

# Making a Business Case for Infection Control

*By Kelly M. Pyrek*

One of the most important ways an infection control practitioner (ICP) can validate his or her program is to master an understanding of the principles of healthcare economics (HE) and how they can use it as a tool with which to demonstrate the fiscal and clinical value of infection prevention and control efforts to facility administrators. That was the message of the Science to Practice lecture at the 2005 meeting of the Association for Professionals in Infection Control and Epidemiology, sponsored by 3M Health Care. A panel of experts addressed the need for ICPs to constantly demonstrate their value to hospital executives to protect their programs and services to patients and healthcare colleagues.

Patricia Stone, PhD, RN, of Columbia University, reminded ICPs that they are soldiers in the battle against the 2 million cases of healthcare-acquired infections (HAIs) that result in as many as 90,000 deaths annually. Not only are lives lost, but these HAIs can cost up to \$6.5 billion, a figure adjusted upward for inflation from the 1992 CDC estimate of \$4.5 billion. Healthcare costs alone were 15.3 percent of the U.S. Gross Domestic Product (GDP) in 2003; that figure is expected to climb to 18.4 percent by 2013 when adjusted for inflation. Stone says this is creating “immense” pressure for today’s healthcare facilities to be cost-effective in their operations, so ICPs must take these financial concerns into consideration when asking for an increased IC program budget .

In 2002, Stone and colleagues published their review of the current literature addressing the economic ramifications of adverse events such as HAIs. They examined more than 150 studies that were conducted from 2001 to 2004 which looked at the simple cost of infections or which performed a cost analysis of interventions. The studies examined the frequency and average cost (in parentheses) of the following common HAIs: surgical site infections, 24 percent (\$25,546); bloodstream infections 18 percent (\$36,441); ventilator-associated pneumonia, 8 percent (\$9,969); and urinary tract infections, 3 percent (\$1,006).

Stone recommended that in making a business case for their programs, ICPs should follow accepted guidelines for conducting an economic analysis and look for the most sophisticated mathematical models available in the medical literature, as well as seek out additional training in HE related to evidence-based practice. “Money does talk,” she said, adding that ICPs can make a strong case for their surveillance models.

However, many ICPs need a refresher in the HE vernacular. Edwin Hedblom, PharmD, global manager of health economics for 3M Medical, reviewed the essentials of “HE-speak” by defining a few basic concepts that administrators use when reviewing their profit-and-loss statements and balance sheets. Hedblom defined HE as “the most efficient use of available resources defined in terms of patient outcome and cost; wants and needs exceed limited resources.” He explained that there are economic, clinical, and humanistic

outcomes involved in HE. Economic outcomes include direct costs (such as those related to products and labor) and indirect costs (such as lost employment or lower productivity).

Clinical outcomes include faster wound healing and lower infection rates, while humanistic outcomes encompass quality-of-life issues. Cost-minimization analysis compares two or more alternatives with identical outcomes; cost-effective analysis compares the cost of alternative approaches to obtaining a common therapeutic objective; and cost-utility analysis is the cost of therapeutic alternatives for which outcomes are adjusted for patient preferences.

Intimidating financial formulations aren't the only barriers to ICPs using HE principles. According to Hedblom, the top impediments to using HE data include institutional problems, insufficient training on HE-data analysis, inability to transfer evidence into practice, and the short-term nature of decision making coupled with the long-term nature of HE benefits. Above all, Hedblom said, ICPs must not only speak an administrator's language, they must understand that the economic outlook for the healthcare facility colors an administrator's viewpoint. Hedblom explained that healthcare executives are worrying constantly about issues such as financial viability, controlling costs, making appropriate capital investments, engaging in proper labor relations, ensuring regulatory compliance, maintaining a competitive position in the marketplace, upholding quality, avoiding adverse outcomes and liability issues, preventing medical errors, and ensuring disaster preparedness, among other issues. "ICPs should always consider what their administrators are thinking about when they ask for resources for their department," Hedblom advised.

Denise Murphy, MPH, RN, CIC, of Barnes-Jewish Hospital in St. Louis, emphasized, "Know the business case for infection control. The impact of HAIs makes the best case, including data on the clinical impact of morbidity and mortality, as well as the cost of infections and exposures. It's imperative to show data to management on how cost savings can fund an IC program and prevent about half of a facility's HAIs. The bottom line is that people are dying from preventable HAIs."

Murphy said that ICPs should "know where opportunities in intervention lie in your facility, and where are the pockets of high risk (for HAIs). Document costs to your own facility if possible, and extrapolate this data for meaning. Use cost estimates from the literature, adjusted for inflation, if you cannot obtain your own organizational costs." Murphy added, "The impact of occupational exposures can help make the case for IC resources." She pointed out that, for example, according to data from the CDC, there are 1,000 sharps injuries per day, and that 84 percent of documented HIV transmission is from needlesticks. The cost of such injuries can run in the thousands of dollars, and opens up the facility to lost productivity or litigation. "Facilities should consider the total impact on the community, including staff, third-party payors, etc."

