ENVIRONMENTAL SERVICES

The Role of HEALTH CARE LAUNDRY in Infection Prevention

COVID-19
Long COVID-19, Variants Still Sounding the Alarm

PREVENTION
IP Collaborative Effort: Patients, HCPs, Family

HAND HYGIENE
Albeit Rare, I’ve Been Known for Centuries

CONFERENCE COVERAGE
Celebrating 50 Years: APIC 2022

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# TABLE OF CONTENTS

## LITERATURE REVIEW

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH CARE–ACQUIRED INFECTIONS</td>
<td>Did Stethoscope Hygiene Improve Before and After COVID-19?</td>
<td>8</td>
</tr>
<tr>
<td>ENVIRONMENTAL SERVICES</td>
<td>Global Survey Reveals Systemic Environmental Hygiene Challenges</td>
<td>9</td>
</tr>
<tr>
<td>COVID-19</td>
<td>Testing Biosafety Measures Should Be Appropriate, Not Excessive</td>
<td>10</td>
</tr>
</tbody>
</table>

## IN ADDITION

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Publisher’s Note</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Bug of the Month</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>In the News</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Interactive News</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Product Locator</td>
<td></td>
</tr>
</tbody>
</table>

## FEATURES

### PREVENTION

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Infection Prevention: A Collaborative Effort Among Patients, HCPs, and Family Members</td>
<td>24</td>
</tr>
<tr>
<td>24</td>
<td>We Need a Revolution</td>
<td></td>
</tr>
</tbody>
</table>

### COVID-19

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Long COVID-19 and New Variants: Sounding a Continuing Alarm</td>
<td></td>
</tr>
</tbody>
</table>

### LONG-TERM CARE

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>How COVID-19 Changed the Nursing Staff at a Hawaiian Nursing Home</td>
<td>16</td>
</tr>
</tbody>
</table>

### CONFERENCE COVERAGE

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Highlights From APIC</td>
<td></td>
</tr>
</tbody>
</table>

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Infection Prevention Is a Team Sport

Nurses and infection preventionists are the public face of contagion control because of their presence on the front line, working directly with clinicians and other health care professionals to reduce the risk of infection and optimize patient care. But infection prevention as a practice is a shared responsibility, not just for those behind the scenes at a hospital—like environmental services teams, laundry services, and sterilization technicians—but also for patients, their caregivers, and their loved ones.

Everyone has a role to play.

This issue of Infection Control Today® shines a light on some of the people behind the scenes. On page 16, Brooke K. Decker, MD, director of the Hospital Epidemiology Service, examines the role that health care laundry plays in the battle against bacteria.

On page 24, Heather Saunders, MPH, RN, CIC, director of infection control for the Office of Population Health at Johns Hopkins Medicine, introduces a series on the art of prevention. Her first observation? “We need a revolution.”

Rising star Saskia v. Popescu, PhD, MPH, MA, CIC, explains why collaboration among patients, their families, and health care workers is crucial (page 20), and Linda Spaulding, RN-BC, CIC, CHEC, CHOP, shares a few first-person accounts of the pandemic’s effect on the way staff at a long-term care facility in Hawaii perform their work (page 22).

We round out the issue with coverage of the annual meeting of the Association for Professionals in Infection Control and Epidemiology, which was held on June 13-15 in Indianapolis, Indiana.

We want ICT® and its content to reflect our diverse audience. Please send your comments and ideas to Alexandra Ward, vice president of content, at award@mjhlifesciences.com.

Thank you for reading our journal.

Mike Hennessy Jr
President and CEO
MJH Life Sciences®
I May Be Rare, but You’ve Known About Me for Centuries

BY TORI WHITACRE

I am the RNA virus responsible for an infection recorded as far back as 640 BCE by Chinese physicians and for an outbreak on the island of Thasos around 410 BCE documented by Hippocrates and described in the first volume of his *Epidemics*.

In the fewer than 20,000 cases I cause in the US every year, treatment consists of symptom relief and bed rest (no antiviral is available), and recovery takes about 2 weeks. My incubation period is between 7 and 25 days (averaging 16 to 18), one-third of infections are symptomless, and between 20% and 40% cause only fever and mild respiratory distress. However, vaccination and isolation can protect against me.

The most common symptoms in both children and adults are swollen and/or tender parotid glands, difficulty chewing, testicular pain and tenderness, fever, headache, muscle aches, lethargy, and loss of appetite. Because the symptoms resemble those of other conditions, a health care professional may take a saliva and/or urinary culture to confirm diagnosis.

Fortunately, your prognosis is usually excellent (full recovery), and death and long-term complications are rare. The overall case-fatality rate is 1.6 to 3.8 people per 10,000, but deaths typically occur only in those who develop encephalitis. Although reinfection is possible, it usually results in milder symptoms.

Humans are my only natural host; I am highly contagious and spread easily in densely populated areas (particularly in schools, barracks, prisons, and sports clubs) because I am transmitted through coughing and sneezing, the touching of contaminated surfaces, and kissing or the sharing of drinks. I attack the upper respiratory tract first and from there move on to the salivary glands and lymph nodes, through which I enter the circulatory system and reach the rest of the body. But infection generally comes to an end as your immune system kicks in.

In unvaccinated children, I cause infection most frequently when they are between aged 5 and 9 years. But their symptoms are less severe than those of adolescents and adults. Symptoms and complications are more common in males. Infection in temperate climates is most common in winter and spring, whereas in tropical regions I can attack at any time.

My complications include a wide range of inflammations, most commonly of the testes, breasts, ovaries, pancreas, meninges, and brain, and at least 1 such complication occurs in up to 42% of cases. Testicular inflammation may result in reduced fertility and, rarely, in sterility. Seizures occur in about 20% to 30% of pediatric cases involving the central nervous system, and deafness in about 4%.

I can increase the risk of miscarriage during the first trimester, but I am not associated with birth defects. Rare complications include paralysis, cranial nerve palsies, cerebellar ataxia, transverse myelitis, and encephalitis.

My identity was finally discovered in 1934, and by the 1970s vaccines had been developed to protect against me. Countries that have adopted vaccination regimes have almost eliminated me. But owing to such factors as waning vaccine immunity and opposition to vaccination, a resurgence of cases has been seen around the world, especially among adolescents and young adults.

Who am I?

To discover who I am, visit InfectionControlToday.com/view/julaug-2022-bug-month
Because health care–associated infections (HAIs) are linked to high mortality and high cost, extensive emphasis has been placed on hand hygiene; however, the same is not true for stethoscope hygiene. Previous studies have demonstrated that stethoscopes can be contaminated by infectious pathogens, including methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococcus* (VRE), and *Klebsiella* spp. Furthermore, stethoscopes have been shown to contain the same level of contamination as the hand of a health care provider (HCP), and pathogens on the stethoscope can be transferred to patients when they are being examined.

“Assessing Changes in Stethoscope Hygiene During COVID-19: A Multicenter Cross-sectional Study,” published 2 years ago in *The Journal of Hospital Infection*, investigated this topic to improve stethoscope hygiene and to see how it changed—or did not change—during the pandemic.

Investigators from 3 University of California medical centers (UC San Diego, UC Davis, and UC Irvine) developed a 33-question survey asking HCPs about frequency of stethoscope use, perceptions about their safety, and pathogen transmission associated with them. Investigators obtained demographics data on the respondents, including age, sex, provider type, and years in practice. The survey was divided into 2 parts (before and after COVID-19), and it contained a variety of questions: 5-point Likert scale (strongly disagree to strongly agree), binary (yes/no), categorical frequency, and free responses.

“In this study, we aimed to assess how HCPs’ knowledge, attitudes, and practices surrounding stethoscope hygiene have changed during the COVID-19 pandemic,” the investigators wrote. “Additionally, we aimed to identify provider groups that might be deficient in stethoscope hygiene to identify potential targets for future intervention.”

