. She is passionate about education and played a key role in the development of the Education for the Prevention of Infection (EPI®) training courses offered by APIC for novice infection preventionists. Kim is actively involved in APIC at the local level, having served as president of the Dallas-Fort Worth Chapter. Under her leadership, the chapter was twice granted the APIC Chapter of the Year designation. She also served the association at the national level as a board director, chair of the National Education Committee, and an APIC liaison to the Certification Board of Infection Control.

Tell us what an average day is like when working on COVID-19 prevention and control.

Unfortunately, there has not been a typical day. The work began with responding to outbreaks, then moved to proactive work with assisted living facilities, then back to outbreak response as the control measures failed (or were relaxed) throughout the state. However, any given day might contain all the following:

- Planning calls with our regional EPI coordinator, regulatory surveyors, and the facility to schedule onsite assessments.
- Weekly calls with the state department of health and with the Centers for Disease Control and Prevention (CDC).
- Review of updates to guidance from CDC, Health and Human Services, Centers for Medicare & Medicaid Services (CMS), and others. (In the beginning of the pandemic, this happened daily!)
- Driving to the various facilities: My longest trip was 177 miles one way; the shortest was 12 miles.
- On-site assessments. It generally takes two hours to assess just the basics covered on the CDC Infection Control Assessment and Response tool. Larger facilities take much longer, naturally.
- Creating tools for use in educating "strike teams" commissioned by the governor to conduct rapid-response on-site assessments proactively, and then actually conducting the education.

What trends are you seeing in long-term care (LTC) facilities regarding COVID-19 prevention and control?

Unlike most hospitals, nursing facilities (NFs) have not had the luxury of a full-time infection preventionist with expertise in the field to develop and oversee a coordinated program to prevent infections. Only recently has CMS

mandated such a position in NFs, including training in the role. We are finding that even the surveyors are not aware of all the things they should be looking for in prevention measures. Some of our common findings include:

- Personnel hold a deep-rooted belief that hand hygiene must be done only with soap and water, not alcohol-based hand sanitizer.
- Personnel assume that all waste in rooms with suspected or confirmed COVID exposure must be discarded as biohazards.
- Linens and equipment are discarded after use in the COVID unit instead of being properly cleaned, disinfected, or sanitized for reuse.
- Adhesive residue (from tape labels) is left on many pieces of equipment, especially water pitchers that travel around on all medication carts.
- Woven cloth gait belts are reused from resident to resident with no disinfection.
- Glucometers are soiled with blood.
- Kitchen staff are unfamiliar with proper chemical dilution for sanitizers.
- Facilities stock and use ineffective chemical disinfectants for SARS-CoV-2 (or use no disinfectant at all).
- Shortages of personal protective equipment (PPE) lead to frequent product changes with no education for staff of how to properly don/doff.

Is there a piece of advice that you would give to LTC facilities for the remainder of this pandemic?

The most important thing LTC facilities can do is focus on the basics of infection prevention. Keeping an eye on adherence to hand hygiene, proper use of PPE, and cleaning and disinfection will provide a solid barrier to disease transmission in their facilities.

How can LTC facilities best prepare?

None of us really know what to expect in the future with regard to COVID-19, as we know so little about the virus. My hope is that the predictions of a possible resurgence of the pandemic during the flu season does not happen.

In terms of the regulatory climate, I believe an enhanced understanding of how unprepared NFs are for outbreaks such as COVID-19 will lead to stronger emphasis on infection prevention in surveys. PS

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[1]**Assessment of an innovative antimicrobial surface disinfectant in the operating room environment using adenosine triphosphate bioluminescence assay.** Lewis, B. J., Spencer, M., Rossi, P. J., et al. Am J Infect Control, Vol 43, p283-285.

[2]**Assessment of a novel antimicrobial surface disinfectant on inert surfaces in the intensive care unit environment using ATP-bioluminesence assay.** Edmiston, C. E., Spencer, M., Lewis, B. D., et al. Am J Infect Control.

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Pathogen (10 minute contact time): *Swine Influenza virus (H1N1) ATCC VR 99, **Salmonella enterica ATCC 10708, **Escherichia-Coli O157: H7 ATCC 35150, **Staphylococcus aureus ATCC 6538, **Listeria Monocytogenes ATCC 19111, **Staphylococcus aureus MRSA ATCC 33591, **Pseudomonas aeruginosa, [1]Block, M. S., & Rowan, B. G. (2020). Hypochlorous Acid: A Review. *Journal of oral and maxillofacial surgery: official journal of the American Association of Oral and Maxillofacial Surgeons.* *Studies are not GLP-compliant and have not been reviewed or approved by EPA.*

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Emeritus Professor of Surgery, Medical College of Wisconsin

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A conversation with an infection preventionist

JACLYN FOSNACHT

JACLYN FOSNACHT, MPH, CIC, has been an infection preventionist (IP) since November 2015 and obtained her Certification in Infection Control (CIC®) in fall 2017. She has a bachelor's degree in health science with a minor in business administration and a master of public health degree with a concentration in epidemiology from the University of Florida. Jaclyn is currently an IP at the University of Florida Health Shands Hospital in Gainesville.

What inspired you to become an infection preventionist?

I became inspired to work in the field when I learned about epidemiology and infection control in an undergraduate class about different health professions. Epidemiology and infection control are both broad fields and are growing rapidly as reporting requirements increase, as there is a larger focus on disease prevention, and as our society becomes more globally connected. I volunteered during undergrad at my local health department and in different healthcare settings, which led me to pursue a career as a hospital IP.

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

The challenge I had five years ago was getting a job as an infection prevention and control (IPC) practitioner with an MPH and no job experience. I had internship experience, but I did not have the two to four years of IPC experience most hospital IP positions required.

I feel blessed to have been given a chance to work under a great director who was willing to change the job description and hire an MPH instead of an RN when I first started out. Over the last few years, I have seen the IPC world becoming more accepting of individuals without the traditional nursing degree when pursuing positions in IPC.

How has your background helped you in the IPC profession?

My background in epidemiology has helped me in many ways. I use my critical thinking skills when investigating possible sources or causes of healthcare-associated infections. I can then help create action plans to prevent future infections.

Understanding microbiology and statistics has also helped me as an IP. Knowing where pathogens are normally found, their ability to cause an infection, and coming up with possible causes of infection in the hospital is something that I have to do on a regular basis. Having a background in statistical analysis has helped me create spreadsheets and analyze trends in order to track infections, devices, and surgical outcomes.

What advice do you have for others who are new to the field or considering the field of IPC?

I want those who are new to the field to know that it will take a couple years until you feel comfortable in your role. You may not always have the answer, but you can always say "let me get back to you." You may have to do some research or call a fellow IP for advice. This role is so broad—you will have some oversight in almost every department of the hospital, and it is nearly impossible to know everything about each of these departments. Create a folder on your computer for guidelines so you can reference it when questions arise.

What is the most rewarding experience you have had as an IP?

My most rewarding experience as an IP was helping a Panama City hospital in 2018, after Hurricane Michael. I was called upon to assist a hospital and did not know where I would be staying, how long I would be there, or what my job duties would be. I took the challenge, and during my first drive, I realized the devastation this storm had caused and wondered what condition the hospital would be in. Luckily, there was enough structure standing that the facility could be remediated and reconstructed. My duties included reporting communicable diseases to the health department, creating infection control risk assessments, rounding on construction and patient care areas, and because it was flu season, making flu shots available to staff. That experience is something I will never forget.

What advice do you have for those studying for the CIC?

I used the APIC Study Guide and reviewed chapters of the APIC Text that referred to topics I did not use as frequently in my role, such as occupational health exposures (our occupational health department takes care of those issues). I answered many practice questions to be exposed to the question style and types of questions asked on the exam. I also followed the CBIC Facebook page to see past exam questions. PS

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1 Degala S, McGinley CM II, Thurmond KB, inventors; CareFusion 2200 Inc, assignee. Systems, methods, and devices for sterilizing antiseptic solutions. US patent 9,078,934. July 14, 2015.

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The APIC Text, COVID-19, and the continuum of care

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BY RAQUEL WOJNAR

ANYONE WHO HAS sought medical care in the midst of the COVID-19 pandemic has likely received a quick introduction to infection prevention and control (IPC). My most recent venture was taking my 20-month-old son, Lucas, for a state-mandated hearing test, which was required after he spent a brief stint in intensive care as a newborn. (Yes, I was a little late!) In addition to the ubiquitous hand sanitizer and "face coverings mandatory" signage, the ear, nose, and throat clinic greeted us with forehead temperature checks and questionnaires about previous virus testing and travel history. In the waiting room, taped Xs on the carpet told us where we could sit; chairs too close together were barricaded with jumper cables. A few months earlier, at Lucas's well-check appointment (when COVID-19 had just started to become a serious concern in the United States), the pediatrician's office kindly asked either my husband or me to leave, allowing only one parent inside. I drew the short straw and puttered around the parking lot, texting my husband questions about ear infections and eating habits. A physician wearing what looked like a scuba mask carried his lunch back into the office.

It's not a reach to say that COVID-19 has impacted how IPC is practiced across the continuum of care. Those of us who are part of the APIC Text team are working to address these changes quickly and carefully so we can offer our readers the information they need, no matter which environment they work in.

In a time when so much about this virus is still unknown, guidelines and regulations are continuously in flux, and infection preventionists (IPs) are busier than ever before, keeping the APIC Text up to date has proved to be a challenging but critical endeavor, a tricky balancing act between moving too quickly and not moving fast enough. Thankfully, we have a fantastic group of clinical editors and authors who've supported this effort, even as they've worked overtime at their facilities and faced incredible professional challenges. For this, we owe them an incredible debt of gratitude.

Upcoming chapter updates address IPC all along the care continuum. Coming soon is an update on dental services, for which COVID-19 has been a game changer. The Standard Precautions; Surveillance; Outbreak Investigations; and Cleaning, Disinfection and Sterilization chapters have also become priorities in the wake of the epidemic, as have our chapters on childcare services and correctional facilities, and we're working to get them revised as soon as possible.

We're also planning to bring you a brand-new chapter dedicated to COVID-19. Written by Ericka Kalp, epidemiologist and program manager for Healthcare-Associated Infection Prevention/Antimicrobial Stewardship at the Pennsylvania Department of Health, the chapter will provide facility-specific considerations for IPs working in acute care, long-term care, home health, dialysis centers, and schools/universities/daycares. This will become the APIC Text's 125th chapter and our first new chapter since we published Antimicrobial Stewardship Programs last year.

All APIC Text content updates go through multiple rounds of peer review, fueled mainly by our clinical editors. We're in the midst of onboarding new editors to help support this process, and we're reaching out to IPs to serve as authors. If you are interested in getting involved, we'd love to hear from you and explore how we can collaborate; please send your CV and areas of interest to me at rwojnar@apic.org.

Our goal is to ensure the APIC Text is an indispensable resource for your practice, for IPs seeking certification, and for everyone in IPC all along the care continuum—and your feedback and expertise can help us get there. Thank you for reading, and thank you for all your efforts in this incredible time. PS

Sincerely,
Raquel Wojnar
Senior Content Manager, APIC

The APIC Text has 124 chapters on all aspects of infection prevention and control practice. Browse the table of contents (and read free abstracts) at text.apic.org.

A HUGE THANK YOU TO THE FOLLOWING PEOPLE FOR THEIR EFFORTS ON BEHALF OF THE APIC TEXT DURING THE COVID-19 PANDEMIC:

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- Vicki Allen
- Mandy Bodily-Bartrum
- Lisa Caffery
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- Monika Pogorzelska-Maziarz
- Steve Schweon
- Barbara Smith

Authors:
- Kathleen Arias
- Corrianne Billings
- Mandy Bodily-Bartrum
- Angelia Bridges
- Christina Bronson-Lowe
- Daniel Bronson-Lowe
- Elizabeth Campbell
- Phil Carling
- Sarah Clock
- William E. Coll
- Rachael Dameron
- Lynn Eichhorn
- Carolyn Fiutem
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- Irena Kenneley
- Jennifer McCarty
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75,000 deaths occur annually in US hospitals due to HAIs

(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.[1] More than half of these occurred outside of the intensive care unit.

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Don't shoot the infection prevention messengers

BY LISA TOMLINSON, NANCY HAILPERN, RICHARD CAPPARELL, AND ABIGAIL RICHARDS

AS ADVOCATES FOR infection prevention, we often encounter a problem that sets us apart from other kinds of organizations. Many organizations must come up with ideas to focus public attention on their issues. However, APIC and other organizations promoting infection prevention issues have the opposite problem: Whether it is a new organism covered on the nightly news or a new way of addressing it in a news story, we have often received attention from politicians—but it is the wrong kind of attention. Instead of providing resources to scientifically address the issue, policymakers often want a quick fix, such as rapid introduction of specific reporting requirements or hastily written laws and regulations.

Infection preventionists are under fire

Faced with a global pandemic, this problem is bigger than ever. Everyone on our Facebook feed and in our grocery line, having been informed by the 24-hour news cycle, feels they are experts in infection control. Politicians are no different. To be fair, many are moved by the suffering and deaths caused by COVID-19, and they sincerely want to make a difference. They are also moved by the economic challenges faced by Americans who have lost their jobs or are working from home for long periods without help to care for their families.

