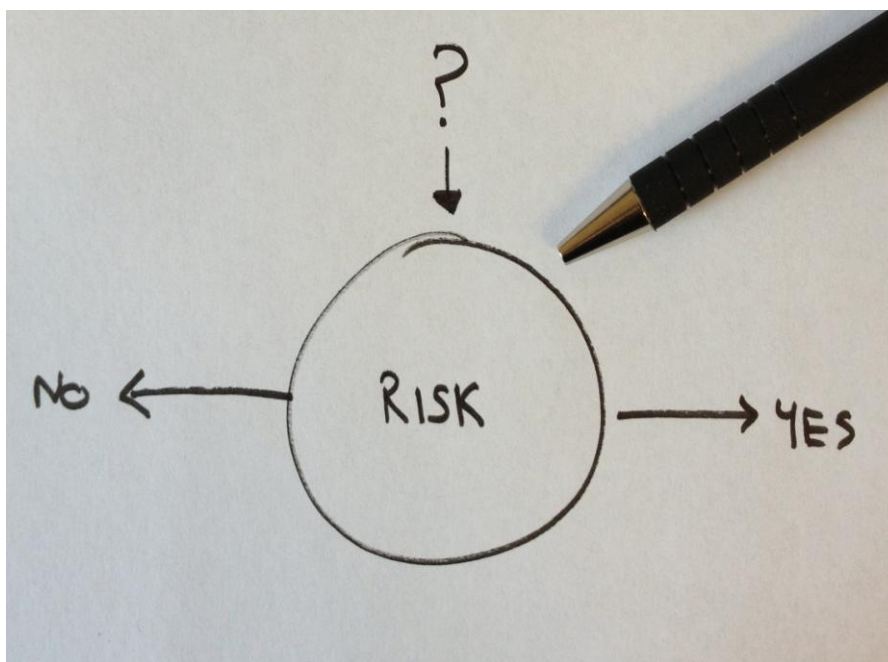


**QUALITY OF RISK ASSESSMENT PRIOR
TO SUICIDE AND HOMICIDE:
A PILOT STUDY**



DEVELOPED BY: The National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (NCISH)

COMMISSIONED BY: The Healthcare Quality Improvement Partnership (HQIP) on behalf of the funding bodies of the Department of Health; Department of Health, Social Services and Public Safety Northern Ireland; NHS Scotland; NHS Wales and the Channel Islands of Jersey and Guernsey to undertake the Mental Health Clinical Outcome Review Programme

REPORT SUMMARY

WHAT WAS THE STUDY ABOUT?

The risk factors associated with suicide and serious violence in mental illness are well documented. Despite this, risk is often reported by clinicians as having been low before a suicide or homicide occurs (the "low risk paradox"). One explanation is that the process of risk assessment may be unsatisfactory, though this is hard to show experimentally. The broad aims of the current study were:

- to assess the feasibility and reliability of applying a quality evaluation framework to risk assessment as recorded in clinical case notes, and
- to evaluate the quality of risk assessment and management in cases of patient suicide and homicide using this framework.

WHAT DID WE DO?

1. We developed a framework for evaluating the quality of risk assessment based on existing best practice guidelines and the available literature, including the following domains:
 - patient history, mental state and current circumstances
 - formulation of risk factors (i.e. making an overall judgment about risk)
 - management plan
 - communication of management plan, and
 - overall quality of assessment.
2. The cases were those in which the risk of suicide or homicide had been retrospectively rated as "none" or "low" at the final contact with mental health services, but where a fatal outcome occurred within seven days. Cases were sampled from the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (NCISH) database.
3. The framework for evaluating the quality of the risk assessment process was applied to 42 cases of patient suicide and 39 cases of patient homicide by two experienced clinicians.

WHAT DID WE FIND?