The investigators discovered that, despite a positive shift in stethoscope hygiene during COVID-19, best hygiene practices were still performed by only approximately half of HCPs. Therefore, the investigators encouraged instruction, especially for providers in the early stages of their careers.

Of the 5022 participants invited, 515 (10.3%) completed the survey, and 55 (1.1%) were excluded for reporting no stethoscope use before or during COVID-19. That left 460 participants (9.2%) in the analysis cohort. Interestingly, 65% of physician respondents (75.9% of cohort) were in general internal medicine, family medicine, or pediatrics, and 11% in medicine/pediatric subspecialties. Eight percent were in emergency medicine, 5% in surgical specialties, 4% in critical care, 3% in obstetrics-gynecology, and 5% in other specialties.

Optimal hygiene increased from 27.4% to 55.0% (P < .001). There were significant increases in Likert scores for all questions pertaining to knowledge of stethoscope contamination (P < .001). Respondent belief in stethoscope contamination increased (P < .001) despite there being
We know very little about health care environmental hygiene (HCEH) practices around the world. But if we hope to improve global health, we must address the topic. Studies have shown that nearly every hospital has problems with HCEH; therefore, investigators must determine baseline HCEH in facilities at all income levels.

Infection Control Today® conducted an exclusive two-part video interview with Alexandra Peters, PhD, MA, lead author of a study titled “Results of an international pilot survey on health care environmental hygiene at the facility level,” which was recently published in the American Journal of Infection Control.1 Peters works in the Infection Control Programme and the World Health Organization Collaborating Center on Patient Safety, at the University of Geneva Hospitals and Faculty of Medicine, in Switzerland.

Because it was “challenging to try to come up with something that was as applicable in a high resource setting as in a low resource setting,” the investigators tried to create a multi-model strategy for environmental hygiene that would help them “see what is going on in health care facilities around the world,” Peters said, adding that “we don’t really have too much information about how things are done.”

They sent out an online survey in April of 2021. “We had this big database of 18,000 hospitals,” she explained, “and aimed for 2 hospitals per country” without looking “at whether they were primary or tertiary care centers [because] this was a pilot survey to see what type of information we [could] get back.”

Peters also gave an overview of the study and what she and her colleagues hoped to learn. In the second part of the interview, she discusses some of the data they collected and what they will be researching in the future.

REFERENCE

Global Survey Reveals Systemic Environmental Hygiene Challenges

“There are a lot of issues [with] access to products and supplies...that’s not anything new. But I think what our survey showed was that there [are] a lot of things that are institutionally malfunctioning, and that [can] be changed without using a lot of additional resources.”

—Alexandra Peters, PhD, MA

REFERENCES
Testing Biosafety Measures Should Be Appropriate, Not Excessive

BY THE EDITORIAL STAFF OF INFECTION CONTROL TODAY®

During the COVID-19 pandemic, Chinese health officials called for nationwide biosafety risk assessments for nucleic acid testing. Biosafety reviews and control reports for other laboratory tests, however, were conducted less often. Biosafety risk assessments should be reinforced before testing the specimens of COVID-19 patients.

“Biosafety risk assessment and risk control of clinical laboratory in designated hospitals for treating COVID-19 in Chongqing, China,” a study recently published in the American Journal of Infection Control, discussed this topic. Chinese health authorities adopted a series of effective measures, including nucleic acid testing of SARS-CoV-2, in large-scale populations and thereby succeeded in diagnosing and treating patients with COVID-19 in a timely manner, which played a key role in controlling the epidemic in China.

The “most important aspect of biosafety risk assessment is to take appropriate but not excessive control measures for biosafety risk against the risks of different hazard degrees, which can not only reduce the risk to an acceptable range but also save resources and improve the work efficiency,” the investigators wrote in the study. “For the same pathogenic microorganism tested in different test activities, the hazard degrees of biosafety risk existing in those test activities are different, and they should be operated in laboratories with different biosafety levels. Therefore, it is inappropriate to unilaterally emphasize that the biosafety level of the laboratory should be consistent with the hazard level of pathogenic microorganisms tested in the laboratory.”

Despite many laboratory heads emphasizing biosafety assessments, those same leaders appear to ignore biosafety risk management after receiving the results. “Even if the subsequent test activities or the pathogenic microorganisms…had changed, the biosafety risk assessment was not restarted, and the biosafety risk control did not change accordingly,” the investigators said, and determined that the residual risk, after initial control measures had been implemented, was acceptable. For them, “biosafety risk management is based on self-inspection and dynamic monitoring.”

If clinical laboratory workers testing for SARS-CoV-2 used a nucleic acid preservation solution containing viral inactivators, the biosafety risk of detecting the nucleic acid of SARS-CoV-2 will be low. Given that patients infected with SARS-CoV-2 in China are sent to designated hospitals for treatment, other laboratory tests, such as bacterial cultures, may be carried out while the patients are being treated. However, the investigators said, in addition to nucleic acid testing, biosafety risks in the testing of these items for patients with COVID-19 might be ignored. “Therefore, we identified and evaluated risks in these detection processes and formulated appropriate, but not excessive control measures for biosafety risk, to improve the work efficiency and prevent biosafety accidents.”

The investigators identified 32 risks in these categories:

- personnel,
- disinfectants,
- testing process,
- biosafety equipment,
- facilities and environment,
- waste after testing, and
- emergency procedures.

Key risks included:

- personal infection or environmental contamination owing to malfunction of airflow or filtration in the biological safety cabinet (BSC),
- environmental contamination or personnel infection resulting from the concentration of improperly selected laboratory disinfectants and unachieved disinfection,
- hands contaminated by specimen tubes that are themselves contaminated during specimen collection or specimen reception,
- items or environment contaminated by hands contaminated when removed from the BSC, and
- microscope lens and stage contaminated by fecal specimen during examination.

Biosafety risk monitoring includes monitoring changes in test activity, pathogenic microorganisms, dose of pathogenic microorganisms used, specimen types, and unidentified risks. The investigators recommend that the laboratory leadership conduct an annual review of the suitability of laboratory biosafety risk assessment and biosafety risk control and begin risk assessment promptly, which is also a key component of risk management.

REFERENCE

Etiology and biology: Monkeypox sounds like an altered version of smallpox, which it is in the sense that it also belongs to the Poxviridae family. Thanks to vaccination, smallpox was declared eradicated in 1980; however, monkeypox remains in underdeveloped parts of the world. Because the enveloped (lipid capsule) poxvirus contains its own transcription machinery and is a double-stranded DNA genome, it is renowned for its large size. Consequently, it can replicate within the host cell’s cytoplasm in conjunction with using its endoplasmic reticulum and ribosomes for latent replication. When the virus duplicates and is ready, it leaves the host cell to infect another.

Transmission: Although it is named monkeypox, animals like squirrels, rats, and mice are also susceptible to the virus. Humans can obtain it from infected individuals or animals, as well as from contaminated materials. Monkeypox is primarily transmitted through contact with infectious sores but also through bodily fluid exchange; it is even possible for the virus to cross the placenta from mother to fetus, as well as through respiratory secretions during prolonged face-to-face contact (such as kissing).

Risk: Dangers of monkeypox in our population can be interpreted in 2 main ways—mortality rate and R naught (R0). The World Health Organization has recorded higher mortality rates (10.6%) in countries without adequate health care facilities, whereas in many developed nations the mortality rate is around 3.6%. These numbers may sound frightening, but the Ro may put you more at ease. The Ro is a rough calculation of how transmissible a disease is from person to person. Although we do not have a precise figure, it is estimated to be less than 1%.