Into this scientific and political fray step the infection preventionists (IPs). IPs must adapt to daily changes in guidance due to rapidly changing


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WAYS TO ENGAGE

As the voices of infection prevention, IPs must be heard during the COVID-19 pandemic. The following are some ways that APIC members can advocate on behalf of the profession, colleagues, and patients:

Join the Action eList: This is the best way to learn about the latest news and updates from government agencies, APIC, and Congress. Email legislation@apic.org to be added to the Action eList today.

Visit the APIC Action Center: Located at apic.org/TakeAction, the Action Center is the best place to find the latest messages you can send to Congress and state legislatures.

Meet with your legislators: The APIC Action Center has prewritten requests to meet with members of Congress and state legislatures. With many legislators meeting remotely via teleconferencing platforms, travel will be minimal and APIC staff can possibly join you.

Follow and share APIC social media content: Social media is a great way to share information about COVID-19 and ways to prevent its spread. However, we need your help spreading the message. Follow APIC on Facebook, Instagram, LinkedIn, and Twitter!

scientific evidence while working with understandably concerned healthcare personnel who are informed by the same 24-hour news cycle as the general public—including many stories that assert scientific certainty where it does not exist. Compounding the difficulties of this situation are the supply shortages caused by shortsighted preparedness planning. The resulting panic and anger are very real.

At work, IPs are messengers who must break through the "newspeak." They have to convince worried healthcare personnel who are drowning in half-truths and misinformation to apply the best evidence available at the moment to conserve the personal protective equipment on hand for those at greatest risk. This work is draining, it is unfair, and it is the reality faced by IPs during this pandemic.

Speaking the truth for the public good

Immersed in this world of half-truths and injustice, IPs and their allies hold these truths to be self-evident:

- Too many Americans are dying because of inadequate pandemic preparedness. We must plan better.
- The Centers for Disease Control and Prevention must continue to provide guidance based on the best scientific evidence available. They must be funded adequately to continue doing so.
- Healthcare is inadequately resourced to support infection prevention, and those who control the resources only pay attention to infection prevention during emergencies. Sufficient resources must be provided every day. Patients and healthcare workers deserve it.
- IPs who are certified are better prepared to apply the best scientific evidence in their facilities. We must continue to support certification.
- Settings like long-term care where people who are frail and sick are treated deserve an adequate infection prevention infrastructure. We must ensure that people and systems are in place to ensure safe care for long-term care residents.

When IPs advise their friends and family to stay home when possible, wash or sanitize their hands, maintain distance from others, and wear a mask in public, they speak up because they are infection control experts and their advice is based on evidence. But they also speak up because they care about their communities.

When IPs ask for funding for the infection prevention infrastructure in this nation, they do so for the same reasons. We will continue to share this message, and we hope you will join us. PS

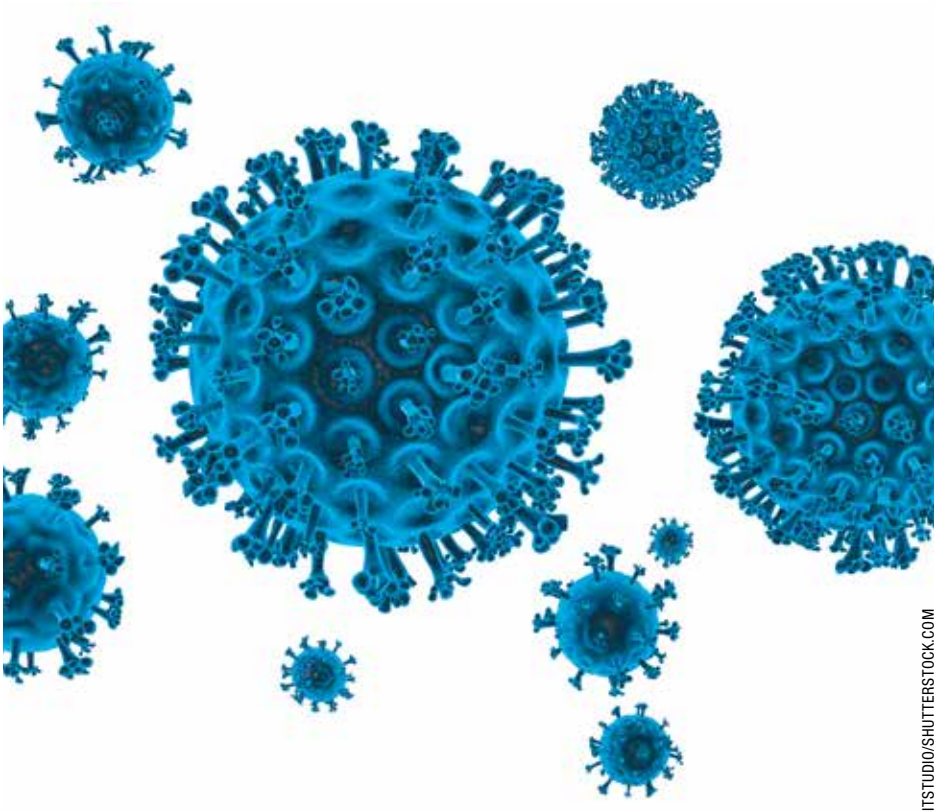
For information about infection prevention and control policies and regulations, the APIC Government Affairs team is available to assist you. Contact us at legislation@apic.org.

Focus on long-term care and behavioral health outbreaks
Identify the pathogen!

BY STEVEN SCHWEON

Hospital outbreaks are reported more often in the medical literature than occurrences in the long-term care (LTC) or behavioral health setting. By studying and learning from outbreaks in the LTC/behavioral health setting, infection preventionists (IPs) can glean additional knowledge and apply this information to hopefully prevent future infections and infection clusters in their facilities. This quarterly column helps the IP heighten awareness of appropriate interventions to prevent outbreaks.

Ishida and coauthors[1] discuss two nursing home residents who both had elevated aspartate aminotransaminase (AST) and alanine aminotransaminase (ALT) levels, with both liver function tests (LFTs) suggesting hepatic injury. The first resident, or index case, had an abdominal aortic aneurysm and complained of abdominal pain. The second resident experienced anorexia and fatigue with a suspected cerebral infarction. Both residents had positive IgA antibodies to a specific pathogen. Two other individuals demonstrated mild symptoms such as anorexia, abdominal pain, and fatigue. Serum samples for LFTs and antibody testing were then collected from 84 residents and 61 nursing home staff members.



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Infection was diagnosed in 29 individuals. Among them, 11 individuals had elevated LFT results, and 10 of the people in this group had positive IgA antibody results. Another 12 of the diagnosed individuals had normal LFTs and were positive for IgA antibodies. The final six diagnosed individuals had negative LFT and IgA antibody test results but were confirmed to be infected with this pathogen through additional testing.

Based on the clinical presentation and your knowledge of infectious diseases, you suspect infection with:

1. Hepatitis B virus
2. Hepatitis C virus
3. Hepatitis E virus
4. Norovirus

All the residents and staff also underwent additional IgG and IgM antibody and ribonucleic acid (RNA) testing for hepatitis E virus (HEV). A dietitian was among the six individuals whose infections were confirmed with this additional testing.

HEV infects the liver. Infection is most common in developing countries with inadequate water supplies and poor

environmental sanitation.[2] Infection is rare in the United States.

In the United States, HEV is transmitted by consumption of improperly cooked pork, venison, or boar meat; eating the meat exposes individuals to HEV RNA.[2] Consumption of raw or undercooked fish contaminated by human sewage has also been a source of infection.[3] Person-to-person transmission has been described but is thought to be a minor means of transmission.[4]

The incubation period ranges between 15 and 60 days after exposure.[2] Many people with HEV do not develop acute infection symptoms.[2] Symptoms, when they do occur, include fever, fatigue, loss of appetite, nausea, vomiting, and abdominal pain. HEV should be considered during a viral hepatitis episode when testing is negative for hepatitis A, hepatitis B, hepatitis C, other hepatotropic viruses, and other causes of acute liver injury.[3] Diagnosis is confirmed through HEV antibody and RNA testing.

HEV infection is self-limiting and resolves on its own. Most patients fully recover. However, infection during pregnancy can result in severe illness and death, and HEV infection can severely impact patients with chronic liver disease, as well as organ-transplant recipients on immunosuppressive therapy.

The authors[1] investigated the services provided at the nursing home, including interviews with the staff and residents, reviewing the physical structure of the building, analyzing food menus, and investigating the environment. Personal interviews with the residents were limited due to their advanced aged and mild to moderate cognitive impairment.

The kitchen and water supplies were in good condition and sanitary. Cutting boards and utensils were appropriately used and cleaned and disinfected after use. Cooking process records demonstrated the correct food-temperature range when measured centrally in the food item. An outside provider usually prepared all the meals, and there were no infection reports associated with this vendor. The residents consumed correctly cooked pork on several occasions. Of interest, locally purchased pork liver was served during the incubation period. Vinegar-prepared fish and sushi-style dishes were served. None of the six cooks tested positive for HEV infection. Infected residents were isolated to prevent additional transmission. There were no fatalities related to the infection.

The authors[1] believed a common source was responsible for the outbreak, identifying consumption of undercooked pork as the probable cause. All the infected residents were served meals in the nursing home. The detected viral RNA was 99.8% to 100% identical from the numerous blood samplings. Detection of the elevated IgA and IgM antibodies suggested simultaneous infections. Although the core-food cooking temperatures were acceptable, there was the possibility that some portions were undercooked.

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

KEY TAKE-AWAYS

- Hepatitis E virus infection is not a national notifiable condition,[5] but states may require reporting to the department of health. Additionally, outbreaks of any source may be reportable to the department of health, per facility policy.
- The Centers for Disease Control and Prevention state that patients with HEV infection should be managed with Standard Precautions, with Contract Precautions being implemented for diapered or incontinent individuals for the duration of illness.[6]
- The Food and Drug Administration has not a approved HEV vaccine, but a vaccine is available in China.[2]
- Topics for resident education to prevent infection include food and beverage safety (do not eat raw or undercooked pork or venison; do not drink unpurified water). Additional teaching can emphasize ensuring adequate rest, promoting healthy nutritional habits, avoiding alcohol, and using medications and supplements safely to minimize the risk of liver damage.

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SEROLOGIC TESTING FOR ANTIBODIES

Serologic tests for immune responses to a specific pathogen are reported in terms of total antibodies (all classes of immunoglobulins), or as a specific immunoglobulin (Ig) class of antibody (e.g., IgG, IgM). The immunoglobulin class of an antibody is helpful in determining if antibodies are present due to acute disease, or if the antibodies are detected because the patient is in the convalescent stage, or has immune memory of a prior exposure to a specific disease-causing pathogen.

During the primary immune response after communicable disease pathogen or vaccine is encountered, the class of antibody that is produced first is IgM. IgG antibodies develop a few weeks later and are a good indication of the convalescence period and generally mark the establishment of long-term immunity to the pathogen. The IgG antibody titer is the quantitative measure of antibody. An IgG-specific antibody titer may remain detectable for months, years, or for life. IgM antibodies to the specific pathogen wane over time and will become undetectable as the IgG antibody titer rises. The class of immunoglobulin called IgA is the predominant antibody of secretions but may also be present in serum and may occasionally be included in testing for some infectious diseases.

Reprinted from Chapter 4: Microbial immunology. In: Kulich PA, Taylor DL. The Infection Preventionist's Guide to the Lab. *Arlington, VA: Association for Professionals in Infection Control and Epidemiology; 2012:45.*

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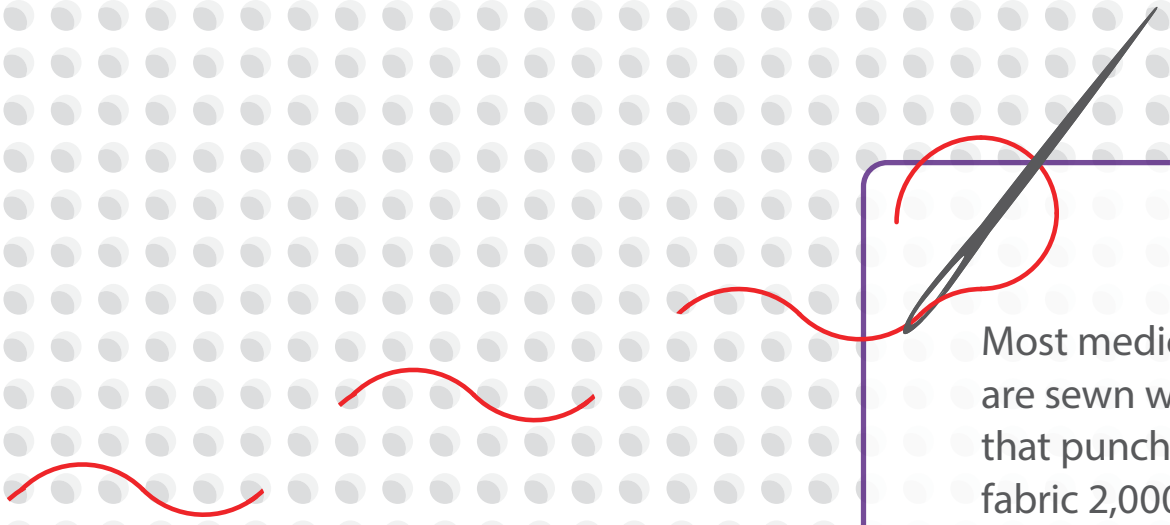

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Breaking the chain of COVID-19 infection

BY MAY MEI-SHENG RILEY

On December 31, 2019, China reported an outbreak of pneumonia cases associated with the Huanan Seafood Wholesale Market in Wuhan.[1] On January 7, 2020, Chinese health authorities confirmed that the causative organism was associated with a novel coronavirus, named 2019-nCoV.[2] On February 11, 2020, the World Health Organization officially renamed the virus responsible for this outbreak as severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and the disease it caused as coronavirus disease (COVID-19).[3] Since then, the infection has been spreading rapidly worldwide, including in the United States, where the first confirmed case of COVID-19 was reported on January 20, 2020.[4]

COVID-19 is an emerging, rapidly evolving situation. For the past several months, we have been pushing to quickly learn about this new organism and the associated infectious disease while treating many COVID-19 cases with severe complications and trying to prevent people from being infected. "Building the plane while flying it" might describe this situation.