- Agreement on risk assessment quality was moderate to good between the two clinicians [κ score range: .84 (past history) to .54 (communication)].
- The overall quality of risk assessments was considered unsatisfactory in 36% ($n = 15$) of the patient suicides and 41% ($n = 16$) of the patient homicides.
- Risk formulations and management plans were the domains most likely to be judged unsatisfactory in both suicides and homicides.
- Unsatisfactory assessments prior to homicide were associated with a diagnosis of personality disorder or alcohol misuse.

WHAT ARE THE KEY MESSAGES FOR MENTAL HEALTH SERVICES?

We have identified a reliable method of assessing the quality of risk assessment. Services may want to use the framework and key principles we set out to examine their own processes, in particular that of individual risk assessment followed by personalised risk management.

Risk assessment and management **should:**

- be individual to each patient
- assess current risk factors and past history
- include a management plan that follows on from the risk assessment.

Risk assessment and management

should not:

- ignore past history
- equate the completion of a checklist with good risk formulation and management
- rely on a generic plan of clinical management.

SUMMARY

- This study showed it is feasible to develop a framework with which to assess the quality of the risk assessment process.
- Using this framework, we found that the overall quality of risk assessment and management was unsatisfactory in just over one third of a clinically important sample of patient suicides and homicides.
- The essence of good risk assessment and management is that they are individual to the patient.

INTRODUCTION

Suicide and homicide are the most serious adverse outcomes in mental health services. Many people who die by suicide or commit homicide have been diagnosed with a mental illness. One in four people who die by suicide and one in ten people who commit homicide have a history of contact with mental health services within the previous 12 months.¹⁻³

This has led to an actuarial approach in clinical practice in which overall risk is often seen as the sum of recorded risk factors. In contrast, structured clinical judgement (SCJ) or structured professional judgement (SPJ) tools represent a more recent development in risk assessment strategies.⁴⁻⁵ These tools incorporate historical as well as current clinical information to inform risk assessments and encourage the use of professional discretion. The development of the SCJ/SPJ tools has shifted the focus from attempting to predict adverse events, to identifying interventions that may reduce the likelihood of adverse outcomes.⁶

OUR RESEARCH SHOWS....

1 in 4 people who die by **suicide** have a history of recent contact with mental health services

1 in 10 people who commit **homicide** have a history of recent contact with mental health services

Characteristics which may influence the risk of suicide and homicide have been described in previous studies⁷⁻⁹, particularly in the mental health population¹⁰ including in-patients¹¹, post-discharge patients¹², patients in different age groups¹³⁻¹⁵ and gender.¹⁶ Mental health patients who die by suicide or commit homicide often have a number of features of high risk, including a previous history of self-harm, violence, and substance misuse.¹⁷

Paradoxically however, in over 80% of cases, clinicians rated the immediate risk of these outcomes as "low" or "none" at the final service contact.¹⁸

WHAT IS THE LOW RISK PARADOX?

In suicide and homicide, there are frequently factors associated with high risk (e.g. self-harm, substance misuse)

but...

risk is usually judged to be low at final contact with services

There are several reasons why this might be. Risk is dynamic and may change between last contact with mental health services and outcome, despite a good risk assessment having been carried out. Most risk factors have low specificity and do not distinguish high imminent risk from longstanding risk.

Alternatively, it may be that the final risk assessment itself was in some way unsatisfactory, omitting aspects of care or giving insufficient weight to risk factors. To our knowledge there have been no studies evaluating the quality of the risk assessment process following fatal outcomes.

In addition, clinicians may have incomplete information regarding patients, either due to previous poor case records or to the reluctance of patients to disclose.¹⁹ Furthermore, clinical settings are varied and this may influence clinical enquiry. For example, risk formulation may be necessarily brief during an emergency assessment.²⁰

Most clinical guidance on risk management in recent years has emphasised the need for structured assessment, an individual management plan and good communication between professionals. For example, the Department of Health in England has published best practice guidance aimed at specialist and general mental health services.⁴ The good practice points are shown in **Box 1**.

