



# THE SOURCE IS AT YOUR FINGERTIPS

## Bacteria-laden keyboards are a growing threat

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### **Yours might be breeding right now**

It is widely understood that computer keyboards play a role in breeding bacteria, fostering the growth of Hospital Acquired Infections (HAIs), including methicillin-resistant staphylococcus aureus (MRSA) and other superbugs.

In fact, computer keyboards are among the five most bacteria-laden surfaces in any office. Left untreated, keyboard bacteria can grow by 30% daily. A study conducted by the Veterans Affairs Medical Center in Washington, DC isolated bacteria from 95% of its keyboards. The keyboards were found to harbor a host of pathogens, including stool organisms and fungi. At least one strain was vancomycin-resistant.

### **In the operating room today, in patient rooms tomorrow**

In many hospitals, computer keyboards are already permanent fixtures throughout the clinical areas. In the OR, ER, ICU, and at nurses' stations, they are constantly in use and touched by the hands of multiple users—doctors, nurses, other medical staff—increasing the likelihood that they will transmit bacteria, blood and other contaminants.

Keyboard technology is moving fast. If current trends in the U.S. continue, computer keyboards will soon become standard equipment in patient rooms. Already on the market are workstations on wheels (WOWs) and wall-mounted units, increasing the number of places where a keyboard is used. When it comes to keyboard contaminants, the philosophy of “bringing technology to the patient” may bring a key source of infection to the patient instead.

As hospital computer usage multiplies, the keyboard's potential to do harm multiplies as well. Every keyboard

is a potential carrier of bio-burden and other infectious contaminants.

### **Medical records go digital**

We are quickly reaching the point where all patient medical records, including X-rays, MRIs and CAT scan images, will be stored in digital form. Users, including physicians, nurses and staff, will retrieve, analyze, input and modify these records using a keyboard, mouse, touch pad, touch screen or other means. This will expand viral vulnerability to new generations of user interfaces. Medical organizations around the world are planning for the impact of this new wave of technology, approaching on the near horizon.

In the U.S., the urgency is even greater. Hospitals must comply with federal regulations that mandate electronic medical record-keeping as a condition for their continued receipt of government funds.

### **Keyboard evolution**

The low-cost keyboards shipped with computers were never intended for clinical environments. Starting in the 1990s, a small, specialized keyboard industry began to serve laboratories, hospitals and manufacturers. Users in these environments needed equipment that could be reliably disinfected.

### **First generation**

Specialty computer peripheral manufacturers addressed this market by developing keyboards that were water-resistant. Water-resistant keyboards can be rinsed in a sink without damage. However, only the surface of the keys and exterior of the keyboard housing can be disinfected.

Water-resistant or not, an open-style keyboard is still a potential reservoir for infection and contaminants. Disinfectants cannot effectively attack the bio-burden that collects underneath and between the keys or inside the recesses of a keyboard.

Blood and other contaminants get trapped in seams and under keycaps. Blood won't simply rinse out of a water-resistant keyboard, it binds like hardened egg residue. Rinsing alone won't help. Removing blood from inside a keyboard cannot be accomplished except by taking the keyboard apart for cleaning and disinfecting.

### Second generation

A few keyboard companies designed medical keyboards and mice from the ground up to meet the special needs in environments where infection control was imperative. The result of their labor was a fully sealed keyboard made from silicon rubber. Because there are no seams in its housing or between the keys, bio burden cannot accumulate on a sealed keyboard. Fully sealed keyboards can be immersed in soap and water, cleaned with 10% bleach solution, or wiped down with many hospital disinfectants.

### Advanced features

Medical keyboard technology and engineering have now matured. Refinements and extended capabilities are now offered for the second-generation platform. Customers are looking for keyboards that are:

#### Silent

Customers would like their medical keyboards to be silent. The click of keys can be disruptive and distracting in a patient room or surgical suite.

#### Illuminated

Individually illuminated keys reduce the degree of disturbance created when a nurse checks on a patient during the third shift. Gentle keyboard backlighting means that the room lights can remain off.

#### Lockable

A simple keyboard locking mechanism can save time and labor, even reduce capital investment. A keyboard lock prevents any commands or jumbled text from being entered while the keyboard is wiped down with

disinfectant. A locked keyboard and its USB cable do not need to be disturbed; there is no need to call people from the IT department. And there's no need to maintain an inventory of back-up keyboards for use while the primary keyboards are called out of service for disinfecting.

### Convenient, with out-of-the-way storage

A magnetic attachment system makes the keyboard readily available and just as readily stowed securely out of the way. Dirty double-sided tape and Velcro™, which cannot be disinfected, are a thing of the past.

### Hygienic White

A keyboard in white or another light color makes it easy to see blood, splatter and other contaminants that might not be visible on a keyboard of a darker color.

### Tactile

Keyboard users are most productive when they are using a keyboard with a familiar touch and responsiveness.

### Durable

A well-made keyboard should be durable, withstanding heavy use while remaining clean and fresh-looking.

### Value Offering

Medical grade keyboards are critical to your infection control program. The proliferation of technology in the clinical areas of a hospital, and increasingly in patient rooms, calls for a shift in the way medical professionals think of electronic medical record devices like keyboards.

Keyboards designed for the medical environment are more expensive than those intended for consumers or businesses. They should be. It usually does cost more to equip a professional with the right tool for the job. A hospital-quality keyboard—made specifically for a medical environment to inhibit HAIs—represents a sound investment in responsible protection for the health and safety of patients and medical staff. ■

