Infection Prevention Imperatives for the New Year
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The axiom, “the more things change, the more they stay the same,” easily could be applied to the practice of infection prevention and control, which, while experiencing a spike in the number of more sophisticated, evolving tasks infection preventionists now must perform, is still endeavoring to get back to basics. The most pressing issues for 2009 have a familiar ring to them, for the most part.

“In terms of themes that have remained the same for infection prevention and control, the cultural/behavioral change issue relating to compliance continues to be a huge uphill battle,” says Kathy Warye, CEO of the Association for Professionals in Infection Control and Epidemiology (APIC). “If we are going to protect patients, we need healthcare workers to commit 100 percent of the time to known infection prevention and control measures. For 2009, the impact of the new CMS regulations are front of mind right now, but the other big thing I think the APIC membership struggles with is getting ahead of multi-drug resistant organisms (MDROs), including the increasing prevalence of methicillin-resistant Staphylococcus aureus (MRSA), Clostridium difficile and emerging, potentially threatening organisms like Klebsiella. I think MDRO prevention is a primary concern.”

MDRO Prevention

The evidence is certainly pointing to the need for a renewed campaign against MDROs such as Clostridium difficile. In November, APIC released the results of its study, “National Prevalence Study of Clostridium difficile in U.S. Healthcare Facilities,” which indicated that 13 out of every 1,000 inpatients were either infected or colonized with C. difficile. Based on this rate, it is estimated that there are at least 7,178 inpatients on any given day in American healthcare institutions, with an associated cost of $17.6 to $51.5 million. The rate is 6.5 to 20 times greater than previous incidence estimates, according to the survey. The APIC survey, the largest, most comprehensive of its kind, presented a one-day snapshot in time of the prevalence of C. difficile infection (CDI) in American hospitals. APIC’s members collected data about all of their CDI patients on one day in between May and August 2008. Survey results were collected from 12.5 percent of all medical facilities in the U.S. and a total of 1,443 patients were identified with CDI from among the 648 participating hospitals.

“This study shows that C. difficile infection is an escalating issue in our nation’s healthcare facilities,” says William Jarvis, MD, principal investigator of the study and president and co-founder of Jason and Jarvis Associates, a private consulting firm in healthcare epidemiology. “Clearly, preventing the development and transmission of CDI
should be a top priority for every healthcare institution."

“Healthcare providers must intensify efforts toward consistent application of prevention strategies across the continuum of care,” says Warye. “Control of CDI requires adequate numbers of infection preventionists and environmental services personnel, and prevention practices need to be part of everyone’s job within the institution. As part of our Targeting Zero initiative, APIC will continue to call for the commitment of clinical and administrative leadership to providing adequate resources for infection prevention programs to better protect patients.”

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**Antibiotic Stewardship**

Addressing antibiotic resistance is shaping up to be a big issue for 2009. Infectious disease experts warn that new drugs are urgently needed to treat six drug-resistant bacteria that cause most HAI s and increasingly escape the effects of antibiotics. The “ESKAPE” pathogens — Enterococcus faecium, Staphylococcus aureus, Klebsiella species, Acinetobacter baumannii, Pseudomonas aeruginosa, and Enterobacter species — are still flourishing more than four years after the Infectious Diseases Society of America (IDSA) first drew attention to the growing shortage of effective antibiotics. As the crisis of antibiotic resistance continues to grow, the latest IDSA report examines the trickle of new antibiotics in the research and development pipeline and proposes steps to tackle the shortage.

“The six bad bugs we call the ESKAPE bacteria are among the biggest threats infectious diseases physicians face today,” says Helen Boucher, MD, of Tufts Medical Center in Boston, lead author of the new report, published in the Jan. 1 issue of *Clinical Infectious Diseases*. “We desperately need new drugs to fight them. But we also need cooperation among industry, academia, and government to create a sustainable R&D infrastructure that will fill the pipeline to meet today’s needs and keep it filled with drugs that tackle tomorrow’s infectious diseases threats.”

The Food and Drug Administration (FDA) has approved a small number of new antibiotics in the last several years, most of them active against MRSA, however, resistance to them is already beginning to emerge. There remains a paucity of drugs for the Gram-negative pathogens Acinetobacter, Klebsiella and Pseudomonas that are becoming increasingly resistant to antibiotics. Only one new drug was approved for Gram-negative infections last year, and resistance already exists to other drugs in its
“More than four years after our first report, the bad bugs are getting worse, and we still don’t have the drugs we need,” Boucher says. “We need new tools to fight the ESKAPE bugs now. But there will always be bad bugs. We need industry, academia, and government working together so we are never again left with no drugs for bad bugs.”

