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Abstract

Suicide of hospitalized patients is the most common sentinel event reviewed by JCAHO. Shorter lengths of stay, sicker patients, and higher patient to staff ratios challenge the ability of the hospital to maintain safety. Patient characteristics found to be associated with suicide are difficult to apply to inpatients, because suicide risk is the most common reason for admission, placing the majority of patients in the high risk category. Addressing environmental factors in the hospital is the most effective way to reduce the risk of inpatient suicide. This paper discusses the most common sources of environmental risk, and suggests safer alternatives.

Introduction

The most frequent legal action involving psychiatric care is the failure to protect patients from harming themselves (Bongar, Maris, Berman, Litman, & Silverman, 1993). The highest standards tend to be imposed on inpatient facilities because the presence of acute suicidal ideation is the most common reason for admission to an inpatient setting. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) requests accredited organizations to report inpatient suicides as part of their review of what are called "sentinel events." A sentinel event is defined by JCAHO as "an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof." Examples of sentinel events include medication error, patient elopement, patient death or injury from restraints, patient falls, and wrong-site surgery. Between January, 1995 and January, 2003 JCAHO reviewed 1,959 sentinel events and concluded that the most common event was patient suicide, occurring 320 times, and representing 16.3% of the total (Joint Commission on Accreditation of Healthcare Organizations, 2003). The data reflect the need for ongoing investigation of strategies to assure patient safety.

A number of factors may be contributing to the problem of inpatient suicide. Health service organizations have been influenced by third party payers to reduce costs. This influence has led to a reduction in the clinical staff to patient ratio on the ward, and shortened lengths of stay. Because third party payers certify inpatient treatment for only

the sickest patients, the proportion of severely disordered patients on a psychiatric unit has also increased with day to day case review. No other medical specialty receives that level of scrutiny. The rising clinical demands placed on psychiatric facilities may affect the incidence of suicide because the increased patient to staff ratio results in insufficient time spent with high-risk patients (Bassett & Tsourtos, 1993).

The Importance of Environmental Risk Factors

Much of the academic literature has focused on attempts to identify those patients at highest risk for suicide or a suicide attempt (Deisenhammer, DeCol, Honeder, Hinterhuber, & Fleischhacker, 2000; Kausch & McCormick, 2002; King, Baldwin, Sinclair, & Campbell, 2001; Marusic, Tavcar, Dernovsek, & Steblaj, 2002; Spiessl, Hubner-Liebermann, & Cording, 2002; Steblaj, Tavcar, & Dernovsek, 1999). Patient characteristics such as race, sex, age, prior suicide attempt, family history of suicide, chemical dependency, mood disorders, impulse control disorders, psychosis, and personality disorders, especially borderline personality disorder, have all been found to be associated with increased suicide risk.

In hospital practice these criteria may be less useful (Powell, Geddes, Deeks, Goldacre, & Hawton, 2000). Many patients admitted to inpatient facilities have these identified risk factors, but only a small percentage will make a suicide attempt during their hospital stay. Therefore, identifying patients at higher than average risk by looking at specific characteristics will yield many false positives. Furthermore, many of the high-risk

characteristics described in the literature are demographic or historical, and therefore static. Clinical suicide risk assessments, on the other hand, are more likely to focus on dynamic variables that change over time in relationship to changes in illness, stress, and response to treatment (Norko, 2000). Finally, over-reliance on screening for common risk factors may lead to decreased vigilance regarding those who do not match the typical profile. Only regular, repeated suicide assessments are useful in identifying relevant risk factors in individual patients, and these must be documented (Silverman, Berman, Bongar, Litman, & Maris, 1994).

JCAHO requires that sentinel events be followed by an intensive evaluation of all the potential causes underlying the event. These causes are termed "root causes." The physical environment within the hospital was identified by JCAHO as a root cause in 84 percent of suicide deaths between 1995 and 2002. Consequently, attention to risk factors present within the hospital environment is the most important strategy to protect the safety of psychiatric inpatients.

Although quality assurance governmental agencies which oversee psychiatric facilities routinely recommend that structural hazards be eliminated in private areas to which suicidal patients have access (Walters, 2001), the recommendation has been met with a mixed response. Some facilities have argued that major design changes have limited utility because patients who are determined to commit suicide will invariably find a way to do so. Nevertheless, as soon as an actual suicide occurs, these facilities generally fix the structural hazards despite earlier reservations (Sundram, 1991).

