

Global best practices: the key to fighting healthcare-associated infections



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Healthcare-associated infections (HAIs) are a growing cause of concern for Japanese healthcare providers. William Bishop, chairman of the HAI/Safety Working Group at the American Medical Devices and Diagnostics Manufacturers' Association (AMDD) in Japan, explains why there is an urgent need to implement global best practices for infection prevention

The spread of multi-drug resistant organisms in hospitals and other healthcare settings is on the rise worldwide. The recent discovery of multi-drug resistant *Acinetobacter* at Teikyo University Hospital in Tokyo and a new type of multi-drug resistant bacterium with genes for New Delhi Metallo-beta-lactamase 1 at Dokkyo University Hospital in Mibu are further examples of the growing problem. The media response to these discoveries and subsequent actions by the Japanese Ministry of Health, Labour and Welfare (MHLW) may help to heighten public awareness of this growing problem. The need for enhanced healthcare-associated infection (HAI) controls, however, has been of high concern among healthcare authorities in Japan for some time.

In April 2007, the Medical Law was amended to require all healthcare institutions in Japan to implement enhanced infection control measures. The Ordinance for Enforcement of the new law included four core areas: execute hospital infection prevention guidelines; hold hospital infection prevention committee meetings; implement infection prevention training for employees; and report on the status of infectious disease incidences. Healthcare institutions in Japan not implementing these infection prevention protocols are subject to inspections. However, should an outbreak occur at a noncompliant hospital, there is no penalty other than a reprimand for not adhering to the practice of good social responsibility.

From April this year, in an effort to strengthen infection control measures nationwide, additional payments above standard medical fees have been provided to hospitals to offset the cost of implementing enhanced safety and infection controls. Despite this renewed focus on fighting HAIs, infection control guidelines remain voluntary, with no established system-wide mandate on

how infections should be prevented, or how penalties should be enforced if hospitals do not adhere to prevention protocols.

The World Health Organization has identified HAIs as a leading cause of preventable morbidity and mortality, in addition to naming it an area where investment in preventive measures would yield significant cost savings and public health benefits. The risk of contracting HAIs is greater for patients in intensive care units who are treated with medical devices such as central venous catheters, ventilators and urinary catheters, as well as those with open wounds. The most common types of HAIs are urinary tract infections, surgical site infections, pneumonia and bloodstream infections.

Bad bugs, no drugs

The three most troublesome forms of bacteria that cause HAIs include methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *enterococci* and *Clostridium difficile*. In addition, there are various multi-drug resistant organisms for which there may no longer be an adequate therapeutic choice available to physicians – “bad bugs, no drugs”.

In the US, Europe and Japan an estimated total of six million HAIs occur each year. Of those, 1.7 million are in the US and result in an estimated 99,000 deaths every year; more deaths annually than AIDS, breast cancer and car accidents combined. When these annual mortality statistics are compared with other global threats, HAIs stand out:

- Seasonal influenza: 36,000 deaths in the US per year
- Pandemic flu: 18,000 deaths worldwide in 2009
- SARS: 774 deaths worldwide, ever
- “Avian” (H5N1) flu: 300 deaths worldwide, ever
- “Staggering” costs

The economic costs associated with HAIs are staggering. In the US, HAIs cause between \$28.4-45bn in excess healthcare costs each year, with the costs for patients with HAIs six times that of non-infected patients. The key driver of these costs is the average length of stay in hospitals, which increases from 4.5 days for patients without an HAI to over 20 days for cases with an HAI. A review of studies conducted in North America, Europe, Australia, Asia and South America found that the average per-patient cost for HAIs was just under \$14,000. A study done in Japan in 2008 found that the average number of days in hospital increased from 15 to 81 when a patient contracted MRSA. The average cost of treatment increased accordingly, from \$9,500 to \$56,700. These figures don't take into account factors like lost worker productivity or the opportunity cost of money being siphoned away from other healthcare initiatives.

The key to success in fighting HAIs, as demonstrated in healthcare systems worldwide, is in the implementation of mandatory standardised infection control protocols that go beyond hand hygiene to include globally proven infection control strategies:

- Screening patients for carriage of multi-resistant organisms;
- Isolation and contact precautions;
- Improved environmental cleaning;
- Antibiotic stewardship; and
- Optimal management of safety-engineered vascular access devices.

Enhanced infection prevention and antibiotic stewardship hold real promise in the fight against the rise of multi-drug resistant organisms; however, the under-reported costs, both human and financial, of HAIs will continue unabated until global best practices in infection control are both mandated and fully implemented in hospitals system-wide in Japan and elsewhere around the world.