Prevention/treatment: Because monkeypox is primarily spread through physical contact, the following are best practices: Avoid infected individuals or animals; isolate infected patients and use personal protective equipment; keep hands clean with soap and water; and ensure quality environmental services disinfection procedures are conducted with products approved by the US Environmental Protection Agency. Most individuals born before the early 1970s and some others (military members, laboratory staff) may have an 85% immunity to monkeypox if they received the smallpox vaccine. For now, the FDA is evaluating the JYNNEOS vaccine for individuals who may be at high risk of occupational exposure and has approved tecovirimat (TPOXX), cidofovir (Vistide), and VIGIV as antiviral treatments.

All IPs should inform and educate those within their area of influence, and lead the initiative of quality training, procedures, and service. To stay up to date on monkeypox, please visit the CDC’s US Monkeypox Outbreak 2022: Situation Summary, Monkeypox, and Poxvirus pages.

NATHAN DOWLING is an IP for the Snohomish Health District in the state of Washington, focusing on respiratory infections (COVID-19, influenza, respiratory syncytial virus), and other health care–associated infections for more than 735 long-term care facilities.
IN THE NEWS

Top 3 Trends in Health Care Cleaning and Disinfection

BY REBECCA LEACH, MPH, BSN, RN, CIC

The COVID-19 pandemic has contributed to rapid adjustments and innovations in infection prevention and public health practices over the past 2 years. Health care cleaning and disinfection also gained a spotlight as a key piece of the infection prevention program in facilities. Although this was not a new concept for infection preventionists (IPs) and environmental services departments, it brought a public awareness to the various types of disinfectants and to how crucial surface cleaning is in decreasing risk of disease transmission.

Continuously Active Disinfection Chemicals

The first innovation in cleaning and disinfection is continuously active disinfection (CAD) chemicals. Previously, CAD was a focus of materials, not chemicals. Items infused with copper and silver—such as bedside tables, bed rails, intravenous poles, linens, and curtains—were marketed as solutions to contamination of objects and a passive way to break the chain of infection for indirect and direct contact. Ultimately, there were challenges with this type of solution, including cost of implementation and evidence to support effectiveness. A 2016 Emergency Care Research Institute report found that there was not a statistically significant difference between copper-treated rooms and control rooms with no copper fixtures. Based on the review, the return on investment was not evident for having a room full of copper fixtures, let alone an entire ward.

Newer technology with disinfectants that provide continuous activity is emerging and shows promise of being effective with extended kill times, potentially decreasing risk of organism transmission. One such product, a premoistened wipe or spray system, has been shown to actively kill pathogens for up to 24 hours. More studies need to be completed in real-life situations to determine effectiveness of such products; theoretically they would be a less expensive alternative to metal-infused surfaces. Utilization of CADs in areas with high traffic and less frequent cleaning would be ideal, such as emergency department waiting areas, clinic lobbies, hospital chapels, outer areas of procedural and surgical rooms, and nurse and physician charting areas.

Evolution of Delivery Methods

Innovations in disinfection product delivery systems have been developed recently. UV technology is not new, having been introduced as a portable system for health care facilities. However, updates to available products include shorter run times and smaller devices that can accommodate cell phones or stethoscopes. Misting devices that efficiently spread disinfectants such as hydrogen peroxide offer a delivery system ideal for large spaces. Multiple studies have examined use of UV and misting systems, with statistically significant results in reducing adverse patient outcomes. Two main challenges with these systems are cost and workflow constraints. Donors’ contributions or grants may help alleviate costs, but IPs need to work with environmental services and facility leadership to ensure efficient, beneficial use of these devices.

Cleaning and Disinfection of Shared or Reusable Equipment

A challenge for IPs involves the cleaning and disinfection of shared or reusable equipment. Accreditation bodies have increased awareness on this topic, looking at glucometers, stethoscopes, and other equipment and instruments that travel from room to room. Similarly, the updated Association for the Advancement of Medical Instrumentation (AAMI) standard ST91 for flexible endoscopes will transform the way many health care facilities handle scope disinfection, sterilization, and storage. Sterilization of scopes and increased use of disposable scopes will be hot topics as IPs partner with endoscopy and sterile processing colleagues.

As health care environmental hygiene evolves, 1 concept remains consistent: basic practices of cleaning and disinfection by trained staff are a foundation for these latest technologies and updates to standards. Without a skilled environmental services and sterile processing team, adjuncts to daily cleaning and disinfection will be ineffective. As with many infection prevention initiatives, a bundled approach works best to target steps along the chain of infection, improving human and process factors.

REBECCA LEACH, MPH, BSN, RN, CIC, has been an IP since 2010, with a background in nursing and epidemiology. Leach, a member of the Infection Control Today® Editorial Advisory Board, works at a health care system in Phoenix, Arizona, that includes 5 hospitals and more than 100 outpatient treatment centers.

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NEWER TECHNOLOGY WITH DISINFECTION CHEMICALS THAT PROVIDE CONTINUOUS ACTIVITY IS EMERGING AND SHOWS PROMISE OF BEING EFFECTIVE WITH EXTENDED KILL TIMES.
How Patient Personalization Can Aid the Transition to Value-Based Care Models  

BY ATUL KAUSHAL, MD, MBA

Transitioning to value-based care in health care is long overdue. As a former practicing physician, a reason I left primary care was the fee-for-service payment model. At the time, things critically important from a clinical standpoint—quality, outcomes, and patient education and care management—were missing in the management and delivery of patient care.

Even worse, fee-for-service care absolves the provider of responsibility for the outcome of their work, as patients are charged regardless of whether they receive the care they need to solve their health issue. This outdated process doesn't hold up in any other type of business. For example, you wouldn't hire someone to fix the plumbing or HVAC in your home if they don't have any accountability for the outcome. Why shouldn't health care be the same?

Value-based care models place outcomes at the center and make care more equitable for all. Considering that only 10% to 20% of a patient's health outcomes are affected by the health care system directly, a value-based care model requires providers to understand and optimize the other factors affecting a patient's health. Personalizing patient care based on each patient's social determinants of health is no longer a nice-to-have—it's a must.

What Does Patient Personalization Mean?

Patient personalization is at the heart of the value-based care model. Centered on the principles of understanding patients as individuals and tailoring communications that will motivate them to act, good patient personalization strategies leverage data and analytics to understand how best to work with the patient to achieve the common goal of health and recovery. For care providers trying value-based care models, it helps to personalize the patient experience as much as possible to avoid repeat visits to address a patient concern. From a patient engagement perspective, personalization starts with selecting the best communication channels. If you know a patient always sends phone calls straight to voice mail, consider contacting them through text or email. Keep in mind the communication styles to which your patient is most likely to respond—gentle nudges or more direct follow-ups—as well as timing (if they work the night shift, don't call at 9 AM).

Although these factors may not seem significant in patient health, patient outcomes are frequently determined outside a doctor's office. The right communication can make all the difference.

From a clinical perspective, improving patient personalization means taking a complete view of the patient with focus on the social determinants affecting their health. Some patients may not have easy or consistent access to transportation, for example, so providers need to send prescriptions to local pharmacies and minimize the number of patient office visits. For others, every dollar might count, so prescribing a less expensive medicine could be key.

Patient personalization for value-based care is focused on the Medicare and Medicaid populations; private insurers have yet to adopt this model widely. This is good news because it covers vulnerable populations, but these populations are also likely to have more social factors like variability of health and technology literacy, financial status, and trust in the health care system affecting their health. This makes individual assessment of each patient even more critical to determine the best course for treatment.

Accelerating Patient Personalization Capabilities

Accurate, real-time data is a critical component of building more personalized experiences. Health care organizations that want to support their switch to value-based care by improving patient personalization should start with an assessment of their current technology environment and data sources. It's important to ensure your technology stack supports integration of electronic health record data that reports on a patient's physical health (medical history, recent procedures, and medications). Records also should include broader data on the social factors of health for each patient to better customize care and minimize visits.

