Preventing Suicide Among Inpatients

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Objective: Inpatient suicide comprises a proportionately small but clinically important fraction of suicide. This study is intended as a qualitative analysis of the comprehensive English literature, highlighting what is known and what can be done to prevent inpatient suicide.

Method: A systematic search was conducted on the Cochrane Library, PubMed, Embase, Web of Knowledge, and a personal database for articles on cohort series, preferably controlled, of inpatient suicide (not deliberate self-harm or attempted suicide, unless they also dealt specifically with suicide data).

Results: A qualitative discussion is presented, based on the findings of the literature searched.

Conclusions: The bulk of inpatient suicides actually occur not on the ward but off premises, when the patient was on leave or had absconded. Peaks occur shortly after admission and discharge. It is possible to reduce suicide risk on the ward by having a safe environment, optimizing patient visibility, supervising patients appropriately, careful assessment, awareness of and respect for suicide risk, good teamwork and communication, and adequate clinical treatment.

* * *

Prévenir le suicide chez les patients hospitalisés

Objectif: Le suicide des patients hospitalisés représente une fraction proportionnellement modeste mais cliniquement importante des cas de suicide. Cette étude se veut une analyse qualitative complète de la littérature de langue anglaise, dégageant ce qui est connu et ce qui peut être fait pour prévenir le suicide des patients hospitalisés.

Méthode : Une recherche systématique a été menée dans la Library Cochrane, PubMed, Embase, Web of Knowledge, et dans une base de données personnelle pour trouver des articles sur des études de cohortes, études préférablement contrôlées sur le suicide de patients hospitalisés (mais pas sur l'automutilation délibérée ou sur les tentatives de suicide, à moins qu'elles ne se rapportent spécifiquement aux données sur le suicide).

Résultats : Une discussion qualitative est présentée, d'après les résultats de la recherche de littérature.

Conclusions : La majorité des suicides de patients hospitalisés surviennent non pas à l'intérieur mais à l'extérieur des lieux hospitaliers, alors que le patient est en congé ou qu'il s'est enfui. Les pics s'observent peu après l'admission ou le congé. Il est possible de réduire le risque de suicide dans l'hôpital en offrant un environnement sécuritaire, en optimisant la visibilité des patients, en les supervisant adéquatement, et par une évaluation soignée, une connaissance et un respect du risque de suicide, un bon travail d'équipe, une bonne communication, et un traitement clinique approprié.

The clinical decision to admit a psychiatric patient to hospital is primarily based on judgment about acuity, severity, and danger to self or others.^{1–10} Patient safety is a prerequisite *sine qua non* for admission to a psychiatric inpatient unit, whether in a general or psychiatric hospital. Clearly, in supporting such an admission, the patient's family and friends expressly assume that the patient will be protected from harm, including harm to the self, and that this protection will extend for some reasonable time into the future, postdischarge. Hospital accreditation committees regard suicide, while an inpatient, as an SE, that is, "an

unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof."^{11, p 2} Further,

Such events are called 'sentinel' because they signal the need for immediate investigation and response. The term 'sentinel event' and 'medical error' are not synonymous; not all sentinel events occur because of an error, and not all errors result in sentinel events.^{11, p 2}

Reporting incidents to the US TJC (formerly known as the Joint Commission for Hospital Accreditation [JCAHO; renamed in 2007]) and in the United Kingdom is voluntary¹² and acknowledged as a small proportion of actual events. Nonetheless, suicide is regularly the first or second commonest SE reported in US hospitals after surgery to the wrong person or body part.^{13–15} About 1500 suicides occur in inpatient units in the United States, annually (one-third of them on 15-minute watch¹⁶), and 200 in the United Kingdom. I am unaware of similar published data for Canada but Martin¹⁷ analyzed suicide data for 3 decades at the Clarke Institute of Psychiatry, a precursor of the Centre for Addiction and Mental Health (commonly referred to as CAMH). The estimated rate was 1.24/1000 inpatient discharges, at the low end of the range of between 1.0 and 4.5/1000 reported for other North American, European, Australian, and Chinese hospitals^{18–22} (excluding an outlier of 5.7 from a 1971 paper cited by Bowers et al^{21}). These numbers constitute a small but important subgroup of suicides overall. The annual report of the NCI in the United Kingdom²³ covering 2001–2011 reports a mean of 6384 suicides per annum, of which suicides by psychiatric patients (defined as having had contact with mental health services during the past year) numbered 1605 (25%). Inpatient suicides (n = 161) were 10% of psychiatric patient suicides and constituted 2.5% of all suicides in the general population. In England, 32 inpatients (20% of inpatient suicides) died while absconding from the ward,²⁴ and a slightly smaller number, 23 (17%), while involuntarily detained. The gradient of suicide rates in each category declined modestly across the decade, but the slope was even steeper for inpatient suicides, a 58% fall, with the proportion of inpatient suicides projected to drop to 5% of patient suicides by 2011. The ratio of male-to-female suicide rates, overall, for the United Kingdom was 3:1, similar to that reported in Canada,²⁵ but was nearly equal specifically for inpatient suicide. The fall in UK inpatient suicide, likely an artifact of bed downsizing, is tempered by a corresponding rise in suicides in patients cared for by crisis resolution and (or) home treatment teams; that is, the risk has been transferred to the community,²⁶ but did not happen in Finland following deinstitutionalization.²⁷

The NCI did not analyze psychiatric and general hospitals separately, the latter with shorter stays and environmental differences. Long-stay psychiatric hospitals usually report higher mortality than the general public for both natural and

Abbreviations

CRHT	crisis resolution and home treatment
DSH	deliberate self-harm
ED	emergency department
MHEOCC	Mental Health Environment of Care Checklist
NCI	National Confidential Inquiry into Suicide and Homicide by People with Mental Illness
SE	sentinel event
TJC	The Joint Commission
VA	Veterans Affairs

Clinical Implications

- Clinicians should recognize their extremely inaccurate record in judging who will die by suicide and compensate for this by thorough assessments on different occasions and by exercising great care to not grant leave or discharge a patient prematurely.
- In preventing suicide, it is important for all disciplines on the team to keep one another properly informed about anything that could affect a patient's suicide risk.
- Hospitals should review their existing design and operating policies periodically for their suitability in dealing with suicidal patients.

Limitations

- Comparatively few prospectively controlled studies exist, and these are heterogenous, with relatively small samples and only one meta-analysis.
- This is a qualitative though systematic review and makes no attempt at quantitative pooled estimates.

unnatural causes. In France, Casadebaig and Quemada²⁸ found 3 times higher mortality in inpatients with mental illness than in the general population, particularly in younger age groups and women. Suicide prevalence is highest in psychiatric hospitals, followed by psychiatric units in general hospitals, medical–surgical units, and residential care facilities, such as nursing homes.¹³ In Asia, suicide rates in general hospitals may be even higher. Tseng and colleagues (see Tseng et al²⁹ and Cheng et al³⁰), from a teaching hospital in Taiwan, reported an 8.25 times higher risk of suicide mortality than in the general population, with highest risk in the 25 to 29 age-band.

Method

This qualitative review draws on a systematic search of the English-language literature covering hospital patients aged more than 17 years and suicide. The databases were the Cochrane Library, PubMed (National Library of Medicine), Web of Knowledge, Embase, and the suicide-related reference database of the author, holding 57 160 citations and abstracts. The terms used were "(hospital or inpatient) and suicide." An Endnote X7 (Thomson Reuters, New York, NY) library of 2595 references was thus assembled, which was, in turn, hand-searched. Papers relating to attempted suicide or DSH were not included unless they also had a section on hospital or postdischarge suicides. Based on the titles and abstracts, references that included data on suicide while an inpatient or within a year of discharge were obtained in PDF and read in full text.