A larger challenge is on the horizon: The upcoming influenza season will occur during an unresolved COVID-19 pandemic. Influenza viruses, SARS-CoV-2, and other seasonal respiratory viruses will all be cocirculating in our communities and may coinfect patients. Further complicating matters, many of the signs and symptoms of these infections are similar. It is now imperative to integrate what we have learned from this pandemic and strengthen infection prevention and control (IPC) strategies to stop SARS-CoV-2 transmission.

This article applies the basic IPC concept of the chain of infection. The goal is to illustrate IPC strategies based on various Centers for Disease Control and Prevention (CDC) guidelines that can break the chain of SARS-CoV-2 infection.

SARS-COV-2 INFECTION CHAIN

Microorganisms spread from person to person through a common series of events. As illustrated in Figure 1,[5] a chain of infection is composed of six components:

- Infectious agent
- Reservoir
- Portal of exit
- Mode of transmission
- Portal of entry
- Susceptible host

If these six components can link as a chain, an infection can occur. However, at any of these six points the chain can be broken, stopping infection. To prevent infectious organisms from spreading, we must implement proper IPC strategies to break the chain of infection.[5]

INFECTIOUS AGENT

SARS-CoV-2 is a subfamily of the larger *Coronaviridae* family and is an enveloped virus containing a positive-sense, single-stranded RNA.[6] This new virus belongs to the genus *Betacoronavirus*, which also includes SARS-CoV and MERS-CoV.

Based on CDC guidelines, microorganisms can be ranked from the most susceptible to most resistant as follows: enveloped (lipophilic) viruses (e.g., SARS-CoV-2) or medium-sized viruses (e.g., coronaviruses); vegetative bacteria (e.g., *Staphylococcus aureus, Acinetobacter*); fungi (e.g., *Candida, Trichophyton, Aspergillus*); non-enveloped or small viruses (e.g., norovirus, poliovirus, rhinovirus); mycobacteria (e.g., *Mycobacterium tuberculosis*); and spores (e.g., *Clostridioides difficile*).[7, 8] Therefore, SARS-CoV-2 is not hard to inactivate in the environment compared to other microorganisms.

When considering breaking the chain of infection at this point, the inevitable question for infection preventionists (IPs) is how to choose disinfectants that have SARS-CoV-2 effectiveness. U.S. public health authorities and regulatory agencies provide guidance on which products can be used to inactivate this emerging pathogen. Specifically, the Environmental Protection Agency (EPA) provides emerging viral pathogen guidance on the efficacy criteria for selection of disinfectants. The EPA website provides a "List N" of EPA-registered disinfectants effective against SARS-CoV-2 (**www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19**).

The basics of disinfectant selection criteria are:[7, 9, 10]

- A disinfectant must be EPA-approved as a hospital- or healthcare-facility-use disinfectant.
- The product must be a broad-spectrum disinfectant.
- The disinfectant must have an EPA-approved claim for at least one small or one large non-enveloped virus.

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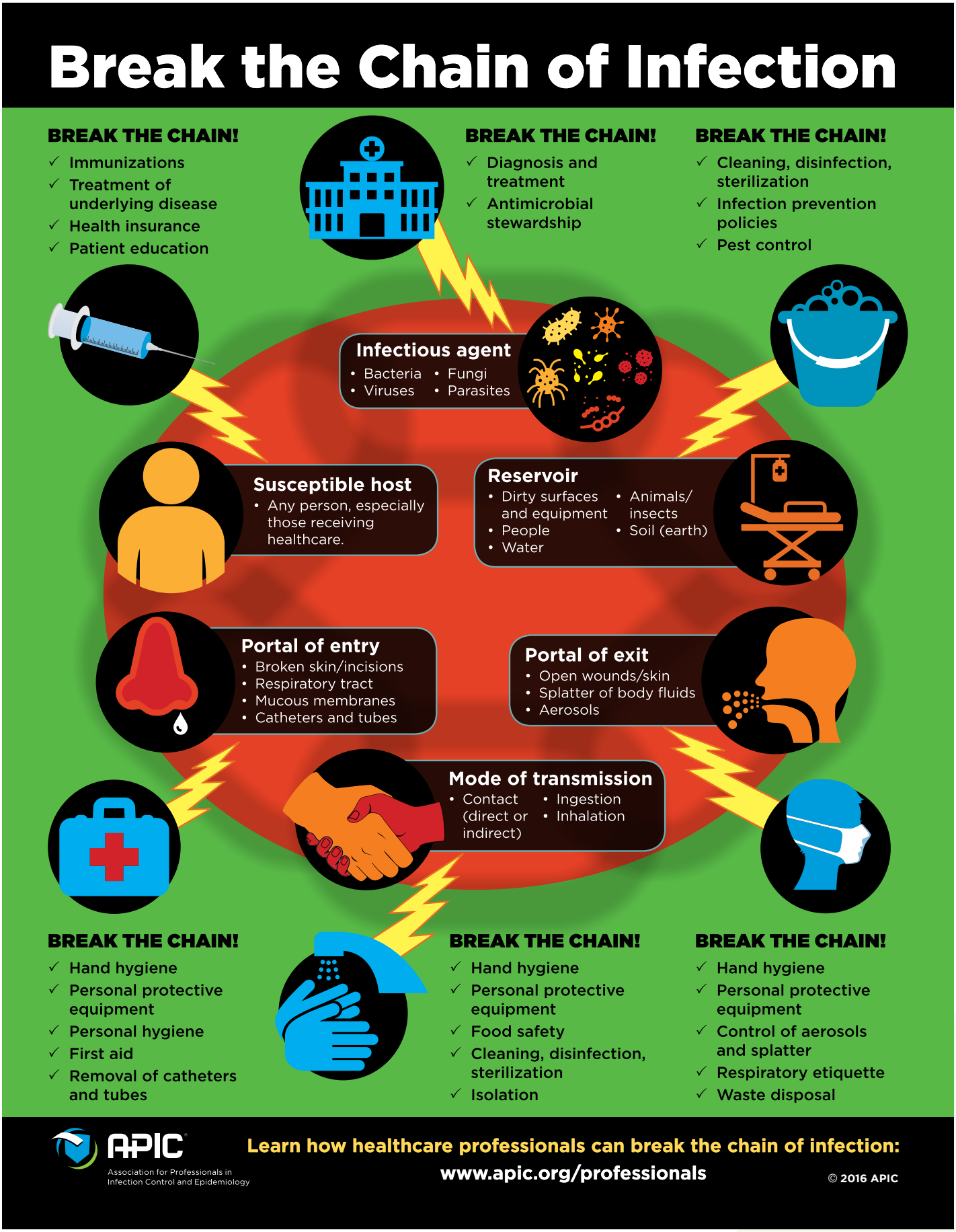
Figure 1



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- The EPA-approved master label must be specifically worded as to manufacturer claims regarding emerging pathogens.

IPC strategies to break the chain

- Promptly submit respiratory specimens to support early diagnosis to distinguish SARS-COV-2 from other respiratory viruses.[11, 12]
- Perform targeted SARS-CoV-2 screening for patients without signs or symptoms of COVID-19.
- Use safer techniques when collecting diagnostic respiratory specimens (e.g., nasopharyngeal or nasal swab) from a suspected SARS-CoV-2 patient:
  - Specimen collection should be performed in an examination room with the door closed.[11]
  - Specimen collection may be performed in outdoor settings, such as drive-through testing sites in tents or at the curbside.
  - Healthcare providers (HCPs) who perform specimen collection should wear N-95 respirators or equivalent or higher-level respirators (or facemasks, but only if respirators are not available), eye protection, gloves, and gowns.[11]
- Encourage early treatment.

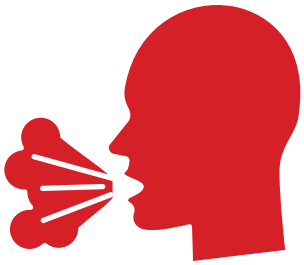
ART STUDIO G/SHUTTERSTOCK.COM

RESERVOIR

Bats are theorized to be the initial mammalian reservoir for SARS-CoV-2;[13] however, it is unclear how the virus jumped from animals to humans. Currently, the reservoir of SARS-COV-2 is infected people. Predominantly, the virus stays in the human respiratory tract or pulmonary system.[14] If inanimate objects are contaminated, these objects become fomites. Contaminated hands are the vehicles of transmission.

IPC strategies to break the chain[7, 11, 12]

- Use proper disinfectant to inactivate SARS-CoV-2. Select disinfectants with SARS-CoV-2 effectiveness by referring to the EPA's List N: Disinfectants for Use Against SARS-CoV-2 (COVID-19).[9]
- Ensure that HCPs use dedicated medical equipment and devices when caring for patients with suspected or confirmed SARS-CoV-2 infection.
- Clean and disinfect all shared, reusable medical equipment or devices used for patient care with proper disinfectant based on the manufacturer's instructions and healthcare facility policies.
- Verify that environmental cleaning and disinfection procedures are followed consistently and correctly.[7]
- Ensure routine cleaning and disinfection procedures are properly followed:
  - Use regular cleaners and water to pre-clean surfaces to remove visible soil (e.g., organic and inorganic material) prior to applying an EPA-registered, hospital-approved disinfectant to high-touch surfaces or objects with appropriate contact times, as indicated in the product's instructions.
  - Select an appropriate disinfectant with SARS-CoV-2 effectiveness in healthcare settings and COVID-19-patient care areas.
- Perform strict hand hygiene in accordance with the facility policy.[11]
  - Use alcohol-based hand rub with 60% to 95% alcohol in patient care settings.
  - Visibly soiled hands should be washed with soap and water for at least 20 seconds.
  - Also wash hands with soap and water for at least 20 seconds before eating and after using the restroom.



PORTAL OF EXIT

Symptomatic, presymptomatic, and asymptomatic individuals may transmit SARS-CoV-2, which mainly leaves the human reservoir through the mouth or nose via respiratory secretion, sputum, or saliva. However, questions remain about duration of virus shedding and how transmissibility might change as the disease progresses.

IPC strategies to break the chain[11]

- Control the source by implementing universal masking protocols:[11, 15]
- Protocol for the general public:
  - The CDC recommends that individuals wear cloth face coverings in public, or when social distancing is difficult to maintain, because such coverings provide a barrier to transmission via respiratory droplets.[15]
  - Masks with valves should be avoided because they do not provide good source control.
  - Cloth face coverings are most effective in slowing the spread of the virus when they are widely used by people in public spaces.
- HCP protocol:
  - Cloth face coverings are not recommended for use in patient care areas.
  - Implement a universal use of personal protective equipment (PPE) protocol to protect HCPs and patients from exposure to SARS-COV-2.
  - HCPs should wear facemasks because they offer source control and protection to wearers against exposure to splashes and sprays of infectious material from patients.
  - HCPs should always wear facemasks while they are in the healthcare facility, including in breakrooms and wherever they might encounter coworkers.
- Practice respiratory hygiene/cough etiquette.
- Promote physical distancing or social distancing in combination with other preventive actions:
  - Arrange waiting areas so that there is at least 6 feet of distance between seats.
  - Post signage reminding HCPs and patients to maintain proper distance from other people.

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MODES OF TRANSMISSION

Transmission of SARS-CoV-2 is primarily through respiratory droplet and contact

transmission from person to person. There is also evidence that risk of virus spread is increased during an aerosol-generating procedure (AGP).[11, 12] AGPs performed on SARS-CoV-2 infected patients can generate infectious aerosols and so should be performed with caution and only when necessary.

Droplet transmission is the predominant transmission mode for SARS-CoV-2. Respiratory droplets can travel over short distances from an infected host to mucosal surfaces of the recipient. Talking, coughing, sneezing, and droplet-generating procedures can all produce these droplets.

Contact transmission involves the transfer of an infectious agent through a contaminated intermediate object (indirect transmission) or by contact with an infected person (direct transmission). Extensive evidence in the literature suggests that contaminated hands are important contributors to contact transmission.