Warye agrees that the declining arsenal of antibiotics is high up on a list of priorities for infectious disease experts to address. “I think antibiotic stewardship is beginning to be elevated on people’s radar in terms of something in which they need to be more involved,” Warye says. “Of course, while infection preventionists don’t actually prescribe these antibiotics, they realize they must work with pharmacists, physicians and others to spread the word about the need for antibiotic stewardship. I think infection preventionists have a role to play in determining what antibiotic stewardship actually means. In a conversation recently with Dr. Jarvis related to the C. diff study, he said he examined what antibiotics stewardship looked like in different organizations, and there was an incredible number of variations on the theme. So I think defining what a good antibiotic stewardship program looks like is probably something in which APIC will play a larger role down the road because it’s a critical underlying factor in all the problems we face.”

In its new report, the IDSA outlines steps Congress should take to make antibiotics a more attractive business proposition. The IDSA also urges Congress to pass the Strategies to Address Antimicrobial Resistance (STAAR) Act, a bill designed to improve research, surveillance and prevention of resistant organisms.

Infection Prevention Gets Political

As we have seen, there are some timeless issues that the field of infection prevention and control will continue to face, including compliance with proven interventions, but more than ever before, infection prevention is facing new political ramifications.

Last October, when the Centers for Medicare & Medicaid Services (CMS) announced it would no longer reimburse healthcare institutions for what it deemed as preventable infections, a new high-water mark was established for the prevention of healthcare-acquired infections (HAIs) on a federal level, a capitulation many may have seen coming following a number of state-level pieces of legislation requiring public reporting of HAIs. (As of October 2008, according to Consumers Union, 25 state laws currently require public reporting of HAI rates, while two state laws require confidential reporting of infection rates to state agencies, and one state law permits voluntary public reporting of infection information.)

A number of infection prevention experts are watching this growth in state and federal mandates and are hoping that CMS, the Centers, the Centers for Disease Control and
Prevention (CDC), and the Agency for Health Care Research and Quality (AHRQ) develop a coordinated long-range plan for infection prevention with incremental measurements to benchmark progress. They are also hoping agencies will coordinate their data collection across a common format and are create measurements with indicators that offer an incentive for hospital/physician collaboration to prevent HAIs. They also advocate for an infrastructure that better unites processes and outcomes so that provider-specific problems can be identified and resolved.

With the election of a Democrat to the White House and a Democratic majority in the Congress, there are early signs that infection-related legislation could take a priority in 2009.

“If you look at who introduced some of these public reporting bills and the co-signers, there are a lot of Democrats, including President-elect Barack Obama, who was a co-signer on the Durbin bill,” says Warye, referencing the Community and Healthcare-Associated Infections Reduction (CHAIR) Act of 2007 introduced by Sen. Richard Durbin (D-Ill.). “So instinct would tell me those bills are going to get renewed attention, but what that means is anyone’s guess. I think there is more likelihood we will see new legislation around some sort of federal public reporting, and more of it than we have seen previously. What we would like is a broad approach that ensures that infection prevention programs across the country will be properly resourced and funded. Our message has always been, if we have the infrastructure and resources in place to create fully functioning infection prevention programs across the country, then healthcare institutions will be able to deal with whatever infection incidence they face. Whereas the current kind of ‘patchwork-quilt’ approach of one state legislatating active surveillance for MRSA and another state legislatating a different approach to care, is ultimately going to be wasteful in terms of resources and might actually divert resources away from whatever the most pressing problem in that institution is at the time. We are hopeful, we do see new legislation in 2009, that it will be legislation that takes a more strategic, broader approach to infection prevention overall, as opposed to the microorganism-of-the-moment mentality. Legislation that would in any way dictate care is something we would not want to see.”

The Economics of Infection Prevention

Making the business case for infection prevention and control to hospital administrators and other stakeholders will remain critical for infection preventionists for years to come. Understanding the economics of healthcare as it relates to overall performance improvement is essential, Warye emphasizes. “I think you will see in 2009 and beyond that infection prevention will become far more involved in performance improvement initiatives. It’s a big part of the natural evolution of the role, that by using surveillance data and educational resources, infection preventionists can help manage performance improvement initiatives in collaboration with the healthcare institution’s quality officer.”
Warye adds that the CMS regulations are a new impetus for doing the right thing – eliminating all preventable infections – in the first place. “I think it’s certainly a wakeup call for clinical and administrative leaders that infection prevention is a priority,” she says. “Anyone for whom this was not a top priority in the past likely has changed his or her mind. Money talks and the CMS rules have captured the attention of healthcare institution leaders. As far as the impact of the rules, I think it’s too early to tell. Many institutions were not putting programs into place prior to the new regulations, even though they knew they were coming. Only after that first notice that preventable infections will not be reimbursed did many institutions begin to address HAIs in a different way. I think it will empower infection prevention across the nation, and focus the entire institution on infection prevention measures in an entirely new way.”