Results

The Hospital ED

In 1998, TJC issued an SE Alert on preventing inpatient suicides,¹⁴ and, in 2010, followed it with an update focusing on medical–surgical units and ED.³¹ The alert acknowledged that nonpsychiatric units were not designed for suicidal patients and staff usually not trained for

them. Patients with a psychiatric history or attempt were "known at risk for suicide" but 14% of general hospital suicides were "unknown at risk."^{31, p 1} Previous attempted suicide, especially if recent, being on antidepressants, having physical health problems (such as chronic pain), poor health prognosis, social stressors, hopelessness, and substance abuse constituted risks. Methods were by hanging, jumping, cutting with a sharp object, intentional drug overdose, and strangulation. Careful watch was needed on such potentially dangerous items as bell cords, bandages, sheets, restraint belts, plastic bags, elastic tubing, and oxygen tubing. Patients required adequate screening and assessment, care planning, and observation; staff to be adequately manned, orientated, and trained about suicide prevention and communication.

I well recall reviewing the case of a male waiting in a busy ED to be assessed for an overdose combined with alcohol. Nurses were "keeping an eye on him" while he sat on a chair with an intravenous going while they continued with other duties. Later, a nurse going off duty observed that he had pulled the curtains around his cubicle and was no longer visible. On opening the curtains she found he had strangulated himself with his hospital gown wrapped around his neck and anchored by the intravenous pole. The case highlights the importance of keeping a psychiatric patient in the ED in full view at all times, particularly if they are known to be at risk. An on-site, 24/7 psychiatric clinic in the ED in medium- to large-size general hospitals is advisable, such as in place at St Joseph's Hospital, Hamilton, functioning as the intake centre for psychiatry at McMaster University.

Nonpsychiatric ED staff working under pressure may be unempathic, antagonistic, and stigmatizing to patients, who are often discharged without a psychiatric assessment.³² Surprisingly, in EDs where psychiatric consultation was not available, nonpsychiatric staff, particularly older female staff, regarded patients who attempted suicide supportively, compared with staff in a hospital ED where psychiatric consultation was routinely available.³³

Cooper et al³⁴ systematically studied ED doctors' assessment of suicide risk in over 3000 cases in 4 inner-city hospitals by having them use structured questionnaires, with each patient addressing suicidal intent, details of the episode, social and demographic factors, precipitants, clinical history of selfharm, and symptoms of mental illness.³⁴ The physicians were swayed toward an assessment of high suicide risk by sex (male), suicidal plans, looking depressed, appetite disturbance, high lethality of the method, attempting to avoid discovery, degree of premeditation, and wanting to die; 90% of those assessed as high risk were appropriately referred to psychiatric services or medical-surgical care. The authors³⁴ speculate that referrals to psychiatry might have been higher if an out-of-hours psychiatric liaison service had existed, such as mentioned above. Previous research showed that ED risk assessments after DSH were poor and variable, but in this study³⁴ the questionnaires clearly influenced the ED physicians' assessments and they acted appropriately. The instrument introduced an element of teaching that led to improved psychosocial assessment and interdisciplinary communication.³⁵

Olfson et al³⁶ analyzed a nationally representative sample of hospital ED visits in the United States for DSH by patients younger than 24 years and estimated the annual rate as 225/100 000; a mental disorder was diagnosed in over one-half of the visits, with depressive disorders in 15% and substance disorders in 7%. One-half of the patients were admitted, significantly more likely if the youth was diagnosed with a mental disorder and receiving psychotropics, intravenous fluids, gastric lavage, or a poison antidote. Medicaid claims data for ED DSH contacts by youths between 10 and 19 years old showed three-quarters of them discharged back into the community. Only 1 in 4 of these youth received an ED mental health assessment, and a similar proportion were assigned to outpatient care. In this Medicaid population, after-care was more likely arranged if the young person was female and a recent contact (that is, if the person was previously known as a patient at the same hospital they received preferential admission) with a diagnosis of depression; after-care was less likely with Hispanic ethnicity and residing in a poor county.³⁷ The authors suggest their results are consistent with international research showing only 40% of suicidal people receiving any kind of mental health treatment. Clearly, social factors can play a role in how suicidal patients get treated. Preferential ED practices regarding admission to hospital vary greatly, regionally, and even within the same region; further, preferences extend beyond psychiatric patients.³⁸ Suspicion of imminent suicidality, particularly with history of a previous attempt, severely depressed mood, or acute psychosis are regarded everywhere as overriding indications for admission,^{8,39–41} but, after that, the criteria seem to vary. In the Borders region of Scotland, self-referrals are less likely than general practitioner referrals to be admitted.⁷ In Finland, suicide attempters were more likely to be admitted if they were older, sober, presented on a weekday, or were referred for psychiatric consultation.42

Some centres strive hard to shorten hospital stays by inserting ultra-short-stay acute care units into EDs^{39,43,44} or, as in the United Kingdom, by developing CRHT as a viable alternative^{45,46} operating also in a triage role. Inpatient admissions dropped to only 1:8 of those referred, selectively those with worse crisis ratings or Health of the Nation Outcome scores and came from deprived areas of the city.45 Kapur et al²⁶ prospectively studied National Health Service inpatient psychiatric admissions between 1997 and 2008, a period of psychiatric bed reductions, and found that the rate of inpatient suicide deaths fell by one-third from 2.45 to 1.68/100,000 bed days, particularly in patients aged 15 to 44. There was a 59% reduction in hangings. Compensating for the fall in inpatient suicide deaths, there was a corresponding rise among patients under the care of CRHT teams, that is, a possible transfer of risk to community settings.

The Inpatient Ward

Safety Precautions

Contemporary culture in Europe and North America stresses individual autonomy and frowns on old-fashioned, so-called custodial care. Gatekeepers are reluctant to detain patients involuntarily and impose restrictions on their movement or privacy. This mindset may influence clinical judgment and cause some physicians to prematurely and mistakenly discontinue 72-hour formal assessments, sometimes based on a single encounter. I have reviewed cases where suicide ensued. The same preconception may result in granting patients who are still suicidal but do not appear to be so, unaccompanied and weekend passes, or premature discharge from hospital. Appleby et al⁴⁷ surveyed 10 000 cases of people who had died by suicide who had contact with mental health services in the 12 months before death, 16% of them psychiatric inpatients at the time and 21% of these under special observation. One-half of the people were in contact with mental health services the week before their death and 20% in the previous 24 hours, but, at final contact, suicide risk was estimated to be high in only 2% of them. Paterson et al⁴⁸ explored judgments regarding suicide risk by psychiatrists and nurses on acute inpatient units in Scotland and found their judgments to be inconsistent, with lack of agreement in both psychiatrists' and nurses' ratings of the suicide risk for each individual vignette. We cannot avoid the conclusion that clinicians' ratings of suicide risk in individual patients is, to say the least, inaccurate,⁴⁹ and, therefore, it is best to be cautious and not overconfident when it comes to exercising responsibility for the safety of one's suicidal patient. After all, a truly suicidal patient has no interest in betraying his intentions to someone likely to impede them. Nevertheless, others act impulsively some time after having been assessed as not actively suicidal.

The corollary of an overly restrictive ward atmosphere is that it will transfer more of the responsibility for recovery from the patient to the doctor and may even reinforce stigmatization; it is, therefore, seen by some to be countertherapeutic. Clearly, there has to be a balance between the 2 objectives. Where the patient is deemed to be at significant risk, a high level of surveillance and restricted movement is essential, while others who are demonstrably nonsuicidal and are thoroughly understood (that is, as to how they are thinking and feeling) should be entrusted with responsibility for themselves, and it would be invidious to impose unnecessary restrictions.