BOX 1: Good practice points in risk management⁴

1. Making decisions based on knowledge of the research evidence, individual patients and their social context, clinician's experience, and clinical judgement.
2. Positive risk management as a core skill.
3. Collaborative working with the patient and their carer.
4. Risk management must build on recognition of service user's strengths and should emphasise recovery.
5. Risk management requires an organisational strategy and efforts by individual practitioners.
6. Flexible strategies aimed at preventing a negative event from occurring or, if this is not possible, minimising the harm caused.
7. Consideration of general and specific risk factors when assessing someone.
8. Knowledge and understanding of mental health legislation.
9. Management plan should include a summary of all risks identified, formulations, and crisis plan.
10. Use of tools which are based on structured clinical judgement.
11. Integration of risk assessment and management.
12. Sensitivity in relation to diversity in race, faith, age, gender, disability and sexual orientation.
13. Awareness of changing levels of risk, requiring an individual approach.
14. Multidisciplinary and multi-agency approach in risk management plan.
15. Training should be updated at least every three years.

personality disorder and management of self-harm include comprehensive chapters on risk assessment. Both of these guidelines emphasise the need for comprehensive assessment of risk factors and multi-disciplinary management.²³⁻²⁴

In summary, five key themes emerge from national guidance and previous studies (**Box 2**).

Box 2: Key themes in risk assessment from national guidance and research

1. **Past psychiatric history and other events.** This should include developmental history, history of illness, self-harm, violence and forensic history.^{4,8,20-21}
2. **Assessment of current mental state.**^{8,20,25}
3. Risk factors associated with adverse outcomes to be brought together in a **risk formulation**, i.e. an overall judgment about risk.
4. **Clinical management plan to be based on the formulation**, i.e. understanding of the patient's risk factors, and how they interact.^{4,20}
5. **Management plan to be communicated effectively.**^{4,21,25}

Similar approaches are found in recent good practice guides from Northern Ireland and the Royal College of Psychiatrists.²¹⁻²²

The National Institute for Health and Clinical Excellence (NICE) publishes evidence-based clinical guidelines for a number of psychiatric conditions (e.g. borderline and antisocial personality disorder) and associated behaviours (e.g. violence (short term management) and self-harm (short term and longer term management)). Guidance documents on the management of antisocial

METHOD

The overall aim of the study was to investigate the process of risk assessment and management in mental health patients who died by suicide or committed homicide following recent contact with mental health services. These are individuals who had been reported to have been assessed as low or no risk at final service contact.

The specific objectives were to:

1. assess the feasibility of applying a quality evaluation framework to risk assessment and management as recorded in clinical case notes and investigate its inter-rater reliability
2. estimate the proportion of 'low risk' cases of patient suicide and homicide where the process of risk assessment and management was judged to be unsatisfactory.

WHAT WAS THE AIM?

To investigate the assessment and management of risk in mental health patients following suicide or homicide.

Study design and sampling

The study was a retrospective case note review. The study sample was obtained from the national dataset of all patient suicides and homicides collected by the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (NCISH).

A comprehensive description of the process of data collection is presented elsewhere.¹⁸ Briefly, there are three stages to collecting national data on patient suicides and homicides.

First, a comprehensive national sample of deaths receiving a verdict of suicide or undetermined death is identified from national datasets (i.e. Office for National Statistics for England and Wales; General

Register Office for Scotland; and Northern Ireland Statistics and Research Agency for Northern Ireland) and a similar comprehensive sample of homicide convictions is identified from national datasets (i.e. the Home Office Statistics Unit of Home Office Science for England and Wales, Scottish Court Service, Scottish Crown Office and Procurator Fiscal Service, Northern Ireland Courts and Tribunal Service).

Second, information on whether the deceased or perpetrator had been in contact with mental health services in the 12 months before death/conviction is obtained from administrative contacts in each mental health trust.