IPC strategies to break the chain[11, 12]

- Screen everyone (patients, visitors, and HCPs) entering a healthcare facility for COVID-19 signs and symptoms.
- Practice early identification and early Isolation Precautions.
- Follow best practices for assigning patients to rooms:
  - A confirmed or suspected SARS-CoV-2 patient should be placed in a single-person room with the door closed. A bathroom should be dedicated to the patient.[11]
  - Airborne Infection Isolation Rooms (AIIRs) should be prioritized for patients who will be undergoing AGPs.[11]
- Ensure PPE selection and Isolation Precautions are appropriate:
  - HCPs who enter the room of a confirmed or suspected COVID-19 patient should use Standard Precautions and an N-95 respirator approved by the National Institute for Occupational Safety and Health[16] or the equivalent (or a facemask if a respirator is not available), eye protection, gloves, and gown.
  - If a patient with confirmed or suspected COVID-19 is undergoing AGPs, initiate Airborne Precautions. HCPs should wear an N-95 respirator or an equivalent or higher-level respirator instead of a facemask.
  - HCPs working in areas experiencing moderate to substantial community transmission may encounter asymptomatic or presymptomatic COVID-19 patients. Use Airborne Precautions and ensure that HCPs wear an N-95 respirator or an equivalent or higher-level respirators when caring for all patients undergoing AGPs.[11]
- Ensure proper AGP practice for patients with suspected or confirmed SARS-CoV-2 infection:[11]
  - Use Airborne Precautions.
  - Airborne infection isolation rooms should be used whenever possible.
  - Ensure that HCPs wear an N-95 respirator or an equivalent or higher-level respirator when caring for all patients undergoing AGPs.[16]
  - Only HCPs essential for AGP support and patient care should be present in the room.
  - Promptly clean and disinfect room surfaces with disinfectants that have SARS-COV-2 effectiveness.

PORTAL OF ENTRY

SARS-CoV-2 enters mainly via mucosal surfaces such as the mouth, nose, or eyes of susceptible individuals.

Some COVID-19 patients show conjunctival signs and symptoms, and the virus has been isolated in tears, raising concerns that the eyes may be both a portal of entry and reservoir for SARS-CoV-2.[17] Postmortem human eyes and human surgical specimens expressed both ACE2, the receptor for SARS-CoV-2, and TMPRSS2, a protease facilitating viral entry.[17]

IPC strategies to break the chain[11]

- Implement a universal use of PPE protocol:
  - In areas experiencing moderate to substantial community transmission, HCPs should wear eye protection in addition to their facemask or respirator for protection against exposure to respiratory secretions during patient care.
  - HCPs should wear an N-95 respirator or an equivalent or higher-level respirator instead of a facemask for AGPs or other surgical procedures that might elevate transmission risk if the patient has COVID-19.
- Perform strict hand hygiene in accordance with the facility policy.
- Avoid touching the face with unclean hands.

SUSCEPTIBLE HOSTS

Everyone is susceptible to COVID-19, regardless of age or sex. The most susceptible hosts tend to be older (>50 years) or immunocompromised. The disease is more likely to progress to more severe forms if the patient has underlying comorbidities (such as diabetes, hypertension, respiratory infection, cancer, or cardiovascular disease). These patients are also at elevated risk of developing complications.[18]

IPC strategies to break the chain

- Protect these susceptible hosts from exposure by adhering to universal masking, physical distancing, and strict hand hygiene.
- When a COVID-19 vaccine becomes available, provide vaccine to protect susceptible hosts.

CONCLUSION

To stop SARS-COV-2 from spreading, we must interrupt the chain of infection. Every link can potentially be broken. However, community engagement is required to effectively implement the COVID-19 prevention measures needed to end this pandemic.

May Mei-Sheng Riley, RN, MSN, MPH, ACNP, CCRN, CIC, earned her master's degrees from UCLA School of Nursing in Acute Care and School of Public Health in Epidemiology. May has been a clinical epidemiologist at Ronald Reagan UCLA

Medical Center and Kaiser Permanente and continues her infection control career at Stanford Medical Center and Providence St. Joseph. She is also an editor of Critical Care Nursing Clinics of North America *for Elsevier.*

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Recognizing excellence in IPC: The APIC Awards

BY PEGGY THOMPSON, VALERIE SPARKS, ANDREA "LYNN" CROMER, KIM NEWMAN, SUSAN DOLAN, NICOLE NOMIDES, KAREN HOFFMANN, AND SARA MILLER

For more than 30 years, APIC has recognized thought leaders in infection prevention and control (IPC) through the annual awards program. Individual and team accomplishments receive national recognition and draw attention to the critical work infection preventionists (IPs) are doing around the world. In this article, members of the 2020 Nominating and Awards Committee offer an overview of the awards program and invite other IPs to get involved.

Reflecting on the value of the APIC Awards program, Andrea "Lynn" Cromer, RN, BSN, MT(ASCP), MPH, CIC, offered a perceptive analogy for "those of you who love a good police show." According to Cromer, who is a member of the Nominating and Awards Committee, "IPs are often seen as the equivalent of 'Internal Affairs'—folks aren't often glad to see us as we try to remind the care team of the importance of our mission. The awards given by APIC provide some recognition that is all too often missing from the IP's career."

Given the diversity of work within IPC, APIC has multiple award categories: Distinguished Awards, Heroes of Infection Prevention, and Chapter Awards.

DISTINGUISHED AWARDS

APIC's four Distinguished Awards recognize individuals who have made significant and sustained contributions to IPC.

The President's Distinguished Service Award (in honor of Pat Lynch) celebrates the outstanding contributions of an APIC volunteer whose service within APIC has been judged by peers as exceptional and whose contributions have made APIC a better organization. The award honors the work of Patricia Lynch, RN, MBA, CIC, and her extraordinary volunteerism as one of APIC's pioneering members and its first national president.

The Healthcare Administrator Award recognizes the efforts of administrators who champion IPC efforts within their organization. With this award, APIC acknowledges the pivotal role executive leaders play in establishing an organizational culture that enables and supports IPC efforts in their facilities.

The Distinguished Scientist Award recognizes individuals who have made outstanding contributions to the science behind IPC. This award recognizes a serious and ongoing commitment on the part of the recipient to advancing implementation science. Recipients of the award are prominent researchers and scholars whose efforts have resulted in a body of work that contributes to APIC's mission to create a safer world through prevention of infection.

APIC's lifetime achievement award, the Carole DeMille Achievement Award, honors IPs whose contributions have improved the practice of IPC through research, performance improvement, visionary leadership, and community service. Carole DeMille served as APIC president from 1975 to 1976 and later became an internationally recognized authority in the developing field of hospital infection control.

HEROES OF INFECTION PREVENTION AWARD

The Heroes of Infection Prevention Award recognizes APIC members and/or their IPC teams who have successfully applied one of APIC's future-oriented competency domains aimed to reduce infection risks for patients across the continuum of care. Applicants must demonstrate a significant impact in any one of the following domains: leadership, professional stewardship, quality improvement, IPC operations, IPC informatics, or research. The nominee can be an individual or a team. BD, an APIC Strategic Partner, has supported the Heroes Program for 14 years. (See pages pages 14-17 for profiles of the 2020 recipients.)

CHAPTER AWARDS

APIC chapters provide members the opportunity to connect, learn, and develop innovative solutions to help tackle their IPC challenges. APIC recognizes the work of chapters and local volunteers through the Chapter Awards.

The Chapter Leader Award provides the opportunity for chapters to recognize one of their members at the APIC Annual

Conference. The criteria for this award are determined by local chapter leadership, but APIC's Nominating and Awards Committee suggests that the individual be a chapter member for at least two years and serve as an officer or mentor, and/or participate in community activities.

The Chapter Excellence Award recognizes chapters that have aligned their members and resources in support of APIC's mission and strategic plan. A chapter can apply in one of the following categories: Clinical and Professional Practice; Education, Communication, and Information Resources; Member Support; or Synergistic Alliances. Submissions are evaluated by chapter size, with awards presented in three levels: up to 50 members; 51-100 members; and 101+ members.

"After hearing or reading about the awards other chapters have been recognized for, I have heard many IPs say, 'Wow, should we nominate our chapter for all the great work we are doing?' To that I say, 'Yes, you should,' said Susan Dolan, RN, MSN, CIC, FAPIC, a member of the Nominating and Awards Committee. "Chapters are the heart and soul of APIC, and what better way to elevate your chapter than to share what you are doing with others so we can all benefit in our quest for 'healthcare without infection.'"

NEW AWARDS FOR 2021

APIC is pleased to announce the launch of two new awards for 2021: the APIC-SHEA Award for Lifetime Contribution to the Field of Infection Prevention and Epidemiology and the Emerging Leader in Infection Prevention Award.

The APIC-SHEA Lifetime Award recognizes an individual who has made great strides in the fields of infection prevention and epidemiology throughout their career. Although the individual's primary job is neither as an IP nor healthcare epidemiologist (HE), they have made significant contributions to both APIC and SHEA over their lifetime.

"This new joint award recognizes the broad range of competencies that encompass the successful practice of infection prevention and control and the importance of meaningful partnerships with experts outside of the specialties of IP and HE to expand knowledge," said Karen Hoffmann, RN, MS, CIC, FSHEA, FAPIC, the APIC Board's liaison to the Nominating and Awards Committee.

The Emerging Leader Award recognizes new IPs who have demonstrated a commitment to the field and their professional growth. The award supports emerging leaders who are interested in developing their leadership skills to advance IPC both locally and nationally. The individual must be new to IP (no more than three years of experience), a member of both APIC and their local chapter, and certified in infection prevention and control.

"APIC has several ways to honor our exceptional members who have been IPs for numerous years," noted Val Sparks, MSN, RN, CIC, co-chair of the Nominating and Awards Committee. Now, with this new award, APIC can "identify members early in their IP career who have excelled by obtaining certification quickly and been identified through their management and the local chapter as having great leadership qualities," she explained.

NOMINATION/APPLICATION PROCESS

APIC uses an online platform for most award applications. The online system allows applicants to save an application and come back another day. This is helpful because many of the awards require supplemental materials.

Each of the Distinguished Awards requires the nominee's CV, a nomination letter, and multiple reference letters. APIC's application for the Heroes of Infection Prevention Award asks specific questions about the sustainability and impact of the nominee's program. The Chapter Excellence Award requires a written summary of activities along with supporting documents. Applicants can save time by understanding these requirements and gathering materials in advance of starting the application.

References are also handled online: The nominee enters the reference's name and email into APIC's awards system, which then sends an automated email to the reference directing them to complete an online form or upload their letter.

Keep in mind that the application is considered incomplete until all supporting

APPLICATION TIPS FROM THE NOMINATING AND AWARDS COMMITTEE

- Have confidence in your proposal. The work of IPs is never to be underestimated, so tell us how great the work you are doing is.
- Give recognition where recognition is due.
- When submitting for a Chapter Award, plan ahead and have a few members work together to decide on a category. Discuss a framework of ideas via a chapter meeting or email.
- Review the criteria and determine an outline to flesh out details before beginning to enter information in the electronic application system.
- Check your application materials for readability, grammar, and spelling. Ask another person to do a final review. Typos can show a lack of attention to detail.
- Provide measures of success. Easy-to-interpret data and sufficient details about the work accomplished go a long way in elevating an application.
- Ensure your information is current, and document collaboration clearly.
- Include attachments that specifically show improvement over time, as indicated in the application. Offer recent examples of projects and publications (e.g., from the past 10 years for the Distinguished Awards).
- Review the qualifications and requirements of the award, and address each of them in the application. Double-check your application to make sure you have completed all required fields.
- Provide clear instructions for your references, and always give them a deadline for submission.
- Make sure the references clearly understand what needs to be included in their letters.

REFLECTIONS FROM 2020 AWARD RECIPIENTS

To gain personal insights into the APIC Awards Program, *Prevention Strategist* spoke with three 2020 award recipients. Linda Greene, RN, MPS, CIC, FAPIC, is manager, Infection Prevention, at University of Rochester, Highland Hospital, Rochester, New York, and former APIC president; she received the Carole DeMille Achievement Award. Boyd Wilson, BSMT, MS, CIC, FAPIC, is director, Infection Prevention and Control, at Regions Hospital in Saint Paul, Minnesota; he leads the IPC team that received a 2020 Heroes of Infection Prevention Award in the Quality Improvement Category. Kathy Miller, BAN, RN, CIC, is president of the Minnesota Chapter, which received a Chapter Excellence Award for Synergistic Alliances.

Linda Greene

Boyd Wilson

Linda, did you know you were being nominated?

Linda Greene: A friend and colleague felt that I would be an excellent candidate for the Carole DeMille Award. My first instinct was to think that she was joking. I explained that I certainly did not feel worthy to stand among so many amazing previous recipients. My friend was very insistent, and I finally sent her my CV to begin the nomination process.

Boyd and Kathy, what prompted you to apply?

Boyd Wilson: After a number of years of hard work, we were able to sustain our results and wanted to share that information with others and also recognize the team for the success of the improvement work.

Kathy Miller: It is part of the chapter's strategic plan to celebrate our work by applying for Chapter Awards.

What has this recognition meant to you, your team, or your facility?

Boyd: We have used the recognition of our IP team to further recognize our staff and providers who provided their expertise and have supported and implemented the improvement work at the point of care with our patients. We really wanted to share this recognition across our facility with our colleagues, partners, and leaders.

Linda: This recognition is definitely the highlight of my career. I was truly surprised, humbled, and honored to receive it. I remember being at the Chicago airport when Connie Steed (2020 APIC president) called me to inform me that I had received the award. I immediately burst into tears. I saw people watching me, and I am sure they thought something terrible had happened. I remember saying, "I can't believe this."

How did you/your team/your facility celebrate the award?

Kathy: The award is mentioned at our monthly meeting and annual state conference, and in our newsletter.