Unit Design and Environment

The putative ideal design for an inpatient unit is one encompassing the greatest chance of keeping patients under direct vision at all times, together with the absence of physical hazards. In the case audits authorized by TJC known as root cause analyses, the physical environment of the inpatient unit was incriminated in 84% of reported suicides,¹⁵ clearly the most important factor in inpatient suicide. Benensohn and Resnik⁵⁰ consulted their own inpatients about design vulnerabilities on the unit that might be exploited for suicide (cited and discussed in Cardell et al⁵¹). They discovered that most patients had already explored the potential for suicide and suggested many weaknesses that had not occurred to the health care team and were delighted to do so. Since then,¹⁵ fiscal constraints have increased, with shorter lengths of stay, higher acuity of admissions, illness severity, and higher patient to staff ratios, making protection of patients even more challenging. Hanging was the method used in 75% of cases reported to TJC and most often occurred in bathrooms,⁵² bedrooms, and closets, and sometimes close to the floor. In bathrooms and bedrooms, acoustic ceiling tiles could be removed, and exposed plumbing, piping, or ductwork could be used as anchors for hanging (I know of such a case). The Lieberman et al paper¹⁵ lists numerous points about the physical environment that may require attention, including training cleaning staff to ensure their cleaning fluids are kept secure and their carts always attended, and informing visitors not to bring in potentially lethal items, such as plastic bags.

Mills and colleagues¹⁶ systematically undertook root cause analyses of 185 inpatient suicides and suicide attempts in VA hospitals. Doors and wardrobe cabinets accounted for 41% of the anchor points for hanging. Careful analysis led them to recommend eliminating doors when not required, removing doors on wardrobe cabinets and replacing the rods and hangers with shelves, eliminating belts, shoelaces, and safety razors, and ensuring there is a protocol in place to eliminate access to drugs that could be used in overdose. Next, they recommended conducting regular environmental rounds to spot potential hazards.¹⁶ Finally, Mills and colleagues⁵³ were able to develop and implement the MHEOCC to review the environment of care in VA hospitals and identify suicide hazards requiring abatement. This checklist is now mandatory in all VA mental health units. The most common type of hazard was ligature anchor points, that is, protrusions capable of supporting the weight of a person more than 100 lbs. In the United Kingdom, hanging was the method in 77% of inpatient suicides between 1999 and 2007. The most common ligature points were doors, hooks or handles, windows, belts, and sheets or towels; the use of shoelaces, doors, and windows increased over time.54 In its first 2 years of use in VA hospitals, the MHEOCC led to the abatement of 8298 hazards, accompanied by a reduction in VA hospital suicide rates from 2.64/100 000 inpatient mental health admissions to $0.87/100\ 000$ admissions (P < 0.001).⁵⁵ The MHEOCC can be found online.56

Protective Observation

Among the root causes for 65 inpatient suicides investigated by TJC was "incomplete or infrequent patient observations."^{14, p 1} The recommendations included advice to hospitals to update policies and procedures for patient observation and to monitor their consistent implementation. Official nursing guidelines recommend observation and therapeutic engagement "to provide support to clients who lack the capacity to prevent acting on suicidal ideation . . . and reflect the client's changing suicide risk"⁵⁷; however, there is no universal standard for a common nomenclature^{21,58,59} and policies are often disregarded by staff members in practice^{60–62} and between institutions.⁶³ Low staff-to-patient ratios aggravate the situation and adversely affect performance indicators.^{64–66}

Traditionally, observational supervision of suicidal patients (clients) was accepted as intrinsic to the nursing role but has, in the last 2 decades, become controversial. Failure to institute it with a patient who dies as a result carries potential legal consequences,^{67,68} but nurses complain that the practice lacks an evidence base,⁶⁹ is intrusive, humiliating to clients, and runs counter to nurses' humanistic beliefs and desire for a therapeutic alliance.⁶² Polled patients say otherwise.^{70–72} Although the experience is intrusive, they uniformly feel safer and more hopeful when staff observers are upbeat, optimistic, emotionally supportive, and interact therapeutically with them.

Ontario nursing guidelines recommend that observation be "set at the least restrictive level, for the least amount of time within the least restrictive setting."73, p 42 This is consistent with the empirical finding that continuous observation (that is, constant care, special observation, constant special observation, and maximum observational care) beyond 72 hours can become counterproductive and demands fundamental case review.74 No-suicide contracts lack empirical evidence67,75-77 and carry no assurances.73 The guidelines specify sensible definitions of 4 levels of observation developed by Reynolds et al⁷⁸ and a New Zealand Guidelines Group (as cited by the Ontario Registered Nurses Association⁷³). Level I is General Observation: not all patients need to be kept within sight but their location should be known to staff at all times. Level II is Intermittent Observation: the patient's location must be checked every 15 minutes. Level III is Within Eyesight): a patient could at any time act harmfully to self or others, thus staff is operational round-the-clock, but clearly observers might not be close enough to intervene effectively. Level IV is Within Arm's Length: this is the highest risk level and requires nursing within arm's length at all times, including in the bathroom. With inpatients considered actively suicidal, unpredictably psychotic, impulsive, or aggressive, more than one nurse may be assigned at a time. The guidelines also recommend, as do Lieberman et al,¹⁵ that at Level II, observation intervals change randomly at short intervals of less than 15 minutes to make the time-interval available for potential suicide less predictable.

This is for the person who is considered to be at a significantly increased suicide risk . . . It is recommended that the timing of observations be varied to ensure the person cannot predict the exact time of the next observation.^{15, p 103}

Level IV or equivalent is labour-intensive, stressful to nurses, and burdensome to nursing budgets. Hence some hospitals have developed acute care units where several patients may be housed within transparent cubicles and monitored from the nursing station. Closed-circuit television is sometimes used but has limitations because a suicidal person can readily find the blind spot of such equipment. The design of hospitals of the future will no doubt make it possible to monitor a psychiatric patient at all times, if necessary.

Absconders

About one-third of inpatients take their lives while on agreed passes and another one-third having absconded. Locked doors have traditionally been used to secure inpatient units but are now controversial. Staff, patients, and visitors agree that locked doors reduce absconding but increase the workload for staff who have to let people in an out of the ward. However, open wards cause nurses anxious vigilance to prevent an abscond.⁷⁹ The patients surveyed expressed feeling depressed, stigmatized, and low self-esteem when the door was locked. In their review, Bowers et al²¹ noted there were just as many suicides following absconds from locked as open wards. Bowers et al⁸⁰ introduced a package of nursing interventions (for example, delivering news of a cancelled pass with sensitivity and support) that resulted in a 25% decrease in absconding rates. Absconders were younger, more often unemployed, homeless, and suffering from schizophrenia and substance misuse. Often legally detained for treatment, they had histories of violence, noncompliance with medication, and died within 1 week of admission.24

Risk factors for inpatient suicide

Online eTables 1, 2, and 3 summarize, in descending order of conventional levels of evidence (but no randomized trials), most of the available international studies (including Asia but not Africa) on risk factors in inpatient suicide in the English literature. Although superseded by the controlled studies listed in online eTables 1 and 2, we have also learned from descriptive studies (online eTable 3). The risk of suicide while an inpatient and up to a year postdischarge is far higher than among the general public, far higher in affective disorders, schizophrenia, mood cycling,⁸¹ and personality disorders (reflecting the case-mix composition of wards), in those involuntarily detained, in young patients, particularly absconders, and also among those on authorized leave. The most consistent predictor is a history of attempting suicide, but depressed mood (notably in people with schizophrenia), hopelessness, agitation, anxiety,82 and impulsivity⁸³ also feature prominently. The timing of death is of concern, with peaks early on admission and shortly after discharge. Madsen et al⁸⁴ found 50% of the patients dead within 18 days of admission. Suicide methods depend on what is available: on the wards, hanging, asphyxiation, strangulation, and cutting; when outside, jumping from heights or into traffic, drowning, or overdosing. In a small number of cases, patients have got away from constant (special) supervision, either through force or stealth, and taken their lives.

Large et al⁸⁵ undertook the only meta-analysis of psychiatric hospital suicide published so far, to my knowledge, and found the usual predictors: affective disorder and schizophrenia, history of DSH or attempted suicide, hopelessness, guilt or inadequacy feelings, depressed mood, suicidal ideation, and family history of suicide. Within the group with schizophrenia, depressed mood was strongly associated with suicide (OR 4.8; P level or 95% CI not reported in text). Large et al⁸⁵ comment that their risk factors are highly intercorrelated and unlikely to pose cumulative risk, and the low base rate for suicide means that the predictive value of categorizing patients as high risk is less than 2%. Safer hospital environments and excellent care for all patients are more likely to reduce inpatient suicide than high-risk assessments.⁸⁶ I have previously discussed this conundrum and agree with this conclusion.87 This should not, by any means, be taken to mean that there is no value in careful assessment of a person's suicide risk. To the contrary, meeting such criteria will rule those people in, but they will also include many false positives. Rather, it means that we cannot afford to exclude the others not labelled high risk, who, because their numbers are many times larger, will include more actual suicides than in those we deem high risk.

