A key( board) question

As a dentist you want to ensure CQC compliance; keeping your computer keyboards clean and germ free, what are your options...

Plastic Wrap - this means you have to wrap ‘clingfilm’ around the exterior of a keyboard. This works; it’s cheap and does the job, it’s difficult and time consuming to replace between treating patients, it looks very unprofessional.

- Silicone Rubber Covers - mouldable removable covers that fit directly over the keyboard. Covers must be removed and washed in a sink with soapy water, presenting a barrier to compliance. The rubber material and deep crevices between keys become a reservoir for pathogens – making them worse than a keyboard without any care. They can look extremely unprofessional when they are not cared for.

- Rubber Keyboards - the entire keyboard is made of rubber, with keys that move within the encumbrance. Must be washed in a sink with soapy water, presenting a barrier to compliance. Rubber material and deep crevices between keys become a reservoir for pathogens – making them worse than a regular keyboard, if not cleaned regularly. They can look extremely unprofessional when they are not cared for.

- Sealed Membrane - tactile keys are covered with a sealed membrane typically made of vinyl or similar. Can be cleaned in place. However, the tactile keys require more force than a regular key, making them impractical for quick, repetitive typing and crevices are an issue.

- Sealed Rubber over Mechanical Keys - a thin silicone rubber membrane is stretched over regular mechanical keys. It can be cleaned in place. Porous rubber material can attract dirt and pathogens. The thin cover is easily damaged and can break down with some cleaning agents.

Anti-Microbial Plastics & Coatings - incorporating a coating or plastic additive with anti-microbial properties. Looks and feels like a regular keyboard. Difficult to clean down in the cracks. Even if it’s anti-microbial, you still have to wipe off residue. This presents a barrier to compliance.

Solid-Surface Touch - a glass or acrylic top with touch sensitive keys. Smooth polished surface makes cleaning fast and effective. Can be cleaned in place. Is waterproof. Lack of tactile feel of the keys can slow typing speed. No moving parts and completely sealed means very durable.

The solid surface solution seems to tick all the right boxes. The highly-polished surface of a solid surface keyboard eliminates any crevices in which dirt and microbes can gather.

With no moving parts, the solid-surface keyboard can be very slim and also very reliable. All these factors combine to produce a favourable rating in every category for the solid-surface solution.

Traditionally usability of solid-surfaced keyboards has been a drawback. The keys are not mechanical, so the user is unable to tactiley feel the keys and unable to press them to get the keyboard ‘clack’ feedback users expect.

Furthermore, because the surface is touch-sensitive, the user is unable to rest their fingers on the keys without causing them to type. This means slower typing for 10-finger typists who are used to resting their fingers on the home row keys. The problem is seemingly paradoxical: how can a touch-sensitive keyboard allow the user to rest their fingers on it and feel the keys without typing?

When a user types on a solid-surfaced keyboard, they usually tap on the desired key causing a “thumping” noise, or vibration. Conversely, when they are resting their fingers on a key, no tap occurs. By adding a vibration sensor to the keyboard and correlating its input to that of the touch sensors, the paradox is solved; the keyboard simply doesn’t output text unless a tap has coincided with a touch. This approach would allow the user to rest their fingers on the touch-sensitive surface, solving the problem described above. Further, shallow indentations could be moulded over each key, forming “keywells” on the solid surface that allow the user to tactilely feel the location of each key. With these enhancements, the usability of the solid-surfaced keyboard is dramatically improved.

Solid surfaced keyboards are quicker to clean because they are made with a solid, sealed surface; they can be cleaned in a fraction of the time it takes to clean a regular keyboard and are easier to clean. It’s just as easy as wiping a countertop just wipe the keyboard in place with a disinfectant.

What about the extra cost of a solid surface keyboard? Well let’s look at that; assuming just six cleanings per day, solid surface keyboards can save up to 500 hours per year in cleaning time, per keyboard. Any way you look at it, solid surfaced keyboards can pay for themselves in far less than a year. Cost savings also result from fewer disposable gloves and wipes used per treatment and the return on investment is immediate and significant: up to 10 times in the first year alone! An amazing investment, considering the expected life span of these keyboards is up to five years. What’s the side-effect of all those savings? Well a far more aseptic computing environment.

So in conclusion a solid-surface touch-sensitive keyboard provides an effective solution to the problem of the spread of infection caused by keyboards. By making the cleaning and disinfecting processes both effective and easy, compliance to cleaning protocols are more likely to be followed with this type of keyboard. The additional features of a tap-sensor help overcome the traditional drawback of usability of these keyboards, making it an ideal solution for infection control.

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