Linda: When the award was officially announced, we were in the midst of COVID-19, so we were not gathering for in-person meetings; however, my facility put my picture with a nice article on the front page of our intranet. I also received congratulations from senior leadership and many of my colleagues as well as my APIC chapter. My husband framed the *Prevention Strategist* article.

Boyd: We shared the information in our various communication publications, at our IP committee (which met via WebEx in June for the first time since February), and at our hospital leadership council (also meeting for the first time via WebEx). Given social distancing, it has been a little more challenging, but we intend to have some kind of outdoor event for the IP team.

What advice and tips would you give to IPs/teams/chapters considering applying or to someone who worries they aren't qualified?

Linda: I think many of us think we are not qualified. I still think about all the great people who have gone before me. However, it is important to realize that each one of us has certain talents that are unique, that make us who we are, and that those talents contribute to the profession and to the organization. Do not underestimate your value.

Kathy: If you are already doing award–worthy work, document it, and celebrate your accomplishments. I personally did the application. It was time intensive in some ways but also a good review of all our partnerships and work. I would suggest deciding on your category, and then keeping a list of contacts and projects that would fit into the category. It took me 24 hours to compile, verify, and engage members to proof and give feedback.

Boyd: I think IPs are always doing amazing new things and have experiences to share that can help others doing the same kind of work or trying to figure out a process. As you take on work, keep good documentation of the process, tools, and materials developed, as if you were going to prepare a presentation, article, or poster, so that it will be easier to assemble the information you might like to share.

Left to right: Katherine Grimm, APIC Minnesota Chapter secretary; Kathy Miller, APIC Minnesota Chapter president; Sue Mickelson; and Joe Kurland, APIC Minnesota Chapter Emerging Infections Task Force chair.

How would you describe your impact on and value to IPC?

Boyd: We have a very strong IP team with a diversity in experiences that has made us better as a result. We also have a common shared mission, vision, and values, as well as a collaborative approach to IPC and improvement that is supported by our leadership. This has allowed us to gain the trust and support of our staff and providers. We want to share the IP team's Heroes recognition with our staff and providers as it is really a recognition for all of our larger team.

Linda: I have been involved in many national initiatives, performance improvement projects, and healthcare-associated infection reduction collaboratives over the years. I think, however, that my greatest value has been in my collaboration both within the discipline and among stakeholder groups. I think I have added value to the perception of the infection preventionist's role by taking on new tasks, actively listening, and understanding what is important to other stakeholders, and by continually mentoring and encouraging those that are new to the field. What is most important is that I love what I do, and my commitment and passion are obvious.

Let's look beyond the award for a minute. Can you share a favorite memory or fun story about your journey in IPC?

Linda: One of my favorite stories dates back to when I was new IP and attended my first APIC conference. I was so impressed with the president, the board, and the speakers. I thought that I was among stars. I remember later sheepishly going up to one of the keynote speakers and telling them I loved their talk; the problem was I had mixed them up and actually had the wrong person.

Boyd: I interviewed for my first IP job and waited a very long time to hear back. So, I thought I likely did not make the cut. Finally, I heard back and was offered the position, which was very exciting. When I started on my first day, I learned that the other IP and also the infection prevention medical director had both left. I was the lone IP and a greenhorn. I also learned that the Centers for Medicare & Medicaid Services (CMS) was coming back for a return visit to include a focus on infection prevention. This suddenly was almost too exciting. One of the things on the list to be addressed for CMS was having an outbreak policy. I quickly learned the value of networking with other IPs through my local APIC chapter to help me create an outbreak policy.

materials have been received. Applicants should make sure references are aware of the timeline and process.

GET STARTED!

"Infection preventionists are doing fabulous work each and every day and are finding creative solutions to new challenges in the field," observed Susan Dolan, RN, MSN, CIC, FAPIC, a member of the Nominating and Awards Committee. "One way to recognize this amazing work is through the APIC awards program. It not only recognizes IPs for excellence in practice but also focuses on disseminating the work we do with our peers so that we can all learn from one another."

The call for 2021 nominations closed October 16, 2020. Recipients will be notified by March 2021, and awards will be presented at APIC's 2021 Annual Conference, June 28-30, in Austin.

To learn more about APIC's Award program, visit **apic.org/About-APIC/Awards** or email **awards@apic.org**. PS

Peggy Thompson, RN, BSN, CIC, FAPIC; Valerie Sparks, RN, MSN, CIC; Andrea "Lynn" Cromer, RN, BSN, MT, MPH, CIC; Kim Newman, RN, BSN, CIC; Susan Dolan, RN, MSN, CIC, FAPIC; and Nicole Nomides, MT(ASCP)CM, MS, CIC, FAPIC are members of the 2020 Nominating and Awards Committee; Karen Hoffmann, RN, MS, CIC, FSHEA, FAPIC, is APIC Board liaison to the committee; and Sara Miller is APIC senior director of membership and staff liaison to the committee.

"These are extreme times"

COVID-19 RESPONSES ACROSS THE CONTINUUM OF CARE

BY ELIZABETH NISHIURA

PARTICIPANTS

JoAnn Adkins, BSN, RN, CIC, FAPIC, is a senior infection preventionist for the Patient Safety Authority, Harrisburg, Pennsylvania, an independent state agency established in 2002. She serves as a resource for hospitals, ambulatory surgery facilities, and long-term care (LTC) facilities, helping them improve patient/resident safety through infection prevention and control (IPC) initiatives such as educational programs, collaboratives, and facility consultations.

Rebecca Bartles, MPH, CIC, FAPIC, is executive director of infection prevention for Providence, a large, highly integrated healthcare network including acute, ambulatory, long-term, and home care, in Renton, Washington. When asked, to describe her work responsibilities, she said: "I herd the cats of infection prevention! I provide system-level direction, oversight, and facilitation."

Evelyn Cook, RN, CIC, is associate director of the North Carolina Statewide Program for Infection Control and Epidemiology (SPICE) at the University of North Carolina at Chapel Hill. She consults with healthcare facilities across the continuum of care on issues related to IPC and is the principle lecturer at all SPICE infection control courses.

Lori Groven, MSPHN, RN, CIC, is the sole infection preventionist at TRIA Orthopaedic Center in Bloomington, Minnesota. Her job involves collaborating with the leadership team and quality, medical, and nursing staff to develop strategies to reduce the risk of infections and achieve top-decile performance for key infection prevention measures. Lori is responsible for initiating and leading teams to address improvement efforts across the organization, demonstrating IPC core competencies (prevention, surveillance, and control), performing surveillance, and applying adult learning principles to educational strategies, materials and presentations.

Carolyn Jackson, RN, MA, CIC, is a nurse consultant for an East Coast public health department, who works primarily with LTC facilities. In recent months, she has focused on assessing LTC facilities' compliance with key recommendations from the Centers for Disease Control and Prevention (CDC) Infection Prevention and Control Assessment Tool for Nursing Homes Preparing for COVID-19 and providing evidence-based recommendations and information to those facilities.

In July 2020, *Prevention Strategist* asked several infection preventionists (IPs) who work in a range of care settings in different regions of the United States to reflect on their experiences during the first months of the COVID-19 pandemic. Their responses suggest that IPs across the continuum of care are facing similar challenges with an innovative spirit, a commitment to science and safety, and a collaborative attitude.

A HUGE PARADIGM SHIFT

PS: What are the most notable pandemic-related changes you made/experienced regarding normal IPC practices/expectations?

JoAnn Adkins: The majority of my work is with long-term care facilities. I found the extended use and reuse of personal protective equipment (PPE), especially masks and gowns, by healthcare workers to be most notable. Prior to the outbreak, many of the facilities had minimal PPE, which was then very quickly depleted. Working with them at the beginning of the pandemic on the need to extend use and reuse of PPE, and to develop safe ways to store the used PPE, was something I never expected to experience as an infection preventionist.

Evelyn Cook: I have worked in the field of infection prevention/control and epidemiology for a little over 30 years. During this time, I relied on fundamental and basic principles supported by science and evidence-based guidelines. I was comfortable knowing that most, if not all, recommendations that I made to staff, administration and others could be supported by those tenets, not just opinion. You could say that I felt I was on "solid ground." In the beginning, when SARS-CoV-2 was first identified in the U.S. and then in my state of North Carolina, I believed, foolishly, that we would move past this event as we had others (HIV, H1N1 for example) and fundamental infection prevention practices would not be disrupted.

However, as the pandemic raged through our society, it became clear that I was no longer on solid ground with guidelines and recommendations and I found myself feeling like I was on "shifting sand"—which has now turned into "sinking sand."

Colleagues and I agree [that we are] feeling, at times, like we are "making things up" as we go and are really just trying to do the best we can in that particular situation. While I understand these are extreme times, requiring extreme action, extended use and reuse of PPE remains a troubling concept for me.

> "While I understand these are extreme times, requiring extreme action, extended use and reuse of PPE remains a troubling concept for me."

SARS-CoV-2 has touched us all personally and professionally, but I believe it has unveiled some future opportunities for the way we practice and do business, and while it will look different, we will return to "solid ground" eventually.

Carolyn Jackson: Reuse of PPE has been a major change in the care of residents who are on Transmission-Based Precautions, such as those with known or suspect COVID-19. Staff have had to adjust to both contingency capacity and crisis capacity guidelines issued by CDC to respond to the lack of PPE available.

Leadership teams at LTC facilities have faced challenges in procuring adequate supplies. The focus of which elements of PPE to wear, and when to wear them, has evolved, and staff need to be continually reeducated regarding protecting themselves as well as residents.

CDC has developed assessment tools for use in LTC facilities, and I have been closely involved in assisting facilities to complete the tools and identify areas to comply with evidence-based practices that apply to LTC.

Rebecca Bartles: There are two really notable areas of change related to COVID-19 that come to mind. The first is the use of crisis PPE strategies. As IPs, we have done things a very particular way for decades—and rapidly changing course and designing processes to allow for safe reuse and extended use of PPE required a huge paradigm shift. Although I do not want to see these changes left in place long term, it is a testament to the adaptability of our profession that we were able to quickly find solutions to an international shortage that still kept our caregivers safe.

> "It is a testament to the adaptability of our profession that we were able to quickly find solutions to an international shortage that still kept our caregivers safe."

The second is the shift in the paradigm of who owns infection prevention work. We've always said, "Infection prevention is everyone's business," but many did not take that to heart. In today's world, cleaning, disinfection, respiratory hygiene, hand hygiene, etc., are indeed everyone's business. We are now surrounded by champions for these efforts, which is a very different perspective indeed. I am constantly impressed with how thoughtful those in operational and leadership roles have become about the infection prevention implications of a decision that might not previously have landed on the radar. This is definitely a silver lining in the COVID cloud.

Lori Groven: The most notable change that we have made during this pandemic in relation to infection prevention and control measures is how we use PPE. Our organization faced critical supply issues during the pandemic that greatly impacted how we provided and used PPE. Prior to the pandemic, all PPE was considered single use; however, during the pandemic, we simply did not have enough PPE to continue in this manner and were forced to rely on conservation strategies. This proved to be very challenging. Leaders were faced with significant pressure from staff when making decisions on where and to whom to allocate PPE. There were challenges in keeping PPE secure in a world where it was no longer readily available for purchase by the general public. It was also very difficult to gain trust from staff while trying to convince them that it was safe to reuse PPE when just a few weeks prior they were told not to.

SOMETIMES THERE ARE NO "RIGHT" ANSWERS

PS: What have been the greatest challenges you have faced, and what have you learned from them?

Carolyn: As the incidence of COVID-19 infections transmitted in long-term care facilities has involved significant mortality to a vulnerable population, attention of public health officials has turned to preventing transmission in LTC. LTC typically have been under-resourced in the areas of infection prevention activities. Staff with responsibility for infection prevention and control often have added responsibility for staff development, employee health, quality improvement, and other functions within the facility. Multiple responsibilities impede the amount of time and effort LTC IPs have to devote to infection prevention and control.

As an on-site and telephone consultant, assisting IPs to work on prioritization of tasks and approaches to assist in infection control has been a great challenge. As the pandemic has evolved, key stakeholders have introduced preventive measures and modified these measures for long-term care facilities. Assisting IPs to implement these changes has been a major focus.

Lori: The greatest challenge I have faced is keeping up with constant changes and communicating them effectively to staff. The guidelines and regulations for this pandemic changed daily, sometimes hourly, necessitating copious amounts of communication to staff. This proved challenging as not all of our staff had access to email on a regular basis, and staff also were experiencing email overload so you couldn't be sure they even read it. We had to get creative with huddles, breakroom postings, WebEx meetings, etc. We also had staff who were on furlough that had to be brought up to speed when they returned.

> "The greatest challenge I have faced is keeping up with constant changes and communicating them effectively to staff."

Evelyn: My scope of work involves infection prevention education and consultation with all types of healthcare settings, and a major challenge during this time has been to stay informed with the latest CDC guidance, state guidance, and regulatory guidance/requirements. New guidance documents have been issued frequently, along with updated versions, making it difficult to stay current with the wealth of information.

Another challenge for me has been to recognize that sometimes there are no "right" answers. I have received a large number of questions on how to best operationalize some of the CDC recommendations, based on facility type. For example, having had the opportunity to consult and work closely with congregate care settings, it has been difficult at times to provide a "right answer" on how to implement certain processes (for example, visitor/family restrictions, expanded use of PPE, and respirator fit testing) when the facility does not have the appropriate resources, education, and training to do so.