Third, clinical data about these patients are collected via a questionnaire sent to the clinician who had been caring for the patient. The questionnaire consists of sections covering social/demographic characteristics, clinical history, details of the suicide/homicide, aspects of care, details of final contact with services, and the respondents' views on prevention.

Cases

We aimed to collect case notes on around 50 cases of suicide and 50 cases of homicide for analysis. A random sample of patient suicides and homicides was selected from all patient suicides occurring between January 1st 2008 and December 31st 2008 and all patient homicides occurring between January 1st 2000 and December 31st 2008, in the United Kingdom. The time period from which patient homicides were sampled was longer to ensure a sufficient sample size for analysis.

The specific inclusion criteria were:

- patients who were aged 18 or older
- patients who were considered to be at no or low immediate risk of fatal outcome at the time of their last contact with mental health services
- patients for whom the last contact with services was recorded as being under general adult, old age or liaison psychiatry, alcohol or drug services, or forensic services
- last contact with mental health services was a face-to-face or telephone consultation
- suicide or homicide occurred within seven days of the last contact.

WHO WERE THE CASES?

A clinically important group of patients who were not considered to be at immediate risk of suicide or homicide at last contact but died or committed homicide soon after.

Patient case notes were requested from the clinical records departments of the mental health trusts where the patient had received care. Permission to review the clinical case notes was first sought from the consultant psychiatrist (or nominated clinician) who had been responsible for the care of the individual.

Evaluation of the quality of risk assessment and management

Quality evaluation framework

The recommendations from national guidance and findings from our previous work were developed into a framework for assessing the quality of risk assessment and management. This quality evaluation framework comprised six domains to capture the routine clinical activities judged to be central to a good quality assessment. The domains are shown in **Box 3**.

Box 3: Domains of the quality evaluation framework

1. Assessment of patient history.
2. Assessment of mental state, and current circumstances.
3. Formulation of risk factors.
4. Disposal/management plan.
5. Communication of management plan.
6. Overall quality of the assessment.

Process of clinical case note review using the evaluation framework

A retrospective case note review was carried out by two independent psychiatrists experienced in risk assessments (MSR, SG). The psychiatrists were chosen from two different backgrounds (MSR – forensic psychiatry, SG – general and community psychiatry). The psychiatrists were asked to rate the risk assessment process in each of

the six domains as either satisfactory or unsatisfactory using the quality evaluation framework. This dichotomous approach to judging quality was based on previous studies in this area.²⁶ Disagreements between clinicians were discussed to reach consensus. Any unresolved disagreements were resolved by a third clinician (NK).

Statistical analysis

As a pilot, the study was not designed to formally test any hypotheses and no power calculation was carried out. The sample size was intended to balance the time and resource requirements to carry out a detailed case note review. It was anticipated that around 50 patients in each group (suicide, homicide) would be sufficient for the purposes of the pilot study. We assumed that an initial sample of 65-70 would be needed to allow for subsequent exclusions and missing notes.

When percentages are reported, they refer to 'valid cases', i.e. cases for which the relevant information was available. Cohen's kappa was used to measure clinicians' agreement for each domain, i.e. a separate kappa coefficient was calculated for each domain for suicide and for homicide cases.²⁷ Kappa coefficients are categorised as follows: poor: less than 0.20; fair: 0.21-0.40; moderate: 0.41-0.60; good: 0.61-0.80; very good: 0.81-1.00. Significance levels were set at 5%.

Previous studies have shown that non-clinical²⁸⁻²⁹ and clinical³⁰ factors can be associated with omissions in care. To examine some of these factors, the result of domain six (overall quality) in each case was used as an outcome for analyses.