Reviewing the copious studies on inpatient suicide, one is struck by the broad range of potentially suicidal patients who cross the portals of the hospital. First, there are the DSH or suicide attempters, most of them young people, who are met with impatience in the ED and often given short shrift, as in the United Kingdom and the United States, where they often leave the ED without a psychosocial assessment and no arrangements for after-care. At the other end of the spectrum are the people with mental illness, suffering from severe affective illness or schizophrenia, frequently comorbid with anxiety or personality disorders. Transsyndromal depressed mood and genuine suffering seems to weave them together as a potentially suicidal group. Kessing⁸⁸ has shown that severity of depression is associated with suicide risk. Numerous other papers point to suicide occurring in those who have been fighting a losing battle against severe mental illness with previous hospitalizations, while treatment responders are able to overcome their suicidal risk.⁸⁹ We badly need more efficacious treatments in psychiatry for people such as these.

It is time for clinicians to acknowledge their inability to accurately predict suicide in individual patients, for the health care team members involved to work together and communicate with one another, for thorough clinical assessments of the patient's personhood, illness, and current predicament, and for vigorously yet sensitively applying the best and most appropriate treatments available. Insofar as safety precautions and protective observation are concerned, the only licence we have to impose these is the expectation of being able to help the patient reverse both the illness and their adverse predicament, and we should not withhold whatever is necessary to achieve this.

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Editor's Note

 Goldberg JF, Ernst CL, Bird S. Predicting hospitalization versus discharge of suicidal patients presenting to a psychiatric emergency service. Psychiatr Serv. 2007;58(4):561–565.

References 90 to 205 are located online in eTables1, 2, and

3, and freely available at http://www.TheCJP.ca.

- Hunt GE, O'Hara-Aarons M, O'Connor N, et al. Why are some patients admitted to psychiatric hospital while others are not? A study assessing risk during the admission interview and relationship to outcome. Int J Ment Health Nurs. 2012;21(2):145–153.
- Cochrane-Brink KA, Lofchy JS, Sakinofsky I. Clinical rating scales in suicide risk assessment. Gen Hosp Psychiatry. 2000;22(6):445–451.
- de Leo D, Sveticic J. Suicides in psychiatric in-patients: what are we doing wrong? Epidemiol Psichiatr Soc. 2010;19(1):8–15.
- 5. Hirschfeld RMA. When to hospitalize patients at risk for suicide. Ann N Y Acad Sci. 2001;932:188–196.
- Paris J. Is hospitalisation useful for suicidal patients with borderline personality disorder? J Pers Disord. 2004;18(3):240–247.
- Taylor J, Lawrie S, Geddes J. Factors associated with admission to hospital following emergency psychiatric assessment. Health Bull (Edinb). 1996;54(6):467–473.
- Ziegenbein M, Anreis C, Brüggen B, et al. Possible criteria for inpatient psychiatric admissions: which patients are transferred from emergency services to inpatient psychiatric treatment? BMC Health Serv Res. 2006;6:150.
- Morgan H, Priest P. Assessment of suicide risk in psychiatric in-patients. Br J Psychiatry. 1984;145:467–469.
- 10. Cardell R, Horton-Deutsch S. A model for assessment of inpatient suicide potential. Arch Psychiatr Nurs. 1994;8(6):366–372.
- 11. The Joint Commission (TJC). Sentinel event data: event type by year 1995–2Q 2012 [Internet]. Oakbrook Terrace (IL): TJC; [cited 2013 Dec 1]. Available from: http://www.jointcommission.org/assets/1/18/ Event_Type_Year_1995_2Q2012.pdf.
- Blain PA, Donaldson LJ. The reporting of in-patient suicides: identifying the problem. Public Health. 1995;109(4):293–301.
- Tishler CL, Reiss NS. Inpatient suicide: preventing a common sentinel event. Gen Hosp Psychiatry. 2009;31(2):103–109.
- 14. The Joint Commission (TJC). Inpatient suicides: recommendations for prevention. The Joint Commission sentinel event alert [Internet]. Oakbrook Terrace (IL): TJC; 1998;7(Nov 6) [cited 2013 Dec 1]. Available from: www.jointcommission.org/Sentinel_Event_Alert_ issue_7 inpatient_suicide_recommendations_for_prevention/. Search box: inpatient suicides: recommendations.
- Lieberman DZ, Resnik HLP, Holder-Perkins V. Environmental risk factors in hospital suicide. Suicide Life Threat Behav. 2004;34(4):448–453.
- Mills PD, DeRosier JM, Ballot BA, et al. Inpatient suicide and suicide attempts in Veterans Affairs hospitals. Jt Comm J Qual Patient Saf. 2008;34(8):482–488.
- 17. Martin B. The Clarke experience with completed suicide: 1966 to 1997. Can J Psychiatry. 2000;45:630–638.
- Lynch MA, Howard PB, El Mallakh P, et al. Assessment and management of hospitalized suicidal patients. J Psychosoc Nurs Ment Health Serv. 2008;46(7):45–52.
- Neuner T, Schmid R, Wolfersdorf M, et al. Predicting inpatient suicides and suicide attempts by using clinical routine data? Gen Hosp Psychiatry. 2008;30(4):324–330.
- Li J, Ran MS, Hao Y, et al. Inpatient suicide in a Chinese psychiatric hospital. Suicide Life Threat Behav. 2008;38(4):449–455.
- 21. Bowers L, Banda T, Nijman H. Suicide inside a systematic review of inpatient suicides. J Nerv Ment Dis. 2010;198(5):315–328.
- Ganesvaran T, Shah AK. Psychiatric in-patient suicide rates: a 21-year study. Med Sci Law. 1997;37(3):202–309.