Once technology needs are resolved, health care organizations will also need to implement a process for analyzing these combined data sets to drive action. A great way to get started is to have a conversation with an experienced data and analytics team, whether in-house or a third-party vendor. They can review available data to develop personalized care strategies, suggest additional data sources that could improve patient personalization, and build algorithms to make analysis less manual for health care providers. That way, providers can focus on practicing medicine, backed by data-driven insights into how best to treat their patients.

Overall, patient personalization is critical to a successful value-based care model. Organizations that invest in improving patient personalization today will reap the benefits as the value-based care model inevitably expands in the public and private sectors. It's time for health care to focus on outcomes, not dollars.

ATUL KAUSHAL, MD, MBA, is clinical innovation consulting lead at NTT DATA Services.

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The hospital is a busy place, full of myriad devices and complex situations. Preventing hospital-associated infections (HAIs) feels like it requires an encyclopedic knowledge of every new and complicated health care intervention. Potential sources of HAI-transmission in the hospital include a remarkable array of specialized risks, but there are mundane, everyday risks like health care laundry, too.

Which textiles are reused and laundered varies from health care facility to health care facility. Typical health care linens include patient and staff bedding, towels, clothing (scrubs, coats, uniforms, patient pajamas, and gowns), surgical drapes, curtains, and reusable mop heads. Hospital linens can harbor a significant density of pathogenic organisms, from $10^6$ to $10^8$ colony-forming units/100 cm². Those most commonly isolated include gram-negative organisms (Enterobacteriales, Pseudomonadaceae) as well as Staphylococcus species.\(^1\)

Despite this noteworthy pathogenic burden, the significance of linens in HAI transmission is unclear. When an infection occurs, it may not be possible to identify the exact environmental source of transmission because multiple potential environmental reservoirs exist in parallel. Although health care linens are not often implicated, it makes intuitive sense that they are a potential reservoir for transmissible organisms.

Workers who handle laundry are at increased risk of HAI transmission, including gastrointestinal pathogens.\(^2,3\) Definitive associations between linen contamination and patient infections are harder to parse. Nevertheless, there is a need for meticulous attention to maintaining linen cleanliness.

Removal

Ensure linens are removed, stored (if necessary), and transported safely to the cleaning facility. Soiled linen poses a danger to health care staff and possibly to patients. All used linen should be considered potentially infectious. Linen should not be shaken or disturbed in a way that could aerosolize infectious particles. Personal protective equipment that would be worn around the patient should also be worn when removing and packaging soiled linen for transport. If there is gross contamination without transmission-based precautions, standard precautions will necessitate the use of additional personal protective equipment.\(^6\) Some infections, including orthopoxviruses, are transmitted by contaminated linen.\(^7\) Linen should be contained before removal from a patient’s room, taking care not to disturb or aerosolize any infectious particles. Note should be made that the exterior of bagged linens may become...
Workers who handle laundry are at increased risk of transmission, including gastrointestinal pathogens. Definitive associations between linen contamination and patient infections are harder to parse.
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Infection prevention has never been a “1-person show,” even if it often feels that way. Many of us who work in infection prevention and control (IPC) look at things not only through the lens of an infection preventionist (IP), but also through those of family members, friends, and even patients. This vantage point helps us to better implement prevention efforts and to see things from perspectives that are not incorporated into traditional IPC protocols. Collaboration is key. It’s that simple—and yet not that simple. Full transparency requires I disclose that I’ve also been an infection patient and a relative of such patients. But as someone who utterly loves what she does, I have seen the worst and the best parts of the job, particularly during the COVID-19 outbreak. Before delving into the topic of collaboration, it’s important to address what is palpable in our community right now: fatigue and a feeling of disconnect and discontent.

A far more than 2 years, the pandemic has shed light on how ill-prepared hospitals are for such events, let alone our capacity to handle the fatigue that comes with the marathon that a public health crisis entails. I also want to say what generally goes unsaid: IPs have been wildly overlooked during this pandemic. We are the first advocates for health care workers (HCWs), but we often feel that our role is seen as that of an adversary rather than an ally. IPs are the ones doing the training on personal protective equipment (PPE), translating new guidance into practice, working with families and patients, in short, implementing COVID-19 IP measures on top of our daily work.

I share this because it can be isolating to feel as though your role is ignored even though it supports the response to a global event. This sentiment and our experiences during COVID-19 will likely impact the face of IPC in the future. We’re in uncharted territory; we’re not out of the pandemic, but everyone seems to have decided it’s over. The changes in public perception and sentiment toward COVID-19 are telling in terms of how we handle health, infection prevention, and nonpharmaceutical interventions.

The Collaboration Triad
It is obvious that IPC cannot be accomplished by any one group, but too often we forget the critical nature of collaboration. There is a triad, which is made up of the health care worker, the family/support system, and the IP, and the patient sits within that triad. From prevention to response to follow-up, one of the IP’s most important partnerships is perhaps with the patient. Outside of rounding, I often felt that my time with patients wasn’t really the main focus of my work. The truth is that taking the time to discuss isolation status, strategies for discharge, and safety once at home can go a long way to prevent the spread of any infection. It’s very important to talk to patients about why they’re in isolation and how they can keep their loved ones safe.

IPC has a unique role to play in that we not only liaise with community-based infection prevention but also advise on alternative hospital practices. For instance, we work with patient, child life, and social services to ensure that a patient who is feeling lonely owing to isolation can video-chat with family or have window-based visits and sometimes to teach the family to properly don PPE for special visits. Helping patients understand the importance of proper infection prevention habits for the invasive devices they may be discharged with is also a way to prevent both health care–associated infections and community-associated infections. Although IPC may not be directly involved in patient care, we can give them the tools to stop the spread.
The HCW side of the triad is so essential eager to ask us questions. realize IPC is a discipline in itself and are discussing infection prevention. You’d using that time to chat with patients and rounding with pet therapy services and interventions/therapy.1 Personally, I liked by the handling of pets or animal-assisted therapy. Ensuring sufficient supervision is provided to children with childhood illnesses being brought into the home or childcare setting. Supervisory rules include the type/number of visitors with associated restrictions as applicable, preventing exposure to children with childhood illnesses being brought into the home or childcare setting. Ensuring sufficient supervision is provided by the handling of pets or animal-assisted interventions/therapy. Personally, I liked rounding with pet therapy services and using that time to chat with patients and families while handing out hand sanitizer and discussing infection prevention. You’d be surprised how many people don’t realize IPC is a discipline in itself and are eager to ask us questions.

The IP-HCW Relationship
The HCW side of the triad is so essential that it feels almost comical to discuss it. Chapters could be written on the importance of their role in IPC, from perioperative care to PPE use to hand hygiene and antimicrobial stewardship. Did I mention proper cleaning and disinfection? Those are also obvious requirements, so I want to highlight another equally indispensable factor: sustainable IPC. Nearly 30 months into the pandemic, the appetite for PPE and for dealing with infectious diseases has waned. But the diseases haven’t gone away. In fact, we’re now facing the largest global spread of monkeypox ever seen, continued COVID-19 transmission alongside a diminishing interest in vaccines and nonpharmaceutical interventions, and an exhausted health care and public health workforce. So I want to spend time talking with health care workers, not at them, asking them what their concerns are and where they feel we can improve or have excelled.

Donning PPE before entering a room or waiting for a disinfectant wipe will never be the most fun thing in the world, but COVID-19 has shown us that sustaining these interventions will be our biggest hurdle. How do we get HCWs to continue caring while managing all their other work? I’ve asked them this very question. Building trust and empathetic relationships is critical for IPC-HCW collaboration and success. We depend upon them to remember the importance of infection prevention, and it’s OK to remind them of it, but without placing yet another burden on them. This is also why I like taking time to talk to patients and families, as it often lightens the health team’s duties.