The list of variables collected as part of the Inquiry questionnaire is extensive and variables of interest were decided *a priori* based on those factors commonly identified in the literature, including: ethnicity, gender, accommodation/living circumstances, conditions under which the last contact took place, and patient diagnosis. Chi-squared and Fisher's exact tests were used to measure the statistical association between quality of risk assessment and management, and other factors. All data were analysed using STATA 11 statistical software.³¹

Ethical approval

A substantial amendment to the work of the Inquiry was approved by the North-West research ethics committee (Ref: ERP/96/136) for the collection of patient case notes. The study was approved by the National Information Governance Board for Health and Social Care (NIGB) enabling the collection of patient data without prior consent. The study was also adopted as a UK Mental Health Research Network (UKMHRN) study.

FINDINGS

Case notes were collected for 42 patient suicides and 39 patient homicides. The retrieval process is shown in **Figure 1**.

Characteristics of the study sample

The characteristics of the study sample are shown in **Table 1**. Patients who committed homicide were younger than those who died by suicide. The diagnostic profile differed, with the homicide group having more patients with schizophrenia and personality disorder and a higher rate of co-morbidity.

Figure 1: Flow chart of sample recruitment

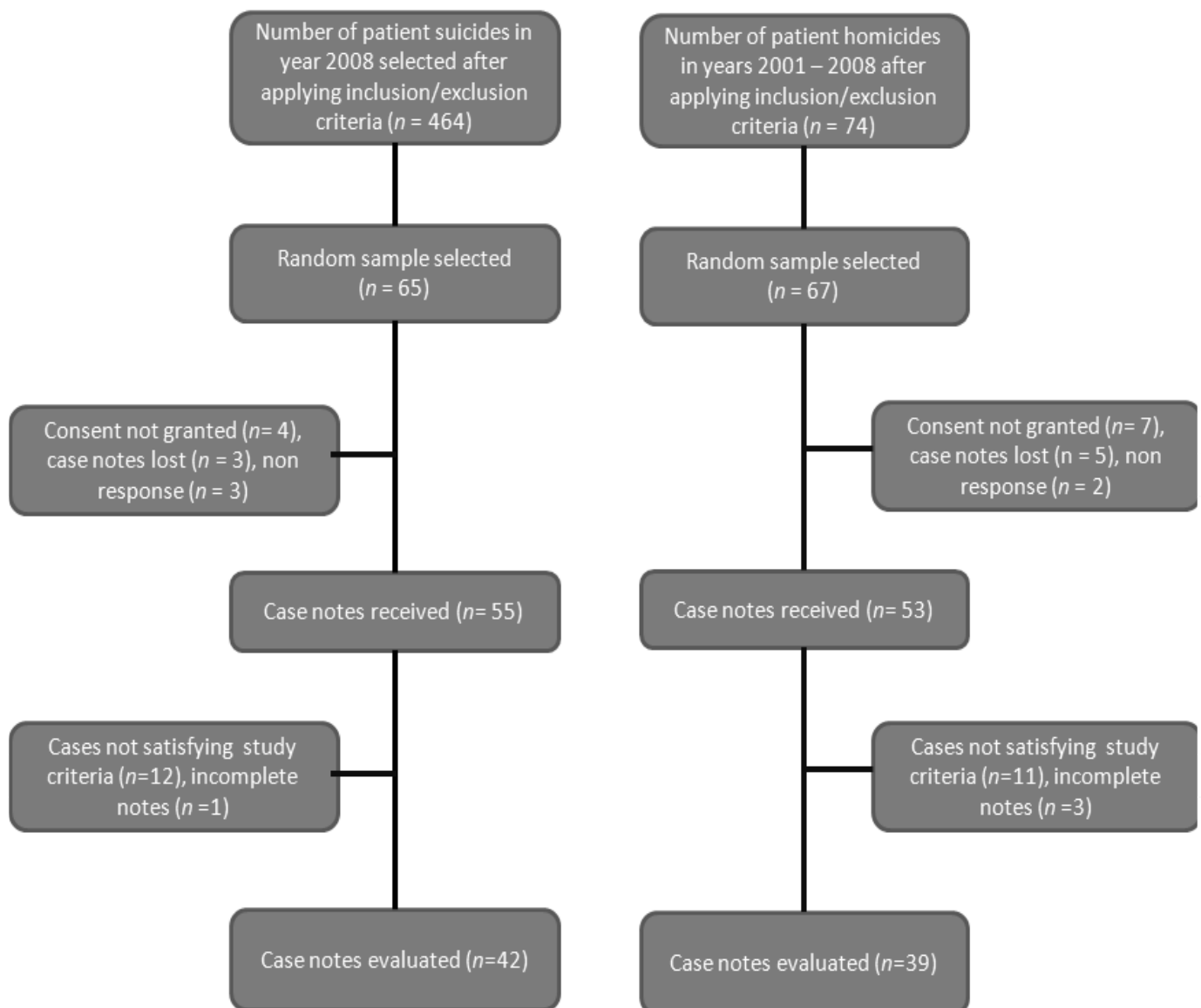


Table 1. Demographic, clinical and care characteristics of patient suicides and homicides

DEMOGRAPHIC	Suicide (N=42)		Homicide (N=39)	
	N	%	N	%
Age (mean±SD)	52.5 ± 15.2		36.1 ± 12.4	
Male	28	67%	30	77%
Ethnicity				
White	40	95%	29	74%
Black	1	3%	4	10%
Asian	1	3%	1	3%
Mixed race	0	-	2	5%
Other	0	-	3	8%
Married/co-habiting	13	32%	10	26%
Unemployed	17	41%	20	53%
Homeless/ no fixed abode	1	2%	4	11%
CLINICAL				
Primary diagnosis				
Schizophrenia/other delusional disorders	6	14%	18	46%
Affective disorder	26	61%	10	26%
