

## KEEPING PATIENTS SAFE THROUGH LIFE SAFETY HARDWARE

by Jill Gile, CSI, CDT

One step to making patients safer is through life safety hardware within the room and facility as a whole. This is not a new challenge for the hardware market; the use of levers, fire-rated hardware, and ADA signage are all ways that the industry has risen to the challenge before.

Humans are a reactive species. We tend to carry on with a standard mode of operation until an emergency tells us that we might have to change our ways. This holds true for many aspects of our lives, personal and professional. It might be as simple as changing eating habits to as big as the Titanic creating laws about lifeboat requirements.

For the construction industry, unfortunately, we are faced with Titanic-level issues of life safety. Rules regarding fire codes and ADA accessibility issues are some of the main examples of changes the industry has had to face.

A current issue in the industry is a specific type of life safety. Life safety generally refers to fire codes and emergency egress—protecting individuals from emergencies that might arise in the building—but now we have to focus on the harm that people might be able to do themselves within the building.

Hospitals and clinics are leaders in this life safety issue through the sheer necessity that their jobs are to care for individuals at risk. A sad statistic is that 1,800 suicides occur in hospitals every year<sup>1</sup>. Despite the effort that hospitals make to be a safe place to receive treatment and get on the pathway to better health, patients cannot be monitored 24/7. Preventative measures will certainly go a long way toward keeping sick people safe.

One step to making patients safer is through life safety hardware within the room and facility as a whole. This is not a new challenge for the hardware market; the use of levers, fire-rated hardware, and ADA signage are all ways that the industry has risen to the challenge before. The main challenge facing hardware manufacturers' in this issue is creating products that are anti-ligature.

Sadly, hanging deaths are all too common in a hospital setting. Anti-ligature hardware must be smooth and sloped so that it will not hold any sort of material or weight and does not provide any fastening points. There are a number of factors that make hardware ligature-resistant:

- Recessed trim: trim on hardware is recessed and nesting into each other to reduce gaps so nothing can be tied to the trim.
- Sloped surfaces: all surfaces—especially non-vertical surfaces like the tops of trim and escutcheons—are sloped so nothing can be braced on top of them.
- Concealed mounting: the hardware required for mounting, such as screws and pins, are concealed within the body of the hardware so that they cannot be accessed and used.
- Internal clutch in lever: levers can have internal clutches that allow for free rotation in cases of excessive force. These are already in place as an anti-vandalism feature, so that

too much force simply allows lever to swing without damaging internal working and becoming a security issue. These features also keep them from being used as a ligature point.



**Hospital tip hinge**

These factors are being applied to standard door hardware already on the market. For example, hinges have “hospital tips” applied. These tips are sloped so that they will not hold material. This is in contrast to the flat tip “standard” hinges have, which have a clear attachment point. All hinges on the door should have hospital tips applied in this situation.

Levers are smooth and sloped with no return so that they cannot be used as a ligature point. They also should have recessed trim to reduce gaps and concealed mounting to hide any screws or other mounting hardware. They are, of course, the main place where internal clutching will come into play.

Thumb turns are already sloped to comply with ADA issues of twisting and grasping. These are smoothed and sloped even more so that they cannot be used as a ligature point with recessed trim. The trim should also be sloped. Thumb turns do not have internal clutching per se, but should have stops so that they cannot be over-rotated to act as an attachment point.

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Knobs will not have the traditional shape, but will be very rounded with sloped, recessed trim so that it will not grip material. The stem or shank portion will be completely gone, recessed into the trim so that there are no ligature points. These are probably the most drastically difference pieces of hardware regarding looks.

According to Mark McRae, Director of Engineering at Hager Companies, in an effort to assist the hardware community with defining requirements and test methods for ligature-resistant trim on bored locks and mortise locks, the Builders Hardware Manufacturers Association (BHMA) has taken it upon itself to develop a standard that will specify performance tests and, where necessary, material and dimensional requirements to promote safety and product stability.

Continuous hinges are also gaining traction in the hospital/clinic market. They run the full length of the hinge-side of the door, eliminating the gap between the frame and door and ensuring patient privacy. They also present one smooth surface instead of the possible ligature points of individual hinges. Hospital tips are also available to remove the possible ligature point at the top of the hinge.

Besides ligature-resistant concerns, there are other door hardware options that can ensure life safety and act as patient security measures in hospitals and clinic. This

hardware must walk a fine line between ensuring patient privacy, but also allow hospital staff quick access to patients in case of an emergency.

Bathrooms are an obvious matter of concern, as a patient could lock themselves in for self-harm purposes or simply suffer a slip-and-fall accident. Rescue strikes are a solution to this problem. The bathroom door is hung on a center hung pivot so that it can swing both ways. A rescue strike in this situation provides a lip for the door to rest against when in use, and function is the same as with a standard door/hinge/strike set-up. However, should access to the patient in the bathroom be necessary, the rescue strike can be depressed, allowing the door to swing out of the frame the opposite direction.

Sliding door or barn door hardware is also becoming more prominent in hospitals and clinics. Since 2000, NFPA 101 7.2.1.4.1 allows sliding doors in fire-rated openings, and hospitals quickly took advantage of this ruling for patient rooms. Sliding doors save a lot of space in already cramped hospital rooms, are quick and easy to use, and are usually quite easy to operate for ill or handicapped patients. Doors hung on sliding hardware completely removes the ligature points of hinges, frames, and the edges of swinging doors.

Life safety must be one of the main pillars in decision making for all construction projects—from job site safety all the way through operation and maintenance. Patient security issues add extra layers of concern for hospitals and clinic projects. It can be difficult to specify all the different levels of safety required, and a special challenge during bidding and installation.

However, life-safety issues are something that we all have to work together to accomplish to protect other members of society. Right now, even the best care is not able to completely prevent tragic deaths, so it is up to all of us to ask ourselves, “What can we do to help?”

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