After all, if one side of the triad is weak or fails, the rest collapses. It takes all of us to protect patients.

Collaboration calls for continuous work, not just interaction with our teammates in health care, but also with patients and their families/support system. It is not easy, and it often requires us to adjust our communication strategies.

Conclusions
Collaboration in this area calls for continuous work, not just interaction with teammates in health care, but also with patients and their families/support system. It is not easy, and it often requires us to adjust our communication strategies.

Although communication, conflict resolution, and discussion of the science are vital components of IPC, we rarely talk about them. When considering collaboration as a means to prevent infections, we must look at every side of the triad and the bond between them. This quote by Epictetus should resonate with us all as we work to build these crucial relationships: “We have 2 ears and 1 mouth so that we listen twice as much as we speak.”

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Reference

Loved Ones and Caregivers
Having relatives or caregivers on the IPC team can keep the patient safe, but that person can also serve as a good resource to remind patients or to ask important questions. Engaging with children is necessary, of course, but much pediatric care and support is achieved by interacting with their family or guardians, who are often the first to know when something is “off” with a child. Working with them to incorporate IPC strategies in the hospital—and at home—is vital. From line care to surgical wound cleanliness, and even hand hygiene, having a comprehensive approach that involves family and caregivers ensures that there is a team rallying around the patient. IPC can help discuss immunizations, at-home measures like chlorhexidine gluconate baths if needed, and infection prevention.

As Koutlakis-Barron and Hayden note, there must be awareness outside the health care setting: “Minimizing exposure to infectious organisms in the home, childcare/daycare/school settings, or recreational centers will help reduce risk. Supervisory rules include the type/number of visitors with associated restrictions as applicable, preventing exposure to children with childhood illnesses being brought into the home or childcare setting. Ensuring sufficient supervision is provided by the handling of pets or animal-assisted interventions/therapy.” Personally, I liked rounding with pet therapy services and using that time to chat with patients and families while handing out hand sanitizer and discussing infection prevention. You’d be surprised how many people don’t realize IPC is a discipline in itself and are eager to ask us questions.
In Their Own Words: How COVID-19 Changed the Nursing Staff at a Hawaiian Nursing Home

BY LINDA SPAULDING RN-BC, CIC, CHEC, CHOP

Studies show that the potential for moral injury to health care workers working with COVID-19 is relatively high, leading to burnout and impairing mental health. I asked my clients at a nursing home in Hawaii to tell me how the pandemic had affected them. They wrote this article.

March 2020 is a date that is forever imprinted on our minds, hearts, and the history books. Those of us who dedicate our lives to the world of long-term care and caring for our kupuna [elders], we all shared a heightened sense of fear and anxiety, as we watched the introduction of SARS-CoV-2 (COVID-19) to long-term nursing facilities. A virus that changed the landscape of what we do. COVID-19 continued its relentless spread throughout the world, nation, and facilities, infecting millions and killing hundreds of thousands more. The long-term care industry was facing its fiercest challenge yet: to protect a population burdened by frailty.

For all of us in long-term care, work increased exponentially, with expanded regulatory compliance, health care staffing shortages, personal protective equipment shortages, and an unknown coronavirus. We found ourselves immersed in the stresses and fears of working in a crowded facility, asking ourselves and each other, “How do we survive each day, each shift, each hour, and keep our residents and ourselves safe?” It is difficult to put into words the hardships we faced and the relentless burden we endured. Only those who were, and are, in it, can understand the painstaking tasks we accomplished to battle this historic pandemic.

Two years later, we continue to fight COVID-19. We still face the challenge to protect our residents and staff. We still endure stress, fear, and surges of new variants among our population. All of this has become part of our daily routines and changed the way we view our work and our lives. Recently, our team took a step back to reflect. A common thought: “I can’t believe it’s been 2 years already.” A common question: “How did we get through this?” There is no simple answer, but to put it simply, teamwork and revising the way we view and approach the work we do.

It difficult to say that there is a silver lining that will save many more. As our team reflected, many positives surfaced to realization. First, we truly learned the meaning of teamwork. We broke down walls, silos, and the division of duties among departments to become 1 team, 1 facility. As Pam Calilao, medical records manager, put it, “During the outbreak, you’re not just ‘medical records’ anymore. You quickly learn how to do patient care, test your fellow co-workers for COVID-19, correctly wear your PPE. You become a member of the COVID-buster team to promote cleanliness in the facility.” Rachel McKean, Admissions Coordinator, added: “Our team worked so well together and put in so much work to get COVID-19 out of the building. Teamwork literally makes the dream work.”

Secondly, we all felt an increased responsibility about the work we do, and had a different perspective with how we approach it. Lindsey Oroku, a registered dietitian, shared her thoughts: “COVID-19 was a rude reminder to be grateful—grateful to have a job, grateful to have a job that helps others, grateful for health. Many people lost their jobs and the ability to live carefree, lost loved ones, and went through—and continue to go through—tough times. I feel like it’s better to go through tough days than tough times.”

Christina Seto-Mook, another registered dietitian, noted, “We knew so little about this virus and how much chaos it would create in our professional and personal lives. We learned how to be...
more flexible. It was great to see everyone working as a team and really putting in the effort to keep our residents safe. It wasn’t just about getting our own work done but about helping each other and taking that extra mile. Adaptability was another crucial aspect of managing COVID-19, as we were all experiencing and learning how to get through this unforgettable time together.”

Two years of this pandemic has developed strength, belief, and courage within all of us. We carry ourselves, our team—our ohana [family]—with pride, owning the hand we’ve been dealt, and conquering the adversity we have faced. Our accomplishments have strengthened our bond, cemented our goals, and taught us the true meaning of ohana. COVID-19 has forever changed the landscape of what we do. But the bond we have built during this pandemic—the team, the support, and empathy, will last forever. It has guided us through an adversity, unlike any other, and we believe that we can continue to conquer any challenge before us.

The words of Leina’ala Pilares, registered nurse and staff educator, sums up our pride, “Two years of unknowingness. I look into their [patients’] eyes, and I see hope. I go on for another day. Why? To protect the things I love. I have no fear when I choose to love and protect. I kept myself safe, isolated, and clean to protect my people and the residents I care for. Why do I work so hard? Because when I go to work, the next day I want to see the same faces I saw the day before. And then I tell myself, ‘COVID-19, you will never be welcome in my home. I have no aloha [love] for you. I stand proud to have kept you out of my homes for another day. E ku kanaka!’ (We Stand Tall!)

We have struggled, endured, battled, and wept. But we have also empathized, bonded, rejoiced, and overcame. We found courage and strength within ourselves that we did not know existed. We continue to grow, to be grateful, and to be committed to health care, long-term care, and our kupuna. The lessons we learned hardened our foundation to overcome any adversity to provide the best care for them, and we look forward to doing this for many years to come.

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I’d like to tell you a story about a lady with white hair. At least I think she had white hair. It’s certainly one of the attributes I remember most about her. She was short, she had white hair, and she always had a scowl on her face that seemed to say, “Stay away, I bite.” She carried a clipboard with her everywhere, and her eyes would follow you like a hawk circling prey. She’d scribble furiously on the sheet of paper on the clipboard. And I remember always wondering what she was writing.

I was 20 years old at the time and, somehow, had landed myself a job in the emergency department as an emergency room (ER) and trauma nurse. ER nursing had been my first love, so I was surprised when I found a career that I loved even more. I sometimes wonder what my 13-year-old self would have thought if someone had told her she would grow up to prevent and control infectious diseases. I don’t know that I would have believed them at the time; I was still convinced that I was going to be a musician. But I digress.