- 23. Appleby L, Kapur N, Shaw J, et al. The national confidential enquiry into suicide and homicide by people with mental illness: annual report [Internet]. Manchester (GB): University of Manchester; 2013 [cited 2013 Dec 1]. Available from: http://www.bbmh.manchester.ac.uk/cmhr/ centreforsuicideprevention/ nci/reports/ NCIAnnualReport2013V2.pdf.
- 24. Hunt IM, Windfuhr K, Swinson N, et al. Suicide amongst psychiatric in-patients who abscond from the ward: a national clinical survey. BMC Psychiatry. 2010;10(14).
- Navaneelan T. Suicide rates: an overview. Statistics Canada Catalogue no 82–624-X [Internet]. Ottawa (ON): Statistics Canada; 2011. Available from: http://www.statcan.gc.ca/ pub/82–624-x/2012001/article/11696.
- Kapur N, Hunt IM, Windfuhr K, et al. Psychiatric inpatient care and suicide in England, 1997 to 2008: a longitudinal study. Psychol Med. 2013;43(1):61–71.
- Pirkola S, Sohlman B, Heila H, et al. Reductions in postdischarge suicide after deinstitutionalization and decentralization: a nationwide register study in Finland. Psychiatr Serv. 2007;58(2):221–226.
- Casadebaig F, Quemada, N. Mortality in psychiatric inpatients. Acta Psychiatr Scand. 1989;79:257–264.
- Tseng M-CM, Cheng IC, Hu F-C. Standardized mortality ratio of inpatient suicide in a general hospital. J Formosan Med Assoc. 2011;110(4):267–269.
- Cheng IC, Hu FC, Tseng MC. Inpatient suicide in a general hospital. Gen Hosp Psychiatry. 2009;31(2):110–115.
- The Joint Commission. A follow-up report on preventing suicide: focus on medical/surgical units and the emergency department. Sentinel Event Alert. 2010;46:1–4. Nov 17.
- Pompili M, Girardi P, Ruberto A, et al. Emergency staff reactions to suicidal and self-harming patients. Eur J Emerg Med. 2005;12:169–178.
- Suominen K, Suokas J, Lonnqvist J. Attitudes of general hospital emergency room personnel towards attempted suicide patients. Nord J Psychiatry. 2007;61(5):387–392.
- Cooper JB, Lawlor MP, Hiroeh U, et al. Factors that influence emergency department doctors' assessment of suicide risk in deliberate self-harm patients. Eur J Emerg Med. 2003;10:283–287.
- Crawford MJ, Turnbull G, Wessely S. Deliberate self harm assessment by accident and emergency staff—an intervention study. J Accid Emerg Med. 1998;15:18–22.
- Olfson M, Gameroff MJ, Marcus SC, et al. Emergency treatment of young people following deliberate self-harm. Arch Gen Psychiatry. 2005;62(10):1122–1128.
- Bridge JA, Marcus SC, Olfson M. Outpatient care of young people after emergency treatment of deliberate self-harm. J Am Acad Child Adolesc Psychiatry. 2012;51(2):213–222.
- Abualenain J, Frohna WJ, Shesser R, et al. Emergency department physician-level and hospital-level variation in admission rates. Ann Emerg Med. 2013;61:638–643.
- 39. Brassos REM, de Azevedo Marques JM, Carlotti IP, et al. Short admission in an emergency psychiatric unit can prevent prolong the lengths of stay in a psychiatric institution. Rev Bras Psiquiatr. 2010;32(2):145–151.
- 40. Mattioni T, Di Lallo D, Roberti R, et al. Determinants of psychiatric inpatient admission to general hospital psychiatric wards: an epidemiological study in a region of central Italy. Soc Psychiatry Psychiatr Epidemiol. 1999;34:425–431.
- Wilson LS, Kelly BD, Morgan S, et al. Who gets admitted? Study of referrals and admissions to an adolescent psychiatry inpatient facility over a 6-month period. Ir J Med Sci. 2012;181(4):555–560.
- Suominen K, Lonnqvist J. Determinants of psychiatric hospitalization after attempted suicide. Gen Hosp Psychiatry. 2006;28(5):424–430.
- Gillig P, Hillard JR, Bell J, et al. The psychiatric emergency service holding area: Effect on utilization of inpatient resources. Am J Psychiatry. 1989;146:369–372.
- 44. Wharff EA, Ginnis KM, Ross AM. Family-based crisis intervention with suicidal adolescents in the emergency room: a pilot study. Social Work. 2012;57(2):133–143.

- 45. Brooker C, Ricketts T, Bennett S, et al. Admission decisions following contact with an emergency mental health assessment and intervention service. J Clin Nurs. 2007;16(7):1313–1322.
- 46. Marks IM, Connolly J, Muijen M, et al. Home-based versus hospital-based care for people with serious mental illness. Br J Psychiatry. 1994;165(2):179–194. See comments.
- Appleby L, Shaw J, Amos T, et al. Suicide within 12 months of contact with mental health services: national clinical survey. Br Med J. 1999;318(7193):1235–1239.
- Paterson B, Dowding D, Harries C, et al. Managing the risk of suicide in acute psychiatric inpatients: a clinical judgement analysis of staff predictions of imminent suicide risk. J Ment Health. 2008;17(4):410–423.
- Simon RI. Imminent suicide: the illusion of short-term prediction. Suicide Life Threat Behav. 2006;36(3):296–301.
- Benensohn HS, Resnik HL. Guidelines for "suicide-proofing" a psychiatric unit. Am J Psychother. 1973;27(2):204–212.
- Cardell R, Bratcher KS, Quinnett P. Revisiting "suicide proofing" an inpatient unit through environmental safeguards: a review. Perspect Psychiatr Care. 2009;45(1):36–44.
- 52. Barba L. Bathrooms balance comfort, safety. Behav Healthc. 2010;30(10):40–42.
- Mills PD, Watts BV, Miller S, et al. A checklist to identify inpatient suicide hazards in Veterans Affairs hospitals. Jt Comm J Qual Patient Saf. 2010;36(2):87–93.
- Hunt IM, Windfuhr K, Shaw J, et al. Ligature points and ligature types used by psychiatric inpatients who die by hanging. A national study. Crisis. 2012;33(2):87–94.
- 55. Watts BV, Young-Xu Y, Mills PD, et al. Examination of the effectiveness of the Mental Health Environment of Care Checklist in reducing suicide on inpatient mental health units. Arch Gen Psychiatry. 2012;69(6):588–592.
- 56. US Department of Veterans Affairs (VA). Mental Health Environment of Care Checklist (MHEOCC) [Internet]. Washington (DC): VA; 2007 [cited 2013 Dec 1]. Available from: http://www.patientsafety.va.gov/SafetyTopics.html#mheocc.
- 57. Ontario Registered Nurses' Association (RNA). Assessment and care of adults at risk for suicidal ideation and behaviour: nursing best practice guideline. Toronto (ON): Ontario RNA; 2008.
- Billings C. Close observation of suicidal inpatients. J Am Psychiatr Nurs Assoc. 2001;7(2):49–50.
- Green JS, Grindel CG. Supervision of suicidal patients in adult inpatient psychiatric units in general hospitals. Psychiatr Serv. 1996;47(8):859–863.
- Aidroos N. Nurses' response to doctors' orders for close observation. Can J Psychiatry. 1986;31(9):831–833.
- Janofsky JS. Reducing inpatient suicide risk: using human factors analysis to improve observation practices. J Am Acad Psychiatry Law. 2009;37(1):15–24.
- Duffy D. Out of the shadows: a study of the special observation of suicidal psychiatric in-patients. J Adv Nurs. 1995;21(5):944–950.
- Stewart D, Bowers L, Warburton F. Constant special observation and self-harm on acute psychiatric wards: a longitudinal analysis. Gen Hosp Psychiatry. 2009;31(6):523–530.
- Bowers L, Flood C. Nurse staffing, bed numbers and the cost of acute psychiatric inpatient care in England. J Psychiatr Ment Health Nurs. 2008;15(8):630–637.
- Coleman JC, Paul GT. Relationship between staffing ratios and effectiveness of inpatient psychiatric units. Psychiatr Serv. 2001;52:1374–1379.
- 66. Bassett D, Tsourtos G. Inpatient suicide in a general hospital psychiatric unit. A consequence of inadequate resources? Gen Hosp Psychiatry. 1993;15(5):301–306.
- 67. Silverman MM, Berman AL, Bongar B, et al. Inpatient standards of care and the suicidal patient. Part II: an integration with clinical risk management. Suicide Life Threat Behav. 1994;24(2):152–69. Review.
- Shapiro DA, St John D. Special report: a review of successful hospital suicides and their aftermaths. Hosp Secur Saf Manage. 1991;11(12):5–10.