What I have learned most from these challenges is that IPs have to continue to demonstrate creativity, perseverance, and determination in providing not only the best recommendations but practical tips for implementation as well.

JoAnn: One of the greatest challenges I faced was dealing with very stressed, understaffed, and frightened facility infection preventionists. In the midst of a crisis, when the facility IP is the resident expert everyone is looking to for answers, it is necessary to provide them with emotional support and a safe "arena" for them to vent their anger, fears, and frustrations. I provided that safe space and a "shoulder to cry on" along with providing the most up-to-date strategies to address the pandemic.

> "What I have learned most from these challenges is that IPs have to continue to demonstrate creativity, perseverance, and determination in providing not only the best recommendations but practical tips for implementation as well."

Rebecca: By far, the rapid nature with which the situation escalated was the greatest challenge, coupled with the frequency with which local, state, and federal guidelines and requirements changed. Our organization provides care in seven states and dozens of counties, and ensuring compliance with federal, state, and local requirements has been a huge lift. The major lesson here is the importance of pausing for perspective before making a decision or change based on a guideline or regulation. If the change does not make sense or is not feasible, questioning the change (even if it means respectfully questioning a regulator) is important. At times, those making decisions don't have a comprehensive perspective, and providing input and feedback can help to provide that perspective.

IPs ARE A VERY CREATIVE GROUP

PS: Thinking about the changes that IPs or your employer made in response to COVID-19, do you think any are IPC innovations/improvements that should be carried forward? What are they?

JoAnn: Infection preventionists are a very creative group. Prior to guidance being issued, many IPs came up with unique ideas to prevent transmission and spread. However, as these were not my ideas, I do not feel I can relay them.

Lori: I think the screening piece of this pandemic is very important and

is something we will continue going forward. Whether it is COVID-19, influenza, strep throat, or your general run-of-the-mill GI virus that is circulating, I think we have prevented a significant amount of transmission among staff, patients, and visitors by thoroughly screening them before entering the facility. I think this is a very useful practice that would be beneficial going forward and would help cut down on employee illness and also make employees, patients, and visitors feel safer in our facility.

Another change that came about during this pandemic is the increase in telehealth visits. I think this was a big game-changer for how care is delivered and provided a critical service in a time of need. It helped us maintain social distancing in our facility and conserve PPE. Both providers and patients were pleasantly surprised at how beneficial these visits were and are excited to keep this as an option for care going forward.

"Another change that came about during this pandemic is the increase in telehealth visits. I think this was a big game-changer for how care is delivered and provided a critical service in a time of need."

Rebecca: I think the biggest innovation "win" here has been the technology that has arisen to support our response efforts. Our organization has effectively redirected thousands of individuals for telehealth services, eliminating transmission risk in those cases. I've heard the same is true for many large healthcare organizations, and I think this is an important inflection point for acceptance of virtual care. I suspect that this technology will become increasingly more accepted, and the benefits of virtual services are obvious (increased access, reduced transmission risk, lower cost, ease).

"I think the biggest innovation "win" here has been the technology that has arisen to support our response efforts."

Our organization has also built a number of internal tools to better understand COVID-related census, trends, epidemiology, etc., including natural language processing to identify those with COVID-like-illness symptoms for trending. These tools can be leveraged for other pathogens and will likely be expanded as our focus moves back to more traditional things (like influenza season).

Evelyn: While not an innovation, a striking improvement I have witnessed is the collaboration between multiple disciplines (acute care, congregate care, public health, and regulatory agencies) to reinforce the importance of infection prevention. Disciplines have moved out of their silos and had open, frank dialogue about gaps or breaches in infection prevention that may exist and how to best rectify those.

"A striking improvement I have witnessed is the collaboration between multiple disciplines (acute care, congregate care, public health, and regulatory agencies) to reinforce the importance of infection prevention."

This type of collaboration should continue, moving forward after the pandemic, as we all remember we have a common goal and purpose and we must work as a team to be successful.

Carolyn: Competency validation for use of PPE: This includes proper donning and doffing. Additionally, competency validation for hand hygiene should be carried forward for all staff within the facility.

LIKE DRINKING FROM A FIRE HOSE

PS: What IPC resources have you found to be most helpful, and why?

Lori: Our organization's command center calls and infection prevention team calls. I find the calls especially helpful as they give me the opportunity to hear up-to-date information in conjunction with practice changes and allow time for questions and feedback.

Rebecca: Early on, the World Health Organization website was the most useful data source for me, followed by the Johns Hopkins EIS website. Once CDC began adding content and updates more frequently, their website became a more primary resource.

That said, it is incredibly difficult to sort through the amount of information coming in every day (like drinking from a fire hose). Our library services department helps to filter out those articles that might have the biggest implications, but we are definitely still in a place of major information overload.

JoAnn: As the pandemic unfolded, I found APIC's COVID-19 page and CDC's "What's New" page to be most helpful as resources, and all of the new updates are located at one spot on each website and very easy to access and review.

Evelyn: As I mentioned earlier, there has been a preponderance of guidance documents related to COVID-19, unlike anything I have ever seen before. It is virtually impossible to research and stay current on new and updated versions.

I have found APIC's Public Policy Team's latest COVID-19 updates and Public Policy Updates to be a tremendous resource in helping me to prioritize new and updated information for review. In addition the CDC training webinars and COCA [Clinician Outreach and Communication Activity] calls have been very beneficial.

Carolyn: CDC infection control assessment tools and guidance documents: checking the website daily provides updates based on the latest science.

Long-term care resources on the APIC website: Many resources on the site are available as a complimentary resource for LTC IPs. This site also contains key documents from stakeholders in one location for use by interested individuals.

TALK, LAUGH, CRY, AND EVEN YELL

PS: How are you and your colleagues dealing with pandemic-related emotional stress?

Carolyn: In working with facilities, my approach has been to determine if there are resources available at the facility for psychological support. Some facilities have psychiatrists and psychologists who assess and provide care to residents. This is a great resource for facilities to tap to provide emotional support for staff.

> Some facilities have psychiatrists and psychologists who assess and provide care to residents. This is a great resource for facilities to tap to provide emotional support for staff."

JoAnn: This has been an extremely stressful time for my colleagues and myself. Supporting facilities and listening to the horror stories of what they are enduring with staffing shortages, lack of PPE, and death is very difficult and draining. We have all suffered the horror and the profound sadness of this pandemic. I deal through my faith and self-care (i.e., prayer and reflection, long walks in the woods, gardening).

Evelyn: Boy, that is a great question. Infection preventionists, like most professionals, have a unique set of characteristics that allow them to be successful in their role. IPs tend to be excellent communicators, are decisive, and possess the ability to multitask, but I think a major strength, especially in times such as this, is the desire and ability to network with others.

> We have all suffered the horror and the profound sadness of this pandemic. I deal through my faith and self-care."

We have always been willing to share knowledge, have a open discussion about the issues, and help our colleagues when the opportunity presents itself. I believe it is our ability to talk, laugh, cry, and even yell (with disbelief at some of the things we are hearing and seeing) with each other that is helping us deal with the emotions and the stress.

Rebecca: This is a tough one. Many of my colleagues within Providence have been in "pandemic response mode" since we received the first case in late January. Most of us have had very little time away and have worked extended hours for almost half a year now. Things seemed to slow down a bit in late May and June but are definitely picking up again. For now, we are working to find humor where we can, and I am personally enjoying all of the COVID-related meme sharing that is happening. We are also encouraging our colleagues to take time off to relax and refresh, as we are nowhere near the finish line of this marathon.

Lori: We have a great employee well-being program that shares resources with staff on coping with the stress of a pandemic. We've also had a few amazing presentations by our in-house psychologist on dealing with the stress of this event, which staff found helpful. We also have an employee assistance program for staff that need a little extra help.

BUCKLE UP FOR THE LONG HAUL

PS: Looking back, is there anything that you, in your professional capacity, would have done differently before the pandemic to better prepare?

JoAnn: As my role is as a facility resource, I am not sure what else I could have done pre-pandemic to better prepare. I continue to work on building relationships with the facility IPs so they feel safe reaching out to me.

> I continue to work on building relationships with the facility IPs so they feel safe reaching out to me."

Evelyn: I am not really sure. This question has made me think back to the beginning when we were telling everyone *not* to wear a mask, especially out in public. There have been "mixed messages" along the way, and I am not sure whether those could have been prevented or not. The old saying, "hindsigth is 20/20," is probably true, but, overall, I can't really think of anything I would have done differently to be better prepared.

Rebecca: As the saying goes, "hindsight is 20/20." I think our IP teams were as prepared as possible for what we could have imagined a global pandemic to be. I don't know that any of us could have predicted a virus that would behave like COVID-19 does, though. With the clarity of today, I would have just done *more* of each preparedness step: increased stockpiles of PPE, conducted more drills, built better communication pathways, etc.

Lori: I would have taken a lot more vacation early in the year! All joking aside, I think it is hard to specifically prepare for a pandemic, as they are all different, and you just never know what the impact will be and how long they will last. My advice would be to buckle up for the long haul and take it day by day.

TAKE CARE OF YOURSELF

PS: Is there anything else you'd like to share with *Prevention Strategist* readers?

JoAnn: Education is vital to safety. Know what resources provide the most accurate, up-to-date information to assist in providing education to staff and consumers. Keep a current list of resource websites you frequently use to easily access them.

Relationships are important. Work on developing a network of IPs you can contact to discuss issues or concerns, vent to, and bounce ideas off. We are all in this war together. As IPs, we need to support and encourage each other. APIC offers a great platform to begin building your network.

> Work on developing a network of IPs you can contact to discuss issues or concerns, vent to, and bounce ideas off. We are all in this war together."

Carolyn: The importance of taking care of oneself during these challenging times. We have not seen a pandemic during our professional careers and are unlikely to see another one. Although it is important to embrace this historical event, it is equally important to take care of yourself. PS

RESOURCES MENTIONED IN THIS ARTICLE

APIC:
- COVID-19 webpage: apic.org/covid19
- LTC webpage: apic.org/free-ltc-resources
- Public Policy website: cqrcengage.com/apic/home

CDC:
- Coronavirus (COVID-19): What's New: cdc.gov/coronavirus/2019-ncov/whats-new-all.html
- Infection Prevention and Control Assessment Tool for Nursing Homes Preparing for COVID-19: cdc.gov/coronavirus/2019-ncov/hcp/assessment-tool-for-nursing-homes.html

World Health Organization:
- Coronavirus (COVID-19) pandemic: who.int/emergencies/diseases/novel-coronavirus-2019

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* Edmiston CE Jr, Griggs RK, Tanner J, Spencer M, Seabrook GR, Leaper D. Perioperative hair removal in the 21st century: utilizing an innovative vacuum-assisted technology to safely expedite hair removal before surgery. *Am J Infect Control.* 2016;44(12):1639-1644. doi: 10.1016/j.ajic.2016.03.071.

PARTNERING IN A PANDEMIC

Forging long-term ties between **IPC** and the **emergency department** during COVID-19

BY JILL HOLDSWORTH AND MICHAEL PERRY

Members of the multidisciplinary team responding to COVID-19 at Emory University Hospital Midtown (from left to right): Steve Howerton, director of laboratory services; Robert Jackson, environmental services operations manager; Jill Holdsworth, manager, infection control; Dr. Michael "Chuck" Perry, medical director, emergency department; and Brian Frislie, director, environmental services.

As information about COVID-19 began filtering in during the early months of 2020, Emory University Hospital Midtown (EUHM) knew that early preparation for an outbreak would be imperative. Since January, the pandemic response has reshaped the relationship between the infection prevention team and the emergency department (ED), and the lessons learned offer hope for ongoing infection prevention and control (IPC) improvements in the ED.

EUHM is an acute care hospital set in the heart of Atlanta with more than 500 beds. The infection prevention department is made up of one manager and four coordinators, and there is one hospital epidemiologist, who is an infectious disease physician. The Emory Midtown ED is a 45-bed department with an average of 1,400 encounters per week.

Before the COVID-19 pandemic, the infection prevention department focused as much on the ED as any other clinical area. Typical IPC tasks in the ED included performing rounds, completing readiness rounds for surveys by the Joint Commission, and providing feedback to the nursing teams and leadership on regulatory issues that might come up during an inspection. The guiding approach was multidisciplinary collaboration. However, when planning for the COVID-19 response began, the team quickly realized that a stronger partnership between the infection prevention department and the ED would be invaluable.

PLANNING FOR COVID-19

In mid-January, leaders from across EUHM came together to begin planning, knowing that the hospital would likely receive some of the first COVID-19 patients in the metro Atlanta area. Atlanta's Hartsfield-Jackson Airport, the busiest airport in the world, has a Centers for Disease Control and Prevention quarantine site and was one of the first airports to require screening of passengers returning from endemic areas around the world. Once quarantined, these patients would be sent directly to EUHM, and their first stop would be the ED.

As the pandemic grew beyond a disease of travel, and community transmission became widespread, the EUHM response team rapidly redesigned ED operations to

include a bifurcated patient flow. Upon arrival to the ED, patients would be separated based on COVID-19 risk and symptoms into two specific sections of the ED.

During planning, the infection prevention department was at the table as a key player to assist with designing and walking through the workflow. As the plan developed, the infection preventionists (IPs) became more intimately involved in the details of the operations and logistics.