I had no idea what the lady with white hair did at our hospital, but she was absolutely adamant that I wash my hands every time I entered or exited a patient’s room. And that’s another thing—I couldn’t figure out whether she wanted me to wash my hands or use the hand sanitizer. Sometimes I would use the sanitizer, and she’d get mad that I hadn’t washed my hands. Other times I would wash my hands, and she’d remind me that I could have used the hand sanitizer. Because we didn’t know her name, we all endearingly referred to her as “the handwashing lady.” When she arrived on the unit, the charge nurse would send a message to everyone’s phone that read, “The handwashing lady has arrived.” This would cue all of us to make sure we paid attention to washing our hands as we went about our work.

It wasn’t until years later that I would...
understand exactly what the handwashing lady was doing during her visits to the ER. It dawned on me one day during my first year as an infection preventionist that I was now the handwashing lady. However, the issue is not so much what the handwashing lady was doing and the science behind it, but how she was doing it. What a shame that I didn’t know her name, the importance of her job, or the reason for her visiting the ER. Friends, if I’ve learned anything in my career, it’s that infection prevention is 20% science and 80% implementation of that science. If you want to succeed at preventing and controlling infections, you must master the art of implementation. I know that I washed my hands more because of the lady with the white hair, but my adherence was driven far more by fear than by recognition of the importance of hygiene.

I continue to see this scenario play out as a research nurse and consultant in infection prevention and control. We are trying to help people prevent infections who don’t even know we’re there to help them prevent infections. All they see is a man or a woman with a clipboard, telling them to wash their hands. Obviously, there is a huge disconnect here; something is missing, and that something is in our approach. We’re missing a fundamental understanding of human nature. I’m sure the lady with the white hair meant well, but we didn’t know that. I think she knew what she needed us to do to prevent infections, but she didn’t know how to get us to do it. She didn’t take complicated, messy humanity into account.

Take a moment to think about one of your habits and what drives it. Would it be helpful if someone said to you, “Stop doing that. It’s bad for you.” Not really. But why? Because they are not addressing the underlying reason or reasons for that behavior. In health care, we must understand what drives adherence and nonadherence. Is it fear? Convenience? Money? Discomfort? A knowledge gap? Is it politics? Are past experiences influencing current actions? If we want to change behavior, we must recognize that people are complex. We cannot simply tell someone to do or not do something and expect immediate adherence. Instead, we must first understand the human factors that affect the behavior we’re seeking to influence.

My friends, this is why we need a revolution. We know what we need to do to prevent infections, but we need to change how we do it. We’re forgetting that to prevent infections we must change the habits, perceptions, and knowledge ingrained in people and institutions. And people are so incredibly complex. I’ve already mentioned this, but I want to emphasize it. People are messy and complicated and confusing. We are filled with fear, insecurities, opinions, and habits. If we want to prevent infections, we must get to know and understand people, not just the science of infection prevention. On the surface, infection prevention and control is just science, but it’s really an art more than a science. The science of preventing infections is merely the tip of the iceberg. Underneath are people—complicated, messy people—and our approach to helping them prevent infections is key.

We need to change that approach. We talk a lot about what people must do: wash the hands, take the medicine, clean the hub, wear the mask. But we need to better understand how to get them to do those things. This is what I like to call “the art of prevention.” In this series of articles, art will meet science. Learning to practice this art requires us to continue learning about science because, regardless of how well one understands people, one must first understand the discipline of infection prevention. We’ll also explore human factors, psychology, and finally—possibly most importantly—personal growth. I know what you’re thinking: “What does personal growth have to do with preventing and controlling infections?” Quite frankly, everything. Infection prevention is not an easy job. To be successful in this career, we must have strong interpersonal skills and be able to handle conflict and defeat, competencies everyone can develop with time and guidance.

I’m eager for you to join me as we explore the complexities of being human in the context of infection prevention and control. My hope is that you’ll grow as a person and as a professional. This month, I want to challenge you to become known. Get out there and introduce yourself as the infection preventionist. Strike up a conversation with the environmental services worker. Tell them your name, make small talk, and share with them why you love what you do. Commit to not being known as “the handwashing person.”

Until next time. ☑️
The news regarding the SARS-CoV-2 pandemic has been very concerning on two fronts. The first is the recent evidence regarding the immune-escape properties of the newly surging variants, BA.4 and BA.5, and the second concerns the growing dangers of long COVID-19.

The potential for infection, reinfection, or breakthrough infection with BA.4 and BA.5 is alarmingly high. Yes, this viewpoint is sounding an alarm. Two recent news articles from the Times of Israel and the Independent have reported rising rates in Israel and the United Kingdom, with increases in hospitalizations. These reports are supported by recent laboratory evidence published in the New England Journal of Medicine, which found that “data show the BA.2.12.1, BA.4, and BA.5 subvariants substantially escape neutralizing antibodies induced by both vaccination and infection.”

In addition, the BA.4 and BA.5 variants may be the most infectious variants to date. Infectivity can have more of an impact on society than a high case fatality rate. As evidenced by the United States’ COVID-19 death data, an individual’s chances of dying from the Omicron (BA.1) variant was greater than from the Delta variant. Participating in high-risk activities during Omicron was more likely to result in a severe outcome and death. For individuals who had infection or vaccine-induced immunity, once infected with BA.1, the disease may have been milder. However, for others, BA.1’s lethality was comparable to that of previous variants.

Even as many of our policymakers have focused on deaths, long COVID-19 is continuing to take a toll on society by impacting multiple organ systems. Long COVID-19 has been found to occur in 30% of patients treated for COVID-19, and up to 70% have symptoms of brain fog, memory, or other cognitive problems. It also can have a profound impact on the heart and other organs. Long COVID-19 is also responsible for approximately doubling COVID-19 deaths, with 8.39 per 1000 additional deaths occurring after the acute infection. In addition, biomarkers are now starting to emerge in patients who have long COVID-19. A report from Harvard Medical School found viral antigens in the serum of patients with long COVID-19 up to a year after their acute infections, which may indicate an ongoing subacute active infection. Noted in a report from Australia, investigators identified biomarkers associated with kynurenine pathway activation in patients who suffer from long COVID-19 with cognitive decline.
Even more concerning is the report that vaccines provide suboptimal protection for most long COVID-19 symptoms, which specifically includes the following:

- Beyond 30 days after the acute illness, the risk of death after a breakthrough infection is significantly decreased compared with an infection in an unvaccinated individual (Hazard ratio [HR], 0.66, or a 34% decrease in risk). However, there is a lesser effect on other delayed sequelae (HR, 0.85, or a 15% decrease in risk).

- Compared with noninfected controls, patients with breakthrough infections “exhibited increased risk of death and postacute sequelae in the pulmonary and several extrapulmonary organ systems.” This was also observed in nonhospitalized patients.

- Compared with nonvaccinated patients with SARS-CoV-2, those with breakthrough infections also showed a lower risk of death and postacute sequelae. The risk reduction was more evident in hospitalized patients.

- The burden of disease in those patients with breakthrough infections is not trivial. Vaccination only partially reduces risks and has the same range of long COVID-19 involving several organ systems, “including cardiovascular, coagulation, and hematologic, gastrointestinal, kidney, mental health, metabolic, musculoskeletal, and neurologic disorders.”

  However, most concerning is that repeated infections are reported to have an additive effect, resulting in a stepwise progression of disease with each infection. Presumably, this is due to added damage to the involved organs.

  All the studies regarding long COVID-19 have data acquisition periods before the BA.4 and BA.5 variants—variants that may be even more problematic. Thus, the world has a highly infectious variant, having an uncertain case fatality rate but with overseas reports of increased hospitalizations. This, combined with disturbing new data on long COVID-19, dictates we must be on the side of caution and maintain strong public health guidance, including the use of N95 masks and improving ventilation in all indoor settings. Vaccinations, although weakening, are still advisable because they are low risk and may still make the difference between hospitalization, death, and being treated at home. Medical professionals and infection preventionists know how this virus spreads and how to mitigate its impact. Now more than ever, it is important they maintain strong messaging, which encourages the following of public health measures.