ICPs were encouraged to consider "hidden-opportunity" costs in which resources consumed for one purpose that are therefore unavailable for another potentially higher-value purpose. Additionally, there are societal costs to healthcare consumers, including

decreased trust in the community healthcare system, or increased use of antibiotics which contributes to antibiotic resistance.

“ICPs bring to the job a special brand of expertise,” Murphy said, including skills such as infection prevention and control, epidemiology and surveillance skills, quality improvement processes, patient safety expertise, and education and consultation abilities. She added that HE knowledge complements this skills set, and allows the ICP to place these skills into an economic context. The value of ICPs, according to Murphy, lies in their abilities to eliminate waste and boost productivity; engage in cost-effective product selection; protect the occupational health of employees; ensure the appropriate application of expensive technology; maintain regulatory compliance; create collaboration between clinicians and administrators; and maintain an organization’s reputation for service excellence. Murphy added that ICPs can also support an organization’s strategic plan to grow volume and grow services, as well as hit the target 100 percent on quality-scorecard indicators such as improving surgical prophylaxis timing and making surgical-site infection prevention projects part of the ICP’s overall program goals.

Murphy touched upon one of the most significant challenges to ICPs’ performance, including the tug of war between traditional and non-traditional ICP tasks such as bioterrorism, workers’ compensation, latex allergies, safety fairs, and environmental safety. Murphy alluded to the Delphi Project, which looked at staffing issues related to infection control — one of the biggest issues facing ICPs today. In the white paper, “Staffing requirements for infection control programs in U.S. healthcare facilities: Delphi project,” three researchers from the University of Minnesota School of Nursing examined the 1985 guideline for staffing infection control programs of one ICP for every 250 occupied acute-care beds. The researchers used the Delphi method; data were obtained from a group of ICPs through a series of 10 surveys. Through this iterative process, participant responses were progressively synthesized and areas of agreement and disagreement identified. These surveys were conducted by electronic and paper mail to identify the personal ICP characteristics and structural variables associated with performance of activities required for contemporary infection prevention and control programs in a variety of healthcare settings. Thirty-two Delphi panel members from 20 states (representing acute-care, long-term care, and community-care settings) reported tasks in addition to those identified in earlier task analyses as well as expanded responsibilities. Competing responsibilities and lack of adequate resources were the most frequently cited reasons for nonperformance of essential infection control tasks. A ratio of 0.8 to 1.0 ICPs for every 100 occupied acute-care beds was suggested as adequate staffing by the Delphi panel.

Murphy added that the Delphi project cited a significant lack of resources to ICPs, including inadequate staffing, lab support, medical records access, and data collection. Murphy underscored the recommendations of the Delphi project, including one trained ICP per 100 occupied beds, the presence of a well-qualified physician leader, adequate information systems, and sufficient clinical, analytical and statistical support. When Murphy asked APIC attendees for a show of hands, not even half of the audience of

many hundreds of ICPs had a dedicated IC program budget. “Know the cost of an effective IC budget,” Murphy admonished. “Be relentless in your pursuit, backing up your requests with concrete data.”

Concurring with Murphy on the need for this data, Steven Miller, MD, chief medical officer at Barnes-Jewish Hospital, commented, “Understand the administrator’s view of the world. I care about the quality of care passionately but I also care about healthcare economics. I tell my people, ‘no margin, no mission,’ but the margin isn’t the mission. You have to balance both.” He continued, “The need for ICPs is at an all-time high. You are more powerful than ever before. But you are passive people. You can be your own worst enemies. Until you develop a passion for funding your program, I won’t develop a passion.”

Miller pointed to a typical hospital administrator’s concerns, adding, “Infection control is a cost center, and you can’t bill for it.” However, Miller added that ICPs represent best practices for the facility, improved patient outcomes, regulatory compliance, malpractice avoidance, and return on investment (ROI). The latter, Miller said is critical because, “If you don’t develop ROI, I will ignore you.” Miller continued, “Hospitals continue to be challenged by profitability issues, the need for operating efficiencies, and trying to satisfy many stakeholders. There are numerous external pressures, and profit margins are wobbly; 27 percent of hospitals are losing money, and only one-third of hospitals see capital expansion as viable in the future. Executives have less money to spend and every department in the hospital is vying for the same dollars; you won’t get the money if you don’t ask for it. My advice to you as ICPs is to strike next week, not during the next budget cycle. Go to administrators during the off budget cycle when there is less competition among hospital departments. Be more strategic before heading into tougher economic times.”