- 69. Manna M. Effectiveness of formal observation in inpatient psychiatry in preventing adverse outcomes: the state of the science. J Psychiatr Ment Health Nurs. 2010;17(3):268–273.
- 70. Pitula CR, Cardell R. Suicidal inpatients' experience of constant observation. Psychiatr Serv. 1996;47(6):649–651.
- Jones J, Ward M, Wellman N, et al. Psychiatric inpatients' experience of nursing observation: a United Kingdom perspective. J Psychosoc Nurs Ment Health Serv. 2000;38(12):10–20.
- Cardell R, Pitula CR. Suicidal inpatients' perceptions of therapeutic and nontherapeutic aspects of constant observation. Psychiatr Serv. 1999;50(8):1066–1070.
- 73. Ontario Registered Nurses' Association (RNA). Assessment and care of adults at risk for suicidal ideation and behaviour: nursing best practice guideline. Toronto (ON): Ontario RNA; 2009.
- Shugar G, Rehaluk R. Continuous observation for psychiatric inpatients: a critical evaluation. Compr Psychiatry. 1990;30:48–55.
- 75. Edwards SJ, Sachmann MD. No-suicide contracts, no-suicide agreements, and no-suicide assurances: a study of their nature, utilization, perceived effectiveness, and potential to cause harm. Crisis. 2010;31(6):290–302.
- Puskar K, Urda B. Examining the efficacy of no-suicide contracts in inpatient psychiatric settings: implications for psychiatric nursing. Issues Ment Health Nurs. 2011;32(12):785–788.
- Simon RI, Hales RE. Textbook of suicide assessment and management. Washington (DC): American Psychiatric Publishing; 2006.
- Reynolds T, O'Shaughnessy M, Walker L, et al. Safe and supportive observation in practice: a practical governance project. Ment Health Pract. 2005;8(8):13–16.
- Muir-Cochrane E, van der Merwe M, Nijman H, et al. Investigation into the acceptability of door locking to staff, patients, and visitors on acute psychiatric wards. Int J Ment Health Nurs. 2012;21(1):41–49.
- Bowers L, Simpson A, Alexander J. Real world application of an intervention to reduce absconding. J Psychiatr Ment Health Nurs. 2005;12:598–602.
- Sharma V, Persad E, Kueneman K. A closer look at inpatient suicide. J Affect Disord. 1998;47(1–3):123–129.
- Fawcett J. Predictors of early suicide: identification and appropriate intervention. J Clin Psychiatry. 1988;49(Suppl):7–8.
- Fawcett J. Treating impulsivity and anxiety in the suicidal patient. Ann N Y Acad Sci. 2001;932:94–102; discussion 102–105.
- Madsen T, Agerbo E, Mortensen PB, et al. Predictors of psychiatric inpatient suicide: a national prospective register-based study. J Clin Psychiatry. 2012;73(2):144–151.
- Large M, Smith G, Sharma S, et al. Systematic review and metaanalysis of the clinical factors associated with the suicide of psychiatric in-patients. Acta Psychiatr Scand. 2011;124:18–29.
- Large MM, Nielssen OB. Risk factors for inpatient suicide do not translate into meaningful risk categories—all psychiatric inpatients are high-risk. J Clin Psychiatry. 2012;73(7):1034–1035.
- Sakinofsky I. The current evidence base for the clinical care of suicidal patients: strengths and weaknesses. Can J Psychiatry. 2007;52(6 Suppl 1):7S–20S.
- Kessing LV. Severity of depressive episodes according to ICD-10: prediction of risk of relapse and suicide. Br J Psychiatry. 2004;184:153–156.
- Hoyer EH, Licht RW, Mortensen PB. Risk factors of suicide in inpatients and recently discharged patients with affective disorders. A case–control study. Eur Psychiatry. 2009;24(5):317–321.
- Angst F, Stassen HH, Clayton PJ, et al. Mortality of patients with mood disorders: follow-up over 34–38 years. J Affect Disord. 2002;68(2–3):167–181.
- Axelsson R, Lagerkvist-Briggs M. Factors predicting suicide in psychotic patients. Eur Arch Psychiatry Clin Neurosci. 1992;241(5):259–266.
- Berglund M, Nilsson K. Mortality in severe depression. A prospective study including 103 suicides. Acta Psychiatr Scand. 1987;76(4):372–380.
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- Berglund M. Suicide in alcoholism. A prospective study of 88 suicides: I. The multidimensional diagnosis at first admission. Arch Gen Psychiatry. 1984;41:888–891.
- 94. Berglund M, Krantz P, Lundqvist G, et al. Suicide in psychiatric patients. A prospective study of 67 cases without initial signs of severe depression or alcoholism. Acta Psychiatr Scand. 1987;76(4):431–437.
- Brent DA, Perper JA, Goldstein CE, et al. Risk factors for adolescent suicide: a comparison of adolescent suicide victims with suicidal inpatients. Arch Gen Psychiatry. 1988;45:581–588.
- 96. Choi JW, Park S, Yi KK, et al. Suicide mortality of suicide attempt patients discharged from emergency room, nonsuicidal psychiatric patients discharged from emergency room, admitted suicide attempt patients, and admitted nonsuicidal psychiatric patients. Suicide Life Threat Behav. 2012;42(3):235–243.
- Cohen LJ, Test MA, Brown RL. Suicide and schizophrenia: data from a prospective community treatment study. Am J Psychiatry. 1990;147(5):602–607.
- Craig TJ, Ye Q, Bromet EJ. Mortality among first-admission patients with psychosis. Compr Psychiatry. 2006;47(4):248–253.
- 99. Erlangsen A, Mortensen PB, Vach W, et al. Psychiatric hospitalisation and suicide among the very old in Denmark: population-based register study. Br J Psychiatry. 2005;187:43–48.
- 100. Erlangsen A, Zarit SH, Tu X, et al. Suicide among older psychiatric inpatients: an evidence-based study of a high-risk group. Am J Geriatr Psychiatry. 2006;14(9):734–741.
- 101. Fagg J, Hawkins M, Hawton K, et al. Factors associated with suicide after parasuicide in young people. BMJ. 1993;306(6893):1641–1644.
- 102. Fawcett J, Scheftner W, Clark D, et al. Clinical predictors of suicide in patients with major affective disorders: a controlled prospective study. Am J Psychiatry. 1987;144(1):35–40.
- 103. Fawcett J, Scheftner WA, Fogg L, et al. Time-related predictors of suicide in major affective disorder. Am J Psychiatry. 1990;147(9):1189–1194.
- 104. Hansen PE, Wang AG, Stage KB, et al; Danish-University-Antidepressant-Group. Comorbid personality disorder predicts suicide after major depression: a 10-year follow-up. Acta Psychiatr Scand. 2003;107:436–440.
- 105. Hoang U, Stewart R, Goldacre MJ. Mortality after hospital discharge for people with schizophrenia or bipolar disorder: retrospective study of linked English hospital episode statistics, 1999–2006. BMJ. 2011;343:d5422. doi: 10.1136/bmj.d5422.
- 106. Kan CK, Ho TP, Dong JYS, et al. Risk factors for suicide in the immediate post-discharge period. Soc Psychiatry Psychiatr Epidemiol. 2007;42(3):208–214.
- 107. Kapur N, Hunt IM, Webb R, et al. Suicide in psychiatric in-patients in England, 1997 to 2003. Psychol Med. 2006;36:1485–1492.
- Links P, Nisenbaum R, Ambreen M, et al. Prospective study of risk factors for increased suicide ideation and behavior following recent discharge. Gen Hosp Psychiatry. 2012;34:88–97.
- 109. Nordentoft M, Mortensen PB, Pedersen CB. Absolute risk of suicide after first hospital contact in mental disorder. Arch Gen Psychiatry. 2011;68(10):1058–1064.
- 110. Agerbo E, Mortensen PB, Eriksson T, et al. Risk of suicide in relation to income level in people admitted to hospital with mental illness: nested case-control study. BMJ. 2001;322(7282):334–335.
- 111. Allebeck P, Varla A, Kristjansson E, et al. Risk factors for suicide among patients with schizophrenia. Acta Psychiatr Scand. 1987;76:414–419.
- 112. Appleby L, Dennehy JA, Thomas CS, et al. Aftercare and clinical characteristics of people with mental illness who commit suicide: a case–control study. Lancet. 1999;353(9162):1397–1400.
- 113. Bickley H, Hunt IM, Windfuhr K, et al. Suicide within two weeks of discharge from psychiatric inpatient care: a case–control study. Psychiatr Serv. 2013;64(7):653–659.
- 114. Burgess P, Pirkis J, Morton J, et al. Lessons from a comprehensive clinical audit of users of psychiatric services who committed suicide. Psychiatr Serv. 2000;51(12):1555–1560.