KEVIN KAVANAGH, MD, is the founder of the patient advocacy group Health Watch USA and a frequent contributor to Infection Control Today®.

REFERENCES AVAILABLE AT INFECTIONCONTROLTODAY.COM
To overcome the barriers to hand hygiene (HH) adherence among health care workers (HCWs), we must first understand nonadherence at the individual level, particularly in the intensive care unit (ICU).

Investigators at the University of Louisville set out to gather data on HH behavior and patient contact time among ICU HCWs using an electronic sensor-based system called Sanibit, developed by Microsensor Labs. The wearable wristband works with location sensors throughout the hospital, tracking HH and HCW behavior and then syncing with an app that analyzes individual performance. The data were presented last month at the annual conference of the Association for Professionals in Infection Control and Epidemiology.1

"The takeaway from this study is . . . that there is significant individual variation by day of the week [and] by hour of the day," Jiapeng Huang, MD, PhD, told Infection Control Today® in a video interview.

Data from 12 nurses, 2 patient care assistants, and 1 secretary at a 10-bed surgical ICU were analyzed to track HH adherence by day of the week, hour of the day, dispenser location, and patient care duration. A total of 27,692 interactions were recorded over a 6-month period. Notably, investigators found that HH was performed more regularly upon exiting than upon entering a patient’s room (37.3% vs 26.1%; \(P < .001\)).

Overall, investigators note that their findings reinforce the need for continual education and reminders that are specific to HCWs, time, and location.

“Technology is just a tool,” Huang said. “If you just buy the technology, your HH will not improve. You have to have the entire package. . . . The more we study HH, the more complex we realize it is.”

REFERENCES AVAILABLE AT INFECTIONCONTROLTODAY.COM

For more coverage from APIC 2022, visit www.infectioncontroltoday.com/conference/apic
Innovative Gowns Are Better, Cheaper, More Sustainable

BY TORI L. WHITACRE

The COVID-19 pandemic created a shortage of personal protective equipment (PPE) in facilities across the country. The second most frequently used PPE, the isolation gown, was especially scarce. Healthcare workers used whatever was on hand that fit infection prevention requirements. However, a nonprofit organization called Inova Health System formed a multidisciplinary team to design a gown that would fit better, be sustainable, and offer greater protection to frontline workers than any other brand.

Infection Control Today® (ICT®) spoke with Lucy He, director at Inova Health System, and Michelle Peninger, Inova’s assistant vice president of infection prevention, who presented their findings at the 2022 annual conference of the Association for Professionals in Infection Control and Epidemiology (APIC).1

“As part of our COVID-19 response team, we had a . . . PPE committee that started working on a sustainable solution for isolation gowns,” Peninger told ICT®. “It took a little less than a year for it to come to fruition. There was a lot of work that went into planning . . . researching, and creating the gowns. But it was born out of a necessity to provide appropriate PPE for our team members.”

A key innovation of the new design is a simple pull cord. “In previous gowns, there’s a tie in the back that you'd have to undo,” Peninger said, explaining that untying it could be difficult for some people. However, “this new gown has a pull cord on the left shoulder. In 1 swift motion, when you pull down, that automatically will undo the snaps in the back. So that pull cord is something that we've not seen in isolation gowns before.”

At the APIC conference, ICT® also spoke with Jonathan Maloney, cofounder of La Forma Medical, which manufactures the gowns. Maloney is proud of the pattern, design, and style that emerged through La Forma’s collaboration with Inova. He emphasized the sustainability of La Forma’s operations and the gowns’ lower carbon footprint compared with disposable ones. For Inova, the savings were 52% for isolation and 80% for surgical gowns. The garments are rated for 100 washes, but La Forma recommends 50 washes for isolation gowns and 75 for surgical gowns.

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Workstations on Wheels: Arm Used for Moving Carries Highest Bioburden

BY ALEXANDRA WARD, MA

Hospitals rely heavily on portable medical equipment like workstations on wheels (WOWs). However, these machines are prone to contamination by healthcare workers (HCWs) and could function as fomites for healthcare–associated infections (HAIs).

To learn more about the potential danger, investigators at Central Texas Veterans Healthcare System conducted a longitudinal assessment of contamination patterns on WOWs. They presented their findings in a poster during the annual conference of the Association for Professionals in Infection Control and Epidemiology.1

“Periodic disinfection of equipment is required in most hospitals, but multiple surfaces on equipment may not be adequately disinfected all the time. In addition, the complexity of demands on staff may limit their ability to properly disinfect equipment,” the team reported. “The purpose of this study was to determine if current disinfection practices were effectively managing bioburden on WOWs in our hospital wards.”
Because instrument sterilization is crucial for every health care facility that offers surgical or invasive procedures, the place where sterilization takes place is important for infection preventionists (IPs) and operations managers (OMs). Everyone and everything—the process, the OM, the IP, and, most importantly, the patient—benefits when IPs and OMs collaborate and understand the advantages of integrating operating models.

Sterilization can be performed at a hospital’s central processing department (CPD) or at an ambulatory facility CPD. Jenny Hayes, MSN, RN, infection preventionist at the Hospital of the University of Pennsylvania, spoke about sterilization at this year’s Association for Professionals in Infection Control and Epidemiology conference.1 "Moving Sterilization Off-Site" addressed the challenges and the role of IPs Should Serve in Off-Site Sterilization Policy Development/Compliance

BY TORI L. WHITACRE

Using press plates assigned at random, investigators collected bioburden data over a 4-week period from a total of 10 WOWs on 3 hospital units. Samples were taken Mondays through Thursdays at 9 AM, 12 PM, and 3 PM. The areas sampled were the keyboard, mouse, arm, and tray. Investigators calculated aerobic bacterial colony counts after 24 hours of incubation and used Bayesian multilevel models to estimate the mean bioburden and compare it across locations.

Technicians had planned to collect a total of 480 samples, but 28 were lost because the equipment was in use or could not be found. After modeling, the estimated mean colony count and 95% UI for press plates was 29.2 (range, 16.1–51.1). Estimated mean colony counts were much higher for the arm of the WOW (58.8 [range, 35.2–91.2]) than for the keyboard (24.7 [range, 14.5–37.2]), the tray (17.0 [range, 10.0–26.4]), and the mouse (12.5 [range, 7.4–19.3]).

“The IRRs for keyboard compared to arm was 0.43 (0.32–0.55), for tray compared to arm was 0.29 (0.22–0.38), and for mouse compared to arm was 0.22 (0.16–0.29),” investigators reported.

The bioburden disparities among areas sampled could mean that HCWs are not practicing proper hand hygiene before using or moving WOWs, but it could also reflect a difference in manual cleaning methods or the number of times the areas are touched.

“It is also possible that the differences in bioburden levels among these locations is due to the sampling process rather than the result of... bioburden accumulation... as the keyboard and mouse may be more difficult to sample with a press plate,” the research team concluded. “The correlation of bioburden to HAI transmission was not studied here, so the significance of bioburden alone in the absence of HAI monitoring is uncertain.”
Infection preventionists (IPs) have unique and valuable knowledge and should be consulted during the design and development of any new health care facility. But because they are all too often overlooked, IPs must fight for a seat at the design table.

Rachel E. Frederick, MPH, RN, infection preventionist at Inova Health System, presented “In on the ground floor: Involving IP in New Hospital Design and Development” at the 2022 annual conference of the Association for Professionals in Infection Control and Epidemiology and afterward sat down with Infection Control Today® to discuss the key points of her presentation.