Warye says she is hopeful that hospital CEOs’ preoccupation with the new CMS regulations will help boost funding and resourcing of infection prevention and control programs. “It’s imperative that hospitals properly resource their infection prevention programs. Now that Medicare reimbursement will not be there to offset any portion of that cost, I think administrators will take a closer look at infection prevention programs and realize interventions that reduce those infections cost just pennies on the dollar compared to what the treatment for those infections cost.” Warye continues, “From a purely economic standpoint, if all you were concerned about is the economics of the institution, it would be a very prudent decision to better resource the infection prevention department because that’s going to improve your bottom line overall. Now is the time to invest in infection prevention and probably more so in poor economic times because you are not going to have other revenue streams. Changing that mindset that infections were revenue-neutral or revenue-positive has been very difficult – more than I ever thought – and it’s not accurate in terms of emerging data. Yet administrators still cling to that belief, which prevents them from appreciating the value of infection prevention and how it improves the bottom line and the financial viability and sustainability of the institution. Where else are you going to find a couple million dollars you could add to the hospital’s bottom line? The CMS regulations are creating tremendous discomfort but at the end of the day, if they force a shift in that mindset away from controlling infections to preventing infections, then that will have been a tremendous contribution to patient outcomes and the facility’s sustainability.”

**Converting Infection Prevention Theory to Practice**

Coinciding with a shifting focus toward making the business case for infection prevention, for the first time, infection prevention has a comprehensive road map for implementing theory into practice and better documenting that practice to meet the new pay-for-performance regulations. In October, five healthcare leaders — the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), the American Hospital Association (AHA), the Association for Professionals in Infection Control and Epidemiology, Inc. (APIC), and The Joint Commission — introduced a new compendium of science-based strategies to help
prevent the six most important HAIs: urinary tract infections (UTIs), ventilator-associated pneumonia (VAP), bloodstream infections, and surgical site infections (SSIs). Included in these strategies are the first-ever recommendations for detection and prevention of Clostridium difficile, and a detailed discussion on how to develop an active surveillance program for MRSA. They also provide internal performance measures and specify accountability.

Infection preventionist Marsha Patrick, speaking on behalf of APIC at a press conference in October, reminded those present that APIC’s members have been among the ones bringing the science to the bedside and the ones working with hospital staff to reduce the risk of infection. “Infection prevention is everyone’s business,” Patrick said. “The C-suite sets the tone for the entire organization.” Patrick explained that at her four-hospital system, they have gone from just one or two infection control practitioners, to six people. “Our CEO gets it,” Patrick said. “It’s a top-down effect, and programs must be adequately resourced by organizational leadership.” Patrick reminded attendees that there must be buy-in by all stakeholders for infection prevention strategies to work. “We must get everyone on board with evidence-based guidelines. We know the best practices but we have to get them down at the bedside. But we must be adequately resourced, because our patients deserve good outcomes. It’s unfortunate that it has taken CMS to withdraw reimbursement to get the C-suite’s attention, but it takes what it takes.”

Robert Wise, MD, vice president of the division of standards and survey methods of the Joint Commission, said he believes that the new compendium will serve as a way to strengthen current HAI prevention practices. This year, the Joint Commission will expect all hospitals to review their risks and determine which evidence-based practices need to be implemented, and key stakeholders will convene to further review the guidance contained in this new compendium. For 2010, the compendium’s requirements will be added to the Joint Commission’s standards for accreditation.

Patrick J. Brennan, MD, chief medical officer for the Penn Health System, said that it is the consensus of the compendium authors that many more infections are now preventable. “It’s not a deficit of knowledge, but a deficit of implementation,” Brennan emphasized. “The challenge before us is keeping the information current, as knowledge and science progress.”

The compendium was joined late last year by the new disinfection and sterilization guidelines from the CDC’s Healthcare Infection Control Practices Advisory Committee (HICPAC), making for two new chunks of information that infection preventionists need to digest and implement.

“The CDC produces scientific guidelines that, to us, are the 30,000-foot view,” Warye says. “They are important for infection preventionists to understand but they do not drill down in terms of detail how these recommendations are to be implemented. The compendium was a substantive contribution to the field, in that there were so many scientific recommendations out there and the compendium pulled all that science
together in one place. It was a significant contribution, perhaps, to reducing the confusion and focusing people on what needs to be done. APIC’s role, as it has been for the last 35 years, is more about how you do it. When you look at the compendium, there are recommendations on how to conduct a risk assessment, for example, but it doesn’t tell you how to perform it. APIC’s part of this field has been in that specific implementation guidance, and that’s where our elimination guides come into play. I see this as a continuum of resources: the CDC guidelines are the 30,000-foot view, SHEA is the 10,000-foot view, and APIC provides the specific details that will help our members translate all that science into practice. I think everybody has made a significant contribution and they fall along the continuum from science to practice.”

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