Reducing Environmental Risk Factors

Facilities interested in reducing factors associated with the physical environment should perform routine, documented assessments of the structures most commonly used by inpatients to commit suicide. *** 1 *** The following recommendations are not based on systematically collected data. They are meant to be a pratical guide to areas that deserve attention which are based on clinical experience. Hanging was the method of suicide in 75 percent of cases reported in a JCAHO Sentinel Event Alert (Joint Commission on Accreditation of Healthcare Organizations, 1998), and consequently the minimization of environmental risk factors begins with the elimination of structures that are capable of supporting a hanging object. Patients have been found hanged in bathrooms, bedrooms, and closets. Ceiling systems with lay-in acoustical tiles that expose plumbing, piping, or ductwork are inappropriate. Exposed utility pipes in private patient areas should be enclosed. A riveted metal lay-in or concrete ceiling is low risk. Fire safety sprinkler heads, sturdy curtain rods, closet clothing rods, clothing hooks, and towel hooks may be particularly attractive to a suicidal patient who is trying to hang himself. These rods and hooks should be eliminated, and fire safety sprinkler heads should use a flush mounted design. Built-in shelves on which folded clothing can be placed are a better substitute for hooks and rods.

Showerheads should also use a flush mounted design, and shower controls should be push-button, or utilize a rounded design that will not support a cord. Shower curtain rods

should be eliminated, or designed to break away with the weight of the least heavy patient likely to be treated on the unit, or approximately 100 pounds for an adult unit. The weight rating should be obtained in writing from the manufacturer, and periodic testing should be carried out to verify that the device functions properly.

Door closer devices should rest flush, and be mounted on the public side of a door instead of the private patient side. Door hinges should be the continuous piano style that extend from the top of the door to the bottom in an unbroken manner. This type of design will not allow a cord to be tied to the hinge.

Patients can also use structures that are much closer to the floor to cause asphyxiation. Patients have committed suicide on inpatient units by wrapping sheets around fixtures placed a few feet above the floor, kneeling down, and leaning forward to obstruct their airway, leading to a fatality. Therefore, fixtures closer to the floor must also be designed to minimize their ability to support a strangulation device. Towel bars should not be used without break away capability. Sink faucets and handles should be flush mounted, or have a rounded design that would cause a cord to slip off easily.

Items that can be used as hanging or strangulation devices should be avoided on the unit. These items include drapery cords, belts, shoe laces, ties, kerchiefs, bathrobe sashes, and drawstring pants. The risk associated with a women's bra needs to be addressed with sensitivity. Bras, like many other articles of clothing, have been used as strangulation devices. Because of the straps associated with most bras, they may represent a

particularly high risk, and consideration should be given as to whether a woman who is acute enough to be on a suicide watch should not be allowed to wear a bra. ***4*** Like any other clinical decision relating to a patient's safety, this decision must be made on an individualized basis in the context of good professional judgement.

Electrical cords should be made as short as possible. Other materials that can pose an asphyxiation risk include plastic trash can liners, and latex gloves. The former should not be used in patient areas, and the latter should be carefully stored in a locked treatment room or nursing station.

An inventory of a patient's personal items, including clothing, should always be made on admission, and a decision regarding the utility of each item should be made. Additionally, careful clinical assessment of which patients are to share a room will minimize the risk of a roommate's item being used for self-harm. Suicidal patients should be placed in rooms closest to the nursing station, and should have a roommate. Visitors to the unit should be warned against providing items to patients on the unit without staff review.

A group of suicidal patients being treated on a unit designed for high-risk care was asked to identify features of the unit that they could use to commit suicide that had not been previously identified and eliminated by the hospital staff (Benensohn & Resnik, 1973). One of the methods they reported was ingestion of toxic cleaning supplies. Most hospital units are maintained by a cleaning staff that uses a portable cart that may have lye-containing mixtures or ammoniated cleaning compounds. Cleaning staff should receive

appropriate training to prevent the cart from being left unattended, and to report to nursing staff any patients who appear to be trying to gain access to the cleaning cart.