“We need to advocate for our seat at the table from day 1. We can’t be brought in . . . when they’re getting ready to go with that sledgehammer. [If] they’re getting ready to knock down that wall, we need to be involved in those design decisions,” Frederick said. “It is so critical, and we have such a depth of knowledge when it comes to cross contamination [such as] the flow from clean to dirty. We can leverage that expertise to make decisions that [are] going to make [redesigns] easier and often cheaper in the long run.”

Frederick also emphasized that an IP’s experience—or lack thereof—should not stop them from advocating and contributing to design. “I am not a super experienced IP; I only have a few years under my belt. Yet I was able to go into these meetings . . . and even though . . . I left [some meetings] saying, ‘I don’t know that, but let me get back to you,’ it enabled me to learn and be open to learning . . . and made me a better IP. So whether you have 40 years of experience or . . . 2 . . . you still deserve to be at the table. So advocate for it.”

Infection preventionists (IPs) have unique and valuable knowledge and should be consulted during the design and functioning of sterilization operations.

Hayes spoke with Infection Control Today® at the conference, saying that “infection preventionists [should] serve in policy development and compliance to include the additional measures of instrument handling and transport offsite.”

She does caution, however, that offsite sterilization cannot be the only means of sterilization for any facility: “This does not eliminate on-site sterilization, as that will always be needed in case of inclement weather, delays, and emergencies. High-level disinfection of endoscopes should also remain on-site due to the required 1- to 2-hour time frame from scope use to full decontamination of the endoscope.”

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New Hospital Design/Development Need to Involve Infection Preventionists

BY TORI L. WHITACRE

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Seeing Eye to Eye: Reprocessing of Eye Devices

Eye devices are too often overlooked and are not being correctly cleaned, disinfected, or sterilized. To discuss this topic, Infection Control Today® spoke with Katharine J. Hoffman, MPH, CIC, infection preventionist at JPS Health Network, and Lisa Waldowski, DNP, RN, CIC, regional director of infection prevention and control at Kaiser Permanente, during the Association for Professionals in Infection Control and Epidemiology 2022 Annual Conference.

MRSA and C difficile in a Children’s Hospital: Finding the Source

Children are especially vulnerable to pathogens, such as methicillin-resistant Staphylococcus aureus (MRSA) or Clostridioides difficile. In a pair of posters presented at the Association for Professionals in Infection Control and Epidemiology 2022 Annual Conference, Henry Spratt Jr, PhD, professor at The University of Tennessee at Chattanooga, and David Levine, PT, PhD, DPT, CCRP, FAPTA, board-certified clinical specialist in orthopedic physical therapy at The University of Tennessee at Chattanooga, discuss the presence of MRSA and C difficile on the floors of hospitals—especially in patient rooms.

Infection Preventionists and EMS Personnel: Nurturing a Relationship

Emergency medical services (EMS) personnel are often unclear about the role of infection preventionists in prehospital transport and EMS. To shed light on the relationship, Infection Control Today® spoke with Jill Holdsworth, MS, CIC, FAPIC, CRCST, NREMT, manager of infection prevention at Emory University Hospital Midtown, and Alexander Isakov, MD, MPH, FACEP, FAEMS, professor of emergency medicine at Emory University School of Medicine, regarding their joint presentation at the Association for Professionals in Infection Control and Epidemiology 2022 Annual Conference.
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The Ion AmpliSeq SARS-CoV-2 Insight Research Assay GX is a next-generation sequencing (NGS) assay that is quick, accurate, and comprehensive, enabling research and surveillance of the SARS-CoV-2 virus and variants through complete genome sequencing. The intelligent assay design includes new primers that broaden the coverage for variants of concern and increase the sensitivity of the assay for improved detection from lower viral titer samples.

Features include greater than 99% coverage of the SARS CoV 2 genome, covering all potential serotypes; samples with cycle threshold values greater than 28 can be used for preparing libraries, SARS CoV 2 variant announcing, lineage identification, and reporting with Genexus software.

The assay helps broaden NGS epidemiological surveillance to cover emerging SARS-CoV-2 variants through panel design improvements. It also has an improved limit of detection from various sample types due to increased sensitivity. It enables greater access to NGS to rapidly obtain epidemiological insights with quick turnaround time, workflow automation, smooth informatics, lineage identification, and data uploading to public SARS-CoV-2 data sources for viral surveillance.

The Ion AmpliSeq SARS-CoV-2 Insight Research Assay GX should be stored in the freezer (–5 °C to –30 °C) and is compatible with Genexus Software 6.2 and later.

www.thermofisher.com

Purell CS4 All-Weather Dispensing System

Purell CS4 All-Weather Dispensing System is a hand hygiene dispenser that performs in extreme weather and high-traffic settings. Traditional dispensing solutions are commonly designed for indoor settings, but this innovative dispenser enables commercial and municipal buyers to offer hand sanitizer and hand soap in outdoor or high-traffic areas.

The Purell CS4 All-Weather Dispensing System is made of engineered resin that is more than 3 times stronger than materials used in most other dispensers. Its advanced design is water resistant to help keep the rain out and prevent vandalism or refill theft, and its special graphite paint makes the dispenser resistant to UV fading to preserve its performance and appearance in a wide range of extreme conditions and temperatures—from –40 °F to 122 °F.

“With more than 80% of the public now expecting hand sanitizer to be offered in public places, access to hand hygiene is more important than ever before, so we must offer reliable Purell dispensing options suitable for any environment,” Jessica McCoy, chief solutions officer at GOJO Industries, said in a news release. “The addition of this groundbreaking dispenser means Purell hand sanitizer or soap can now be offered in any location. The Purell CS4 All-Weather Dispensing System underwent over 5400 hours of internal, third-party, and live field testing.”

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Sereneview Custom Curtains

Sereneview Custom Curtains feature striking landscape photography printed directly on the curtain facing the patient, drawing the viewer into the photograph to encourage a calming state of mind, which, according to the company, reduces blood pressure and releases serotonin and stress without having to medicate a patient during observation or painful procedures. Patients remember those minute details when asked about their recent visit. In addition, studies have shown that staff is more engaged and efficient working in a clean and nurturing environment.

Medical teams also appreciate the Armor finish that includes AEGIS Shield antimicrobial, which has been tested and proven to repel methicillin-resistant Staphylococcus aureus, Clostridioides difficile, severe acute respiratory syndrome, bacteria, mold, and most microorganisms within 1 hour of contact. The Armor finish also has a stain guard that resists bodily fluids, betadine, oil, grease, dirt, and ink pen marks from becoming permanent stains. A stain guard combined with AEGIS Microbe Shield system provides antibacterial properties, adding more protection for patients and staff. Even after the stains have dried, they will wipe clean with a typical nonbleach cleaner without having to remove the curtains, reducing laundering frequency, saving time, reducing laundry costs, and extending the functional life of the curtain.

Sereneview Custom Curtains are available as hospital curtains, overheads, and wall treatments.

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+ Potential for SKU reduction and cost savings. Can be used facility-wide in either daily or terminal disinfection.
+ More compatible on surfaces and materials than competitive bleach products.\(^4,5\)

\(^1\)CAD is effective against ESKAPE pathogens: *Acinetobacter baumannii* MDR, *Enterobacter aerogenes*, *Enterobacter aerogenes* MDR, *Enterococcus faecalis* VRE (Vancomycin resistant enterococcus), New Delhi Metallo-beta-lactamase-1 (NDM-1) producing *Klebsiella pneumoniae* (CRE – Carbapenem resistant Enterobacteriaceae), *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Staphylococcus aureus* MRSA (Methicillin Resistant).
\(^2\)Microban is a registered trademark of Microban International Ltd.
\(^3\)Clostridioides difficile spores formerly known as *Clostridium difficile* spores.
\(^4\)Data on file.
\(^5\)Always refer to device manufacturer's instructions for use.

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