- 115. Crisanti AS, Love EJ. Mortality among involuntarily admitted psychiatric patients: a survival analysis. Soc Psychiatry Psychiatr Epidemiol. 1999;34(12):627–633.
- Deisenhammer EA, DeCol C, Honeder M, et al. In-patient suicide in psychiatric hospitals. Acta Psychiatr Scand. 2000;102(4):290–294.
- 117. Deisenhammer EA, Huber M, Kemmler G, et al. Psychiatric hospitalizations during the last 12 months before suicide. Gen Hosp Psychiatry. 2007;29(1):63–65.
- 118. Dong JYS, Ho TP, Kan CK. A case–control study of 92 cases of in-patient suicides. J Affect Disord. 2005;87(1):91–99.
- 119. Drake RE, Cotton PG. Depression, hopelessness and suicide in chronic schizophrenia. Br J Psychiatry. 1986;148:554–559.
- 120. Drake RE, Gates C, Cotton PG, et al. Suicide among schizophrenics. Who is at risk? J Nerv Ment Dis. 1984;172(10):613–617.
- Flood RA, Seager CP. A retrospective examination of psychiatric case records of patients who subsequently committed suicide. Br J Psychiatry. 1968;114:443–450.
- 122. Gaertner I, Gilot C, Heidrich P, et al. A case control study on psychopharmacotherapy before suicide committed by 61 psychiatric inpatients. Pharmacopsychiatry. 2002;35(2):37–43.
- 123. Gale SW, Mesnikoff A, Fine J, et al. A study of suicide in state mental hospitals in New York City. Psychiatr Q. 1980;52(3):201–213.
- 124. Geddes JR, Juszczak E, O'Brien F, et al. Suicide in the 12 months after discharge from psychiatric inpatient care, Scotland 1968–92. J Epidemiol Comm Health. 1997;51(4):430–434.
- Goldacre M, Seagroatt V, Hawton K. Suicide after discharge from psychiatric inpatient care. Lancet. 1993;342(8866):283–286.
- 126. Haklai Z, Goldberger N, Stein N, et al. The mortality risk among persons with psychiatric hospitalizations. Isr J Psychiatry Relat Sci. 2011;48(4):230–239.
- 127. Hattori T, Taketani K, Ogasawara Y. Suicide and suicide attempts in general hospital psychiatry: clinical and statistical study. Psychiatry Clin Neurosci. 1995;49(1):43–48.
- 128. Heila H, Haukka J, Suvisaari J, et al. Mortality among patients with schizophrenia and reduced psychiatric hospital care. Psychol Med. 2005;35(5):725–732.
- 129. Ho TP. The suicide risk of discharged psychiatric patients. J Clin Psychiatry. 2003;64(6):702–707.
- Ho T. Duration of hospitalisation and post discharge suicide. Suicide Life Threat Behav. 2006;36(6):682–686.
- Hoffman H, Modestin J. Completed suicide in discharged psychiatric inpatients. Soc Psychiatry. 1987;22:93–98.
- 132. Holley HL, Fick G, Love EJ. Suicide following an inpatient hospitalization for a suicide attempt: a Canadian follow-up study. Soc Psychiatry Psychiatr Epidemiol. 1998;33(11):543–551.
- Honkonen H, Mattila AK, Lehtinen K, et al. Mortality of Finnish acute psychiatric hospital patients. Soc Psychiatry Psychiatr Epidemiol. 2008;43:660–666.
- 134. Hung CI, Liu CY, Liao MN, et al. Self-destructive acts occurring during medical general hospitalization. Gen Hosp Psychiatry. 2000;22(2):115–121.
- 135. Hunt IM, Kapur N, Webb R, et al. Suicide in current psychiatric in-patients: a case–control study—The National Confidential Inquiry into Suicide and Homicide. Psychol Med. 2007;37(6):831–817.
- 136. Hunt IM, Buickley H, Windfuhr K, et al. Suicide in recently admitted psychiatric in-patients: a case–control study. J Affect Disord. 2013;144:123–128.
- 137. Keller F, Wolfersdorf M. Changes in suicide numbers in psychiatric hospitals: an analysis using log-linear time-trend models. Soc Psychiatry Psychiatr Epidemiol. 1995;30(6):269–273.
- 138. Kessing LV, Munk-Jørgensen P. Does type of first contact in depressive and bipolar disorders predict subsequent hospitalisation and risk of suicide? J Affect Disord. 2004;83(1):65–71.
- 139. King EA, Baldwin DS, Sinclair JMA, et al. The Wessex Recent In-Patient Suicide Study, 1. Case–control study of 234 recently discharged psychiatric patient suicides. Br J Psychiatry. 2001;178:531–536.

- 140. King EA, Baldwin DS, Sinclair JMA, et al. The Wessex Recent In-Patient Suicide Study, 2. Case–control study of 59 in-patient suicides. Br J Psychiatry. 2001;178:537–542.
- 141. Kjelsberg E, Neegaard E, Dahl AA. Suicide in adolescent psychiatric inpatients: incidence and predictive factors. Acta Psychiatr Scand. 1994;89(4):235–241.
- 142. Krupinski M, Fischer A, Grohmann R, et al. Risk factors for suicides of inpatients with depressive psychoses. Eur Arch Psychiatry Clin Neurosci. 1998;248:141–147.
- 143. Krupinski M, Fischer A, Grohmann R, et al. Psychopharmacological therapy and suicide of inpatients with depressive psychoses. Arch Suicide Res. 1998;4(2):143–155.
- 144. Kullgren G. Factors associated with completed suicide in borderline personality disorder. J Nerv Ment Dis. 1988;176(1):40–44.
- 145. Kuo CJ, Tsai SY, Lo CH, et al. Risk factors for completed suicide in schizophrenia. J Clin Psychiatry. 2005;66(5):579–585.
- 146. Lawrence DM, Holman CD, Jablensky AV, et al. Suicide rates in psychiatric in-patients: an application of record linkage to mental health research. Aust N Z J Public Health. 1999;23(5):468–470.
- 147. Lee HC, Lin HC. Are psychiatrist characteristics associated with postdischarge suicide of schizophrenia patients? Schizophr Bull. 2009;35(4):760–765.
- 148. Lin HC, Wu CH, Lee HC. Risk factors for suicide following hospital discharge among cancer patients. Psychooncology. 2009;18(10):1038–1044.
- 149. Luxton DD, Trofinovich L, Clark LL. Suicide risk among US service members after psychiatric hospitalization, 2001–2011. Psychiatr Serv. 2013;64(7):626–629.
- Marusic A, Tavcar R, Dernovsek M, et al. Comparison of psychiatric inpatient suicides with suicides completed in the surrounding community. Nord J Psychiatry. 2002;56(5):335–338.
- McKenzie I, Wurr C. Early suicide following discharge from a psychiatric hospital. Suicide Life Threat Behav. 2001;31(3):358–363.
- 152. Modestin J, Hoffmann H. Completed suicide in psychiatric inpatients and former inpatients. A comparative study. Acta Psychiatr Scand. 1989;79(3):229–234.
- Modestin J, Kopp W. Study on suicide in depressed inpatients. J Affect Disord. 1988;15:157–162.
- Modestin J, Schwarzenbach F. Effect of psychopharmacotherapy on suicide risk in discharged psychiatric inpatients. Acta Psychiatr Scand. 1992;85(2):173–175.
- 155. Modestin J, Zarro I, Waldvogel D. A study of suicide in schizophrenic in-patients. Br J Psychiatry. 1992;160:398–401. See comments.
- 156. Morgan HG, Stanton R. Suicide among psychiatric in-patients in a changing clinical scene—suicidal ideation as a paramount index of short-term risk. Br J Psychiatry. 1997;171:561–563.
- 157. Myers DH, Neal CD. Suicide in psychiatric patients. Br J Psychiatry. 1978;133:38-44.
- 158. Neuner T, Hubner-Liebermann B, Haen E, et al. Completed suicides in 47 psychiatric hospitals in Germany—results from the AGATE-Study. Pharmacopsychiatry. 2011;44(7):324–330.
- Perez-Carceles M, Inigo C, Luna A, et al. Mortality in maximum security psychiatric hospital patients. Forensic Sci Int. 2001;119(3):279–283.
- 160. Pirkis J, Burgess P, Jolley D. Suicide among psychiatric patients: a case–control study. Aust N Z J Psychiatry. 2002;36(1):86–91.
- 161. Pirkola S, Sohlman B, Wahlbeck K. The characteristics of suicides within a week of discharge after psychiatric hospitalisation—a nationwide register study. BMC Psychiatry. 2005;5:32.
- 162. Powell J, Geddes J, Deeks J, et al. Suicide in psychiatric hospital in-patients—risk factors and their predictive power. Br J Psychiatry. 2000;176:266–272.
- 163. Qin P, Nordentoft M. Suicide risk in relation to psychiatric hospitalization—evidence based on longitudinal registers. Arch Gen Psychiatry. 2005;62(4):427–432.
- 164. Qin P, Jepsen P, Norgard B, et al. Hospital admission for non-fatal poisoning with weak analgesics and risk for subsequent suicide: a population study. Psychol Med. 2009;39(11):1867–1873.

