White Paper

Reducing the Risk of Patient Self-Harm: The Case for Ligature-Resistant Products
A Look at U.S. Mental Health (MH) Data

The number of Americans requiring mental health treatment is significant, especially in light of the large group of patients requiring an inpatient stay.

The Natl. Institute for Mental Health (NIMH) reports that 1.34% of the U.S. Population in 2008 was receiving some form of mental health treatment, which equates to 31.2M adults. In that reporting year, there were 1.35M inpatient MH stays accounting for 4.5% of all hospital stays in the U.S. The average stay is 8 days—which is 3.5 days longer than regular hospital stays - and the total cost of these stays was $7.7 billion.

The darker side of these statistics comes into view when contemplating the incidence of self-harm and suicide. A 2008 Natl. Institutes of Health study titled *Suicide in the Medical Setting* reported that the approximate number of inpatient suicides is 1,800 annually, but pointed to a gap in data gathering:

Little is known about suicide in the hospital setting. Although suicide is a major public health concern, the literature on suicide in the medical setting is limited, and accurate data on hospital-based suicides are unavailable.

Executive Summary

Standards and guidelines such as those produced by the Facility Guidelines Institute, the Natl. Association of Psychiatric Health Systems and the VA are excellent resources to illuminate best practices. As part of a robust and comprehensive patient-safety risk assessment in pre-project planning, it is important to weigh the level of precaution necessary to reduce the risk of patient self-harm.

The design challenge faced is in balancing patient safety without negatively impacting the creation of a therapeutic environment that is conducive to patient healing and recovery. Nonetheless, as the data shows, the preponderance of inpatient suicide by hanging is an area requiring increased focus and action.

No product can or should claim to be a “suicide proof” silver bullet. That said, ligature-resistant products and systems can hopefully reduce the incidence of self harm. This white paper posits that the selection and specification of ligature-resistant products and systems must factor into both a project plan and the facility’s overall operational schema.
A 2012 presentation by Peter Mills, Ph.D., addressed inpatient suicides in VA hospitals. Some key facts Dr. Mills shared were:

- Inpatient suicide rates estimated to be 5-80 per 100,000 psychiatric admissions in U.S.
- Physical environment a root cause in 84% of Joint Commission (JC) sentinel event inpatient suicides.
- Hanging is the most common method reported in JC (75%) literature and in the VA (30.4%).
- 50% of suicides by hanging were NOT fully suspended - using anchor points below the head.

Conclusions from the data

As one article said:

While all behavioral health patients are not suicidal, inpatient suicides are a continuing area of concern. Moreover, the rates are not declining despite concerted efforts to reduce them.
It becomes readily apparent - especially in the VA data - that suicide attempts and completions are predominantly via hanging, followed closely by cutting with sharp objects. As dark as this data may be to read about, it points to a reality that must be addressed in the design and operation of health facilities.

**Products and Systems to Reduce Risk of Self-harm**

We began this white paper with the statement that no product can or should claim to be a “suicide proof” silver bullet. And we would be remiss if we did not also point out that steps like patient suicide-risk assessment and staff supervision are just two operational practices that must factor into an overall suicide-reduction mindset. Another would be limiting access to only those spaces where self-harm risk is reduced - for instance, securing stairwell and roof-top access points.

That said, there is evidence of increasing focus on ligature-resistant products. Olivia James spoke of the trend in a recent article on the Cherry Hospital in Goldsboro, N.C. James is a spokesperson for the North Carolina Department of Health & Human Services, which operates the Cherry facility:

> Olivia James says patient and staff safety was considered in all design decisions at Cherry Hospital — including materials, furnishings, circulation routes and use of space. For example, anti-ligature door hinges, handles and locking mechanisms are installed in all patient areas to prevent self-harm. “Many of these anti-ligature devices were not on the market until just a couple of years ago, and they were produced in response to the need by psychiatric hospitals,” James says.²

James Hunt, AIA, added that these products confer a high level of safety without an institutional appearance. “It’s the direction all health care needs to go,” he says. Hunt is co-founder of Behavioral Healthcare Architectural Group.

With this philosophy in mind, following are several product and system options for a designer’s consideration. While these products are designed for behavioral health applications, they do not guarantee patient safety.
Ligature-resistant Handrails - feature a continuous bracket or retainer behind the main rail to deny an attachment point.

Pop-out Curtain Carriers - The hook portion releases, allowing the curtain to fall (disengages at +/- 10 lbs. of pressure).
Solid Surface Shower Surrounds and Receptors - a concern among mental health facility personnel is the ability of patients to chip out and “weaponize” ceramic tile by fashioning sharp edges to harm either themselves or facility staff. As shown here at the behavioral health unit at St. Anthony Hospital in Oklahoma City, the installation of solid surface wall cladding as a surround and a solid surface receptor greatly reduces the “tile-as-weapon” risk.

As you can also see, the St. Anthony design included plumbing fixtures that minimize attachment points as much as possible. One other benefit of solid surface over tile is in facility cleanliness, with no grout to harbor mold, mildew or bacteria.

Conclusion

Proceeding from the premise that every life is precious, then any and all steps that can be taken should be taken to help reduce the risk of inpatient suicide. There is no “silver bullet” solution that will prevent or eliminate suicide in mental health facilities, but our hope is that by following the advice of Olivia James of the N.C. DHHS, designers and facility managers will make ligature-resistant products part of their strategy to reduce the risk.
Endnotes


2 Building Better Behavioral Health Facilities  
Since 1979, Inpro® has been making and servicing products with an obsessive commitment to protecting the appearance of buildings and the health and safety of the people who use them. Based in Muskego, Wisconsin, Inpro is a global manufacturer of door and wall protection, washroom systems, expansion joint systems, privacy systems, elevator protection systems and architectural signage.