Miller outlined several steps ICPs can take to make a bullet-proof business case for increased resources and to “sell” administrators on their IC program:

- Use data as leverage
- Provide ROI
- Solve problems for management
- Be prepared, concise, and accurate
- Have a physician advocate
- Have an economic imperative
- Develop negotiation skills
- Provide options

Miller explained, “I look for what’s wrong in your argument, not what’s right, so ICPs need to make their arguments as solid as possible. I’ll never give you more than you ask for, so think big. Be prepared to go three rounds in negotiations to be successful, and remember to achieve that perfect balance between costs and benefits.”



## How to Provide Cleaner (and Greener) ENVIRONMENTAL SERVICES

By *Severine Zaslavski*

A good cleaning program begins with quality chemicals, then adds cleaning tools, the proper dilution of chemicals, and proper cleaning practices.

### **Q: What should be cleaned?**

**A:** Each infection control practitioner and environmental services manager establishes cleaning and disinfection schedules and methods according to the specific area in the facility, type of surface to be cleaned, and the amount of soil present. In general, the Centers for Disease Control and Prevention (CDC) recommends procedures for two different housekeeping surfaces: high-touch and low-touch. High-touch housekeeping surfaces in a patient's room (such as doorknobs, wall areas around the toilet, and the edges of privacy curtains) should be cleaned with general-purpose cleaners or disinfectants more frequently. Low-touch surfaces, such as hardsurface floors, are horizontal surfaces with infrequent hand contact and should be cleaned on a regular basis, when spills occur, and after the patient vacates the room. Clean walls, blinds, and windows when they are visibly soiled. Remember that skin is also a surface, so hands should be washed often.

### **Q: Is “green” cleaning appropriate for a hospital?**

**A:** A healthcare facility is the ideal location for a “green” — in other words, an environmentally friendly — cleaning program. Products with Green Seal certification contain no NTA, EDTA, dyes, carcinogens, reproductive toxicants, fragrances, or endocrine disruptors (e.g., phthalates). In addition, they ensure low aquatic toxicity; no or minimal VOCs due to air-pollution regulations; no or minimal phosphates due to wastewater treatment; and no alkylphenol ethoxylates due to emerging local wastewater treatment regulations.

### **Q: Are green products just as effective as other products?**

**A:** Absolutely. Unfortunately, there is the perception that environmentally responsible cleaning products are weak and not effective. This may have been true for some products because there were no universally accepted standards for green products prior to 2002. The chemical cleaning industry has accepted guidelines established by a third-party organization, Green Seal ([www.greenseal.org](http://www.greenseal.org)). If you want chemicals just as effective as or better than other products, be sure to look for the Green Seal logo on the product packaging. There are clear, stringent standards for green products for the following categories:

- General Purpose Cleaners (GS 37)



- Restroom Cleaners (GS 37)
- Glass Cleaners (GS 37)
- Carpet Care Cleaners (GS 37 — October 2005)
- Floor Care Products — Finishes and Strippers (GS 40 — November 2005)

**Q: What is the best way to clean a floor?**

**A:** First, remove organic matter and visible soils. Scrub the floor with cleaning chemicals that have been mixed at the proper dilution ratio. Using general-purpose cleaners according to instructions and rinsing with water will remove most particulates. New self-contained microfiber mopping tools effectively eliminate cross-contamination. With a built-in reserve bottle added, the chore is easier, saves time, and minimizes chemical exposure.

**Q: Must I always use a disinfectant to clean the floor?**

**A:** No. Studies have shown there is no advantage to using disinfectants over regular soap and water (general- purpose cleaners) or microfiber-based mopping tools. It has also been shown to have minimal or no impact on the occurrence of healthcare-associated infections. The CDC categorizes floors as environmental surfaces that can be effectively cleaned using less rigorous methods.

**Q: How often do I need to change my mop head and bucket solution?**

**A:** Bucket solutions, mop heads, and cleaning cloths should be changed at a minimum of every three rooms or when the solution becomes visibly dirty. Using the same tool from room to room distributes contaminants and microorganisms even faster. Cleaning professionals who inefficiently tote buckets of dirty water from room to room risk injury, cross-contamination, and potentially unsafe, wet floors. Thanks to 100-percent microfiber technology, one floor-cleaning tool can do it all and in a quick, environmentally friendly manner.

**Q: How do microfiber tools work?**

**A:** Microfiber mop heads have a positive charge that attracts contaminants without redistributing soil around the room. The fibers are absorbent so the mop holds sufficient water for cleaning without dripping. The floor dries quickly because it is merely damp, reducing possible slip and fall injuries. A 2002 Environmental Protection Agency (EPA)-sponsored study indicated that cleaning with microfiber products can reduce cost and reduce surface contamination by 99 percent. Note that not all microfiber products are the same. Just like green chemicals prior to 2002, there is no established industry standard for this item. Compare fiber type, weight, and absorption rates and be sure to buy from an established, trusted source.

**Q: Don't I use microfiber cloths just like other cleaning cloths?**

**A:** Cleaning with microfiber cloths requires different cleaning practices. It is best to spray the solution on the surface, allow dwell time (per product use directions), and wipe dry.

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