- Robin AA, Brooke EM, Freeman-Browne DL. Some aspects of suicide in psychiatric patients in Southend. Br J Psychiatry. 1968;114:739–747.
- Rorsman B. Suicide in psychiatric patients: a comparative study. Soc Psychiatry. 1973;8:55–66.
- 167. Roy A, Draper R. Suicide among psychiatric hospital in-patients. Psychol Med. 1995;25(1):199–202.
- 168. Roy A. Risk factors for suicide in psychiatric patients. Arch Gen Psychiatry. 1982;39:1089–1095.
- Shah AK, Ganesvaran T. Inpatient suicides in an Australian mental hospital. Aust N Z J Psychiatry. 1997;31(2):291–298.
- Steblaj A, Tavcar R, Dernovsek MZ. Predictors of suicide in psychiatric hospital. Acta Psychiatr Scand. 1999;100(5):383–388.
- 171. Sundqvist-Stensman UB. Suicides in close connection with psychiatric care: an analysis of 57 cases in a Swedish county. Acta Psychiatr Scand. 1987;76:15–20.
- 172. Suominen KH, Isometsä ET, Heila H, et al. General hospital suicides—a psychological autopsy study in Finland. Gen Hosp Psychiatry. 2002;24:412–416.
- 173. Taiminen TJ, Kujari H. Antipsychotic medication and suicide risk among schizophrenic and paranoid inpatients. A controlled retrospective study. Acta Psychiatr Scand. 1994;90(4):247–251.
- Taiminen T. Suicide contagion among psychiatric inpatients. Nord J Psychiatry. 1993;47(3):191–194.
- 175. Thong JY, Su AHC, Chan YH, et al. Suicide in psychiatric patients: case–control study in Singapore. Aust N Z J Psychiatry. 2008;42(6):509–519.
- 176. Wolfersdorf M, Keller F, Kaschka WP, et al. Suicide of psychiatric inpatients 1970–1993 in Baden-Wurttemberg (Germany). Arch Suicide Res. 1997;3(4):303–311.
- 177. Ajdacic-Gross V, Lauber C, Baumgartner M, et al. In-patient suicide—a 13-year assessment. Acta Psychiatr Scand. 2009;120(1):71–75.
- Allebeck P, Varla A, Wistedt B. Suicide and violent death among patients with schizophrenia. Acta Psychiatr Scand. 1986;74(1):43–49.
- 179. Allgulander C, Allebeck P, Przybeck TR, et al. Risk of suicide by psychiatric diagnosis in Stockholm County. A longitudinal study of 80,970 psychiatric inpatients. Eur Arch Psychiatry Clin Neurosci. 1992;241(5):323–326.
- 180. Andersen UA, Andersen M, Rosholm JU, et al. Contacts to the health care system prior to suicide: a comprehensive analysis using registers for general and psychiatric hospital admissions, contacts to general practitioners and practising specialists and drug prescriptions. Acta Psychiatr Scand. 2000;102(2):126–134.
- 181. Bahmanyar S, Sparen P, Rutz EM, et al. Risk of suicide among operated and non-operated patients hospitalised for peptic ulcers. J Epidemiol Comm Health. 2009;63(12):1016–1021.
- 182. Barner-Rasmussen P, Dupont A, Bille H. Suicide in psychiatric patients in Denmark, 1971–81. I. Demographic and diagnostic description. Acta Psychiatr Scand. 1986;73(4):441–448.
- Baxter D, Appleby L. Case register study of suicide risk in mental disorders. Br J Psychiatry. 1999;175:322–326.
- Busch KA, Fawcett J, Jacobs DG. Clinical correlates of inpatient suicide. J Clin Psychiatry. 2003;64(1):14–19.
- Busch K, Clark DC, Fawcett J, et al. Clinical features of inpatient suicide. Psychiatr Ann. 1993;23(5):256–262.

- Copas J, Robin A. Suicide in psychiatric in-patients. Br J Psychiatry. 1982;141:503–511.
- 187. Goh SE, Salmons PH, Whittington RM. Hospital suicides: are there preventable factors? Profile of the psychiatric hospital suicide. Br J Psychiatry. 1989;154:247–249. See comments.
- Hintikka J, Viinamaki H. Suicide within a day of discharge—failure of risk assessment? Nord J Psychiatry. 1998;52(1):15–21.
- Johansson LM, Johansson SE, Sundquist J, et al. Suicide among psychiatric in-patients in Stockholm, Sweden. Arch Suicide Res. 1996;2(3):171–181.
- 190. Jones RM, Hales H, Butwell M, et al. Suicide in high security hospital patients. Soc Psychiatry Psychiatr Epidemiol. 2011;46(8):723–731.
- 191. King EA. The Wessex Suicide Audit 1988–1993: a study of 1457 suicides with and without a recent psychiatric contact. Int J Psychiatry Clin Pract. 2001;5(2):111–118.
- 192. Meehan J, Kapur N, Hunt IM, et al. Suicide in mental health inpatients and within 3 months of discharge. National clinical survey. Br J Psychiatry. 2006;188:129–134.
- Modestin J, Wurmle O. Role of modelling in in-patient suicide: a lack of supporting evidence. Br J Psychiatry. 1989;155:511–514.
- 194. Morgan HG, Priest P. Suicide and other unexpected deaths among psychiatric in-patients. The Bristol confidential inquiry. Br J Psychiatry. 1991;158:368–374. See comments.
- 195. Mortensen PB, Juel K. Mortality and causes of death in first admitted schizophrenic patients. Br J Psychiatry. 1993;163(2):183–189.
- 196. Neuner T, Hubner-Liebermann B, Wolfersdorf M, et al. Time patterns of inpatient suicides. Int J Psychiatry Clin Pract. 2010;14(2):95–101.
- 197. Nordentoft M, Breum L, Munck LK, et al. High mortality by natural and unnatural causes: a 10 year follow-up study of patients admitted to a poisoning treatment centre after suicide attempts. BMJ. 1993;306:1637–1641.
- 198. Papadopoulos IN, Papaefthymiou M, Roumeliotis L, et al. Status and perspectives of hospital mortality in a public urban Hellenic hospital, based on a five-year review. BMC Public Health. 2008;8:28.
- 199. Proulx F, Lesage AD, Grunberg F. One hundred in-patient suicides. Br J Psychiatry. 1997;171(3):247–250.
- Ripley HS. Suicide in general hospitals. West J Med. 1979;130:408–410.
- Shapiro S, Waltzer H. Successful suicides and serious attempts in a general hospital over 15-year period. Gen Hosp Psychiatry. 1980;2(2):118–126.
- 202. Spiessl H, Hubner-Liebermann B, Cording C. Suicidal behaviour of psychiatric in-patients. Acta Psychiatr Scand. 2002;106:134–138.
- 203. Taiminen TJ, Helenius H. Suicide clustering in a psychiatric hospital with a history of a suicide epidemic: a quantitative study. Am J Psychiatry. 1994;151(7):1087–1088.
- 204. Taiminen TJ, Strandberg J, Kujari H. Inpatient suicide on a general hospital psychiatric ward: does experience with high risk patients help to prevent suicides? Arch Suicide Res. 1996;2(2):119–124.
- 205. Temoche A, Pugh TF, McMahon B. Suicide rates among current and former mental institution patients. J Nerv Ment Dis. 1964;138:124–131.