Another potential hazard is represented by objects that can be used by patients to cut themselves. Unbreakable glass or plastic windows and mirrors should be used throughout the unit. All windows should be impossible to open from the interior except by special keys, or have locked interior safety screens in place. Dining utensils should be designed with safety in mind, and all dishes should be unbreakable.

Observation Protocols

Hospitalized patients who are believed to be at high risk for committing suicide are regularly placed on observation protocols. The protocol may require continuous observation (either visual or at arms length, depending on risk), or periodic checks, such as every 15 minutes. Intervals longer than 15 minutes are inadequate, and it is important to realize that much can be done, even in 15 minutes, if the patient times the checks carefully. Death by asphyxiation may occur in as little as five minutes. Periodic checks should be done in a variable, unpredictable fashion. For example, a 15 minute check could be followed by a six minute check, followed by a 10 minute check, etc. Randomly varied checks make it more difficult for a hospitalized patient to plan a suicide, and make it more likely that the plan will be discovered.

2 Constant, arms-length observation of a suicidal patient by a member of the

clinical staff is one of the most effective ways to protect high-risk individuals. Unfortuantely economic pressure placed on inpatient units can make this type of resource intensive protocol impossible for all but the sickest patients. As discussed above, one of the effects of intense scrutiny of psychiatric inpatients by managed care organizations is that the majority of patients approved for hospital care have severe and unstable clinical presentations, and must be treated in an environment of reduced resources. Hospital administration may place explicit limits on the number of staff members available for 1:1 observation of patients, or more subtle forms of pressure may be used to discourage the overuse of this strategy. In most cases, the combination of reduced staff and numerous suicidal patients makes constant observation an approach that can be used only in the most severe cases. Consequently, careful attention to reducing the presence of environmental risk factors becomes all the more important.

Patients in seclusion require very high levels of monitoring. There should be no internal protuberances, and the rooms should have window or camera surveillance capability.

Staff will often negotiate a "no-suicide contract" during periods of high risk to determine if the intensity of observation can be reduced. This is a common practice, but the available research does not support a preventive role for no-suicide contracts (Simon, 1999). Negotiation of a contract begins with an assessment that the patient is at risk for suicide, however patient agreement to the contract may lull the clinician into a false sense of security. Ongoing assessment of suicide risk is warranted whether or not a patient has agreed to a no-suicide contract. There are many variables that can affect a patient's

adherence to a no-suicide contract including the length of time the patient has known the clinician, the quality of the therapeutic relationship, the presence of varying degrees of internal and external stress, and a rapidly evolving clinical status. This last factor may be most relevant on a hospital unit where patients tend to be most unstable. A patient may be able to agree in good faith to refrain from self harm at a specific moment in time, but be unable to adhere to this agreement during the next nursing shift, or some other time in the immediate future.

Passes and Patient Elopement

After hanging, the second most common way for hospitalized patients to commit suicide is by finding a way to leave the locked unit. Patients may be allowed to leave the unit on a pass, sneak out unnoticed when visitors enter or depart a unit, or find some other way of eloping without permission. Once off the unit, suicidal patients have been known to end their life by drowning, jumping, or stepping into traffic. Given the very short lengths of stay that are the rule in acute care hospitals, and the severity of illness required to have an admission certified by a third party payer, passes should be infrequently available, and only when absolutely necessary to achieve therapeutic goals that cannot be met in any other way. It is not possible to perform ongoing suicide risk assessments when a patient is on a pass.

Conclusions

It is unrealistic to believe that all suicides can be prevented on inpatient psychiatric units. However, because these facilities treat patients who are at high risk of violent, self-destructive behavior, it is important to take reasonable precautions to avoid a foreseeable tragedy. Predicting suicide risk in patients is difficult, uncertain, and requires regular suicide risk assessments in individual hospitalized patients. Attention to the environmental risks that may be present on an inpatient unit, and which will affect all of the patients treated there, represents the most effective way to minimize overall risk.

A suicide attempt on a psychiatric unit, especially one that results in the death of the patient, invariably has negative effects on family, friends, unit staff, and the hospital administration. When a hospital is built, or a ward renovated, the hospital chief engineer and architect are responsible for the design and build out of safe space. This task cannot be done without input from the unit's chief medical officer and head nurse, who are clinically responsible for reviewing the unit before it opens. Additionally, a documented checklist of regular safety inspections is recommended to minimize the occurrence of these most unfortunate of events.

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