COMING TOGETHER

As the first potential COVID-19 patients, or persons under investigation (PUIs), came to the EUHM ED in March, the team involved in IPC treated each encounter as a learning opportunity. The IPs initiated after-action briefings for the multidisciplinary team, which included representatives from environmental services (EVS), nursing, hospital leadership, epidemiology, laboratory, public safety and security, emergency medical services, and other system healthcare partners.

As part of the after-action review, each department lead had the opportunity to share their team's successes and barriers so they could be considered for future enhancements to the process. Additionally, the team walked through IPC steps taken in each response, including donning/doffing, the route of the patient entering the ED, the communication tree and notifications, code responses, and cleaning protocols. Thus, the briefings allowed the team to share lessons learned, communicate more effectively, and respond better to the next patient arrival.

Throughout March and April, the numbers of PUIs and positive COVID-19 patients at EUHM increased continually. During these times, information and guidelines were changing rapidly, which made it vital to have consistent IP support in the ED. The IPs maintained a regular presence in the ED throughout the workdays, frequently attended nursing huddles and physician faculty meetings, and provided in-person education as needed. During such uncertain times, in-person IP support in the ED (and elsewhere in the hospital) eased fears and allowed the team to promptly troubleshoot problems.

"There was a relinquishing of titles and a drive to work together to solve unique problems facing a common enemy," recalled Dr. David Wright, professor and chair of the Emory Healthcare Department of Emergency Medicine. "The infection prevention and infectious diseases departments, the chief medical officer, nursing, and emergency medicine came together to tackle challenges in real time, constantly communicating and respecting ideas and opinions. The attitude of the conversation would not include the word 'but,'" he said. "Rather, we asked 'What if?' and 'How do we make this happen?' together."

Dr. Michael "Chuck" Perry, medical director, emergency department, and Jill Holdsworth, manager, infection control, outside of the Emory University Hospital Midtown emergency department.

DEPENDING ON EACH OTHER

In the early months of EUHM's pandemic response, the ED faced personal protective equipment (PPE) supply changes, employee illness, numerous changes in protocols, and a rising volume of COVID-19 patients. Given the frequent changes in testing protocols and isolation recommendations, providers and clinical staff were often uncertain about best practices. One of the most important aspects of the infection prevention department's response in the ED was availability—the IPs made themselves available 24/7 by pager, phone, email, and in person to ensure the entire team felt comfortable in the ever-changing COVID-19 world.

At times, it seemed like the ED was engaged in a continuous series of IPC trials. For example, because of nationwide PPE shortages, the hospital purchased unfamiliar types of gowns, and personnel therefore had to be trained in the appropriate donning/doffing guidelines for each type of gown.

At the center of the educational efforts and messaging was the core leadership group (representatives from nursing, IPC, physicians, respiratory therapy, EVS, security, laboratory, etc.). This group wasn't led by any one person; instead, there was an interdisciplinary team effort for all initiatives. The unity of the leadership helped frontline staff feel confident as safety protocols were introduced or revised. With each change, IPs were present in the ED as often as possible, and during multiple shifts, to educate, answer questions, fix issues, and—above all—be a constant source of support for the ED team.

THE NEW NORMAL: A CONTINUED PARTNERSHIP

As EUHM begins to look toward what will be the "new normal," the hospital's

top priority is moving forward together to improve safety for both patients and personnel. All departments—nursing, medicine, infection prevention, emergency medical services, EVS, respiratory therapy, and radiology—are now more committed to coming together to communicate and learn from each other, in all situations, to achieve the best outcome.

The IPC-ED team in particular has begun multiple projects as part of its COVID-19 response, including out-of-hospital codes process and safety, interdisciplinary incident report reviews, COVID testing algorithms, PPE use and reuse protocols/tests of change, and use of noninvasive positive-pressure ventilation in PUIs. Additionally, the ED and IPC teams are collaborating to review certain processes under a microscope, such as respiratory interventions, EVS isolation cleaning, radiology transports, lab specimen processing, and many other key workflows which the teams had not previously focused on together.

In planning and implementing its pandemic response, the IPC team has learned that the best way to succeed in any project or process and overcome barriers is to go straight to the place of work to walk through situations, see how the work is done, and ask for feedback from those who do the work. As a result of COVID-19, IPC has become a greater priority in the EUHM ED, and the infection prevention department is now considered a member of the ED family. PS

Jill Holdsworth, MS, CIC, FAPIC, NREMT, CRCST, is manager of infection prevention, and Michael Perry, MD, MBA, is medical director of the emergency department at Emory University Hospital Midtown in Atlanta.

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COVID-19 response in a long-term acute care hospital

BY SANDRA MORGAN, GARY JOHNSTON, MELINDA COMER, TESSA TERWILLIGER, AND ANTONY GRIGONIS

Select Specialty Hospital—The Villages is a long-term acute care hospital (LTACH) in Oxford, Florida, with a multidisciplinary approach to patient care and functional recovery. Typical of LTACHs, the care team includes intensivists, nurses, respiratory therapists, rehabilitation therapists, pharmacists, dietitians, and case managers.[1] During the COVID-19 pandemic, the hospital—which is part of Select Medical, a healthcare organization with 100 LTACHs throughout the U.S.—has relied on a combination of established preparedness strategies and innovative solutions to safeguard its high-risk patient population.

PREPARATIONS FOR THE COVID-19 PANDEMIC

Before the federal government declared that the COVID-19 pandemic was a national emergency, Select Medical took steps focused on disaster preparedness in anticipation of COVID-19 outbreaks. Organization, communication, and a proactive approach were key strategies that allowed personnel to innovate and stay in front of the surging COVID-19 crisis.

As COVID-19 spread across the United States in early March 2020, Select Medical launched an intensive, organization-wide readiness approach, and Select Specialty Hospital—The Villages began local steps to prepare for and manage patients with this illness. Select Medical's chief medical

Members of the Select Specialty Hospital—The Villages nursing team: Kimberly Duest, RN, BS; Cheryl Ruskin, RN; Denise "Cricket" Mayer, RN, MSN, MHA; and Heather Cavanah, RN.

officer led daily huddle calls to ensure that clinical and operational leaders from all areas of the organization were coordinating policy development and implementation, source and environmental controls, supply chain management, equipment mobilization and tracking, disaster triage, staffing and readiness drills, and visitor and staff screening.

Melinda Comer, Select Medical's vice president of infection prevention, explained, "We based our strategies on Centers for Disease Control and Prevention guidance, along with other recommendations from the Society for Healthcare Epidemiology of America, Infectious Diseases Society of America, and APIC, starting in February 2020 with our Personal Protective Equipment (PPE) Conservation Plan. Early on when there was not a lot known about this virus, guidance was changing almost daily and it was challenging to monitor those changes."

The team implemented the following strategies across the organization and at the regional and facility levels:

- We deployed multiple communication channels to assist with the flow of information, including a COVID-19 helpline that was staffed seven days a week; daily organizational and regional update calls; COVID-19 portal pages for document management; education modules and leadership podcasts addressing stress, anxiety, engagement, and mental health; and virtual and video meetings at a facility and regional level.
- We developed source control policies, education, and tools, including education and ongoing competency assessment for donning and doffing PPE and isolation requirements. For personnel with potential exposure to COVID-19 and suspected COVID-19 patients, we employed a buddy system for donning and doffing PPE to ensure accuracy and safety.
- Point-of-entry screening procedures were implemented for employees, physicians, and visitors, including temperature checks, PPE requirements, and education.
- We implemented heightened and frequent environmental cleaning strategies and education, and deployed alternative products for cleaning and disinfecting.
- We developed and maintained supply chain and equipment management counts, supply tracking, and allocation plans. Shareable spreadsheets were leveraged to facilitate real-time monitoring and tracking of masks, gowns, gloves, goggles, face shields, ventilators and noninvasive positive pressure ventilation equipment, hand sanitizer, and cleaning supplies.
- A disaster triage, staffing, and training plan was used at all inpatient facilities. This plan included strategies for cross-training current staff and onboarding, and steps to prepare for surge management. General orientation for contracted and Select staff was streamlined to allow facilities to quickly fill vacancies due to exposures and other needs.
- Administrative controls were put in place to ensure active leadership involvement in preparedness and source control at each facility across the organization. Strategies included assigned leadership tasks and tabletop preparation activities, education, audits, and leadership rounding. Leadership rounding took place every day, on all shifts, to monitor COVID-19 mitigation strategies and PPE compliance.
- We closed all family and outside visits for patients on March 16, in advance of regulatory requirements, to protect patients and staff from virus transmission early in the course of the pandemic. In an effort to keep families engaged in the patient's progress and plan of care, Select Medical leveraged virtual visitation using tablet computers and developed an innovative family communication program.

THE FIRST COVID-19 PATIENT

The first confirmed case of COVID-19 in central Florida occurred on March 7, and Sumter County, where Select Specialty Hospital—The Villages is located, issued a stay-at-home advisory on March 31. On April 3, the first two Sumter County deaths attributed to COVID-19 were reported. As the threat moved closer to home, Select Specialty Hospital—The Villages continued preparedness activities.

ABOUT LONG-TERM ACUTE CARE HOSPITALS

Critical illness recovery hospitals (licensed as LTACHs) are specialized hospitals that provide acute care for chronic or persistently critically ill patients. LTACHs have staff and resources to maximize the chances of chronically ill patients recovering to functional levels. Most LTACH patients are transferred directly from an intensive care setting. LTACH patients are higher acuity and require continued care services such as laboratory monitoring, diagnostics, critical drips, nutrition support, and strategies for liberation from prolonged mechanical ventilation.[2]

The hospital admitted its first patient with a positive COVID-19 test on April 17, 2020. The team deployed the strategies developed by Select Medical during preparedness planning, including isolation and PPE, the buddy system for validating compliance with precautions, clustered and team approaches to care delivery to reduce clinicians' exposure at the bedside, and reviewing and limiting aerosol-generating procedures. Crash carts were outfitted with airborne isolation PPE to protect clinicians before high-risk interventions were performed.

As the hospital treated additional COVID-19-positive patients, persons under investigation (PUIs), and COVID-19 recovery patients, the clinical staff became more confident and competent in their ability to safely care for the COVID-19 patient population. "We were able to relay concerns to staff and increase their knowledge of PPE utilization through frequent rounding on all shifts, 7 days/week, which helped us to become more relaxed and proficient in caring for these patients," said Cheryl Ruskin, nurse leader.

Ensuring that PPE was consistently and easily available at the point of care was an important way to ease staff worries. Employees' fears during early experiences with COVID-19 were also mitigated through increased communications from clinical leaders during intensive and frequent rounding.

COMMUNITY PARTNERSHIPS

As the pandemic intensified in central Florida, Select Specialty Hospital—The

Villages infection preventionists developed close partnerships with the Florida Department of Health (FDOH) and the emergency operations center (EOC). FDOH assisted the hospital team with COVID-19 testing locations for patients and conducted two mass screenings for the hospital's clinical staff. Additional guidance was provided by FDOH for employees who needed to quarantine following community exposures.

State of Florida epidemiology experts visited the hospital to observe the COVID-19 prevention strategies that were in place. The EOC was provided with twice-daily data on local PPE counts and COVID-19 cases. The EOC supported the healthcare providers in the community by sourcing and supplying PPE when needed.

In an effort to provide relief to the critical and intensive care units in acute care hospitals and promote more rapid throughput in overtaxed emergency departments, Select Specialty Hospital—The Villages also collaborated with its community partners to accept deconditioned patients who need more time to wean from the ventilator or their high-flow respiratory needs, COVID-19 recovery patients who required extended critical care, and all non-COVID-19 patients who needed more intensive care recovery time after being discharged from local acute care hospitals.

"With the most recent COVID-19 surge in Florida, Select Hospital—The Villages has seen referrals more than double from the surrounding acute care hospitals as we work to partner with our community to decompress the intensive care and COVID units," said Rebecca Cannon, director of business development.

FAMILY COMMUNICATION AND ENGAGEMENT

When visitation was closed organization-wide, Select Specialty Hospital—The Villages leveraged virtual visits and an innovative family communication program. The program was staffed by outpatient clinic staff, including therapists, athletic trainers, and administrative staff, who were not able to work in their specialties because of the pandemic. These staff were trained to provide regular telephone updates and support to families. The nursing and clinical team provided daily reports about the patients, and then the family support staff called families twice daily to provide updates and field questions for the clinical team.

Virtual visits between patients and family members were carried out via tablet computers with the help of case managers. "Taking the time to connect patients with their loved ones has become a frequent and necessary part of our day," explained Hope Demons, director of case management.

Window visits were also planned so patients could see their loved ones while communicating via cellphones. The hospital is a one-story building with windows at each room, which allows this kind of creative visitation. However, increased lawn and shrubbery maintenance was needed to allow easier access for families to the outside windows.

Staff positioned patients within their rooms for better visibility and interaction with distanced loved ones. These visits were often set for a specific time of the day so that the patient could be available between therapy sessions or treatments and activities. Families would sometimes bring signs or religious mementos to place at the windows, or they might bring pets, relatives, and friends to motivate and encourage their loved one to work to improve and return home.

These interventions were implemented to try to fill the gap that resulted from distancing the patients from their families. Facilitating closer communication between patients and families has been linked to improvements in the healing process.[3, 4]

CONCLUSION

In collaboration with organizational leadership, Select Specialty Hospital—The Villages deployed extensive preparedness activities and has been able to successfully provide care for both COVID-19-positive and COVID-19 recovery patients as this pandemic continues. The facility takes care to maintain evidence-based infection control mitigation strategies, frequent and timed environmental disinfection of high-touch areas, regimented screening upon entry to the hospital, and consistent use of PPE to safely manage COVID-19-positive and COVID-19 recovery patients within the LTACH setting.

The hospital continues to provide post-acute care, including the respiratory physiotherapy, rehabilitation, and nutrition management services that are often needed to return patients to functional levels.[5] In the face of the global COVID-19 pandemic, Select Specialty Hospital—The Villages has developed the ability to adjust and adapt to safely manage its high-risk post-acute patient population. PS

Sandra Morgan, RN, MS, NEA-BC, is CEO of Select Specialty Hospital–The Villages. She is a graduate of the University of South Florida and has worked in nursing and leadership roles for more than 30 years.

Gary Johnston, MSN, APRN-C, CCRN-K, is Select Medical vice president of clinical services and has 25 years of healthcare experience. He received his MSN from the University of South Alabama.

Melinda Comer, RN, CIC, is Select Medical vice president of infection prevention. She has over 40 years of clinical experience and over 20 years of infection prevention experience.

Tessa Terwilliger, MSN, is Select Medical's clinical program facilitator and has 23 years of clinical experience. In her role, she assists with a wide spectrum of clinical, infection control, and quality initiatives.

Antony Grigonis, PhD, is vice president of quality and healthcare analytics. He received his PhD from the University of Massachusetts and has specialized in post-acute care for 27 years.

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BUILDING bridges between IPC and dialysis units

BY JESSICA RINDELS

Although the basic concepts of infection prevention can be applied to almost any setting, some specialties require an extra layer of protection. When infection preventionists (IPs) are asked to step into one of these specialty areas, they may not initially feel comfortable or confident because they lack specialized knowledge. I personally experienced a level of discomfort when I was asked to become more involved in the dialysis unit at Children's Mercy Hospital in Kansas City, Missouri.

Members of the SCOPE Collaborative team that developed the IPC rounding tool (from left to right): Patricia Jackson, senior director, infection prevention and control, Children's Health, Dallas; Hillary Hie, infection preventionist, Children's Hospital of Philadelphia; Susan Dolan, nurse epidemiologist, Children's Hospital Colorado; and Jessica Rindels, infection preventionist, Children's Mercy Hospital. Not pictured: Amanda Bonebrake, infection preventionist, Ann & Robert H. Lurie Children's Hospital of Chicago.

Hemodialysis patients are at a higher risk for infection related to multiple factors, including central vascular access, open bay environments for treatment, and immunosuppression. In hemodialysis patients, infection is the first cause of hospitalization and the second most common cause of mortality.[1] Over the last several years, healthcare providers involved in dialysis processes and practices have formed coalitions and national collaboratives to work on standardizing and improving care for this at-risk population. My experience focuses on the Children's Hospital Association's Standardized Care to Improve Outcomes in Pediatric End-Stage Renal Disease (SCOPE) Collaborative and how a small team developed a tool to use while performing infection prevention rounds.

GETTING STARTED

Early in 2019, the nephrology medical director approached our infection prevention and control (IPC) department and asked us to establish a greater presence in the dialysis unit and become involved in the SCOPE Collaborative, which focuses on creating standardized practices, policies, and forms to prevent infections and optimize outcomes in pediatric peritoneal dialysis and hemodialysis patients within participating facilities.[2] Until recently, SCOPE had very little involvement from IPC experts, and it was becoming apparent that needed to change. At the time of our discussion, there was only one IP in the collaborative. I was certainly willing

to dive in, but I knew this would be a lot of work if I wanted to gain the nephrology department's trust and be a solid resource.

My initial hurdle was my background: adult acute care nursing with no dialysis experience. After meeting with the leadership in the dialysis unit, I quickly realized I needed to know more about this process and environment if I wanted to help their team. When looking for resources, my first stop was APIC. The APIC Text online has a fabulous chapter dedicated to dialysis,[3] which helped me understand what makes this healthcare modality so high risk and provided further resources for gaining more knowledge of this specialty. My dialysis colleagues also pointed me to the Centers for Disease Control and Prevention (CDC) Making Dialysis Safer for Patients Coalition[4] as well as the Centers for Medicare & Medicaid Services (CMS) Conditions for Coverage for end-stage renal disease facilities.[5] The CDC coalition website offers resources such as templates for rounding tools, signage, and checklists of ideas to help facilitate IPC practices. The CMS Conditions for Coverage helped me understand what regulations and accreditation standards are relevant to dialysis facilities.

My final resource was the dialysis staff. I soon discovered that dialysis nurses and other dialysis staff are wonderful educators and strong advocates for their patients. They showed me their workflow, explained to me their practices, and shared their concerns about how they currently view IPC activities.

CREATING A ROUNDING TOOL

After a couple of weeks of information gathering, I started trying to create a tool to help me organize and make sense of all the information I had reviewed. I will admit that I love a good checklist. It was around this time that I attended my first SCOPE Collaborative workshop and met two other IPs with the same vision: We agreed that, although resources are available from many societies, IPs need a tool that can pull all the relevant information together and help guide them when conducting rounds in a dialysis setting.

With that goal in mind, we formed a small team of five IPs and started out with virtual brainstorming meetings. We identified categories of IPC practices ranging from basic hand hygiene and clean storage to more specific categories such as water room considerations and station disinfection. Our initial effort had 23 categories, but we realized how unrealistic that would be. After a few more meetings, we chose five major topics:

- Screening and precautions
- Staff attire
- Hemodialysis connection/disconnection procedures
- Dressing and line care
- Environmental considerations

The entire tool encompassed seven pages in a checklist format, and each item was derived from an expert source. As a group, we had reached a point where we needed outside feedback on our creation.

During the fall workshop for SCOPE, we presented the comprehensive rounding tool. The audience consisted of about 120 professionals who focus on nephrology and dialysis and included only six IPs. The response from our audience to the contents of the tool was interesting. We had a lot of positive feedback as well as many questions. To help better address the questions, we asked for a group of volunteer facilities who could take the tool and use it. At the end of the workshop, we had 12 facilities that would use the tool and participate in monthly feedback calls to evaluate the effectiveness of this new resource.

During the feedback calls, we identified three recurring topics: personal protective equipment (PPE) use, the length of the document, and the ability to edit it. PPE requirements seem to vary from state to state and therefore require further clarification in the tool. One of our participants from CDC offered to provide more guidance regarding this topic at a future date, so we opted to make this "per facility policy" on the form for now.

Another frequent comment was the length of the tool. We discovered having seven pages of information to observe was unmanageable for most facilities—especially when most participants were not IPs. The request was to revise the sections to differentiate between what would be evaluated most often and what could be done less frequently. Taking this feedback, we split our single rounding tool into three documents: High-Frequency Rounding, Intermittent Rounding, and Special Considerations (see Table 1). We encouraged the participants to reach out to their IPC departments to determine

Table 1: Overview of SCOPE Collaborative dialysis infection prevention rounding tools

Rounding Tool	Checklists
High Frequency	**Precautions** ✔ Personal protective equipment **Hemodialysis connection/disconnection procedures** ✔ Tunneled access—connection ✔ Tunneled access—disconnection ✔ Graft/fistula cannulation ✔ Graft/fistula decannulation **Dressing and line care** ✔ Dressing change ✔ Line care **Environmental considerations** ✔ Waste disposal ✔ Dialysis station disinfection ✔ Electronic devices ✔ Toys
Intermittent	**Environmental considerations** ✔ Water room ✔ Medication storage and preparation ✔ Clean supply storage ✔ Linen storage ✔ Ice machines ✔ Refrigerator/freezer ✔ Waiting area
Special Considerations	**Screening and precautions** ✔ Illness screening ✔ Isolation considerations **Environmental considerations** ✔ Privacy curtain

what their frequency should be based on risk and past compliance observations.

Finally, all facilities wanted the ability to edit the tool to incorporate aspects of their policies and practices. Because the tool is branded by the Children's Hospital Association, this will not be possible. However, all participants were encouraged to use these documents as templates to make targeted tools of their own if they prefer. The purpose of this tool is to improve IPC practices in dialysis settings and ultimately help keep this high-risk population of patients free from infection, so information sharing is encouraged. During this process, it was refreshing to observe how eager the nephrology professionals were to have this resource, and how open they were to incorporate it into their facilities.

LOOKING FORWARD

This resource is now available for use in the 50-plus facilities in the SCOPE Collaborative, and our aim is to make it more widely available to IPs everywhere, although specific plans for a wider release are still pending. We remain focused on our original goal of creating a resource for use by IPs, and we are eager to get feedback from our colleagues.

The impact of the COVID-19 pandemic has slowed our ability to make the rounding tool more public, and it has also made us realize we should probably add a short section about IPC practices in dialysis units during a pandemic or outbreak.

As we learn and experience more in the realm of dialysis, this rounding tool will inevitably be edited and revised. Looking forward, I would like to develop a companion guide to the tool that outlines the origins of each component. I believe this will help reinforce the validity of the tool and provide answers to questions as they arise.

Our goal is to improve IPC practices within dialysis units by making it easier for IPs to perform comprehensive rounding in this environment. The tool also allows IPs to provide feedback to stakeholders on practices that are increasing infection risks in their facilities. This whole experience has helped shape my understanding of a specialty that wants to keep their patients safe and improve their outcomes. PS

Jessica Rindels, MBA, BSN, RN, CIC, is an infection preventionist at Children's Mercy Hospital in Kansas City, Missouri.

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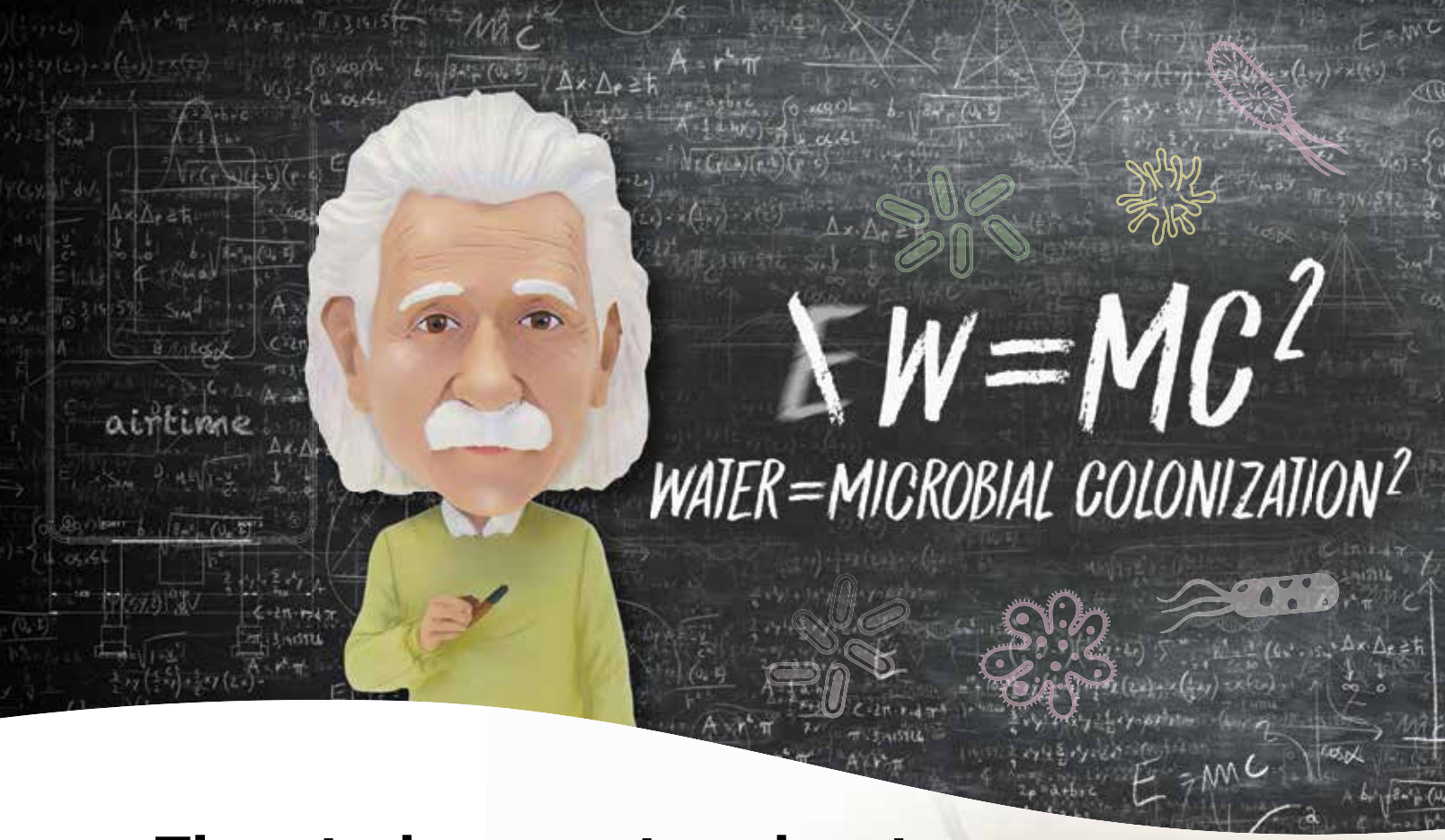

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Easy-to-handle tablets. Compact, convenient, and easy-to-dilute form. More sustainable.

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