Personality disorder	2	5%	6	15%
Other mental illness	7	17%	0	-
Drug/alcohol misuse or dependence	1	2%	5	13%
Co-morbidity				
Two or more diagnoses	22	52%	25	64%
History of drug/alcohol misuse	23	55%	27	69%
FINAL CONTACT WITH MENTAL HEALTH SERVICES				
Time between last contact & fatal incident				
Less than 24 hours	13	31%	0	-
1-7 days	29	69%	39	100%
Settings in which last seen*				
Patient's home	13	31%	-	-
In-patient ward	8	19%	-	-
Mental health unit	16	38%	-	-
Community/GP clinic	4	10%	-	-
A&E department	1	2%	-	-
Under which services was last contact				
General adult	38	90%	37	94%
Old age	4	10%	1	3%
Liaison	0	-	1	3%

* Data not collected for this item in the early years of the study. This item was therefore removed from analysis for homicide cases.

Evaluation framework

Inter-rater reliability and kappa co-efficients are shown in **Table 2**. Overall, there was moderate to good agreement between the two clinical assessors. There was no significant difference in inter-rater reliability between patient suicide and patient homicide cases. All disagreements were resolved at consensus meetings between the two clinical raters and none needed to be referred to the third clinician.

Table 2: Inter-rater reliability and kappa coefficients for the domains within the quality evaluation framework

	Agreement	Kappa (95% CI)
SUICIDE		
Past history	98%	---
Mental state examination	90%	0.61 (0.32-0.91)
Risk formulation	86%	0.63 (0.33-0.93)
Management	88%	0.74 (0.43-1.00)
Communication	90%	0.66 (0.36-0.96)
Overall quality	86%	0.67 (0.37-0.97)
HOMICIDE		
Past history	97%	0.91 (0.60-1.00)
Mental state examination	90%	0.75 (0.44-1.00)
Risk formulation	85%	0.68 (0.36-0.99)
Management	85%	0.68 (0.36-0.99)
Communication	79%	0.43 (0.13-0.73)
Overall quality	87%	0.73 (0.42-1.00)

Quality of risk assessment and management

Results for the quality of each assessment or management domain are shown in **Table 3**.

Overall quality was satisfactory in 64% of patient suicides. The domains of past history, mental state examination, and communication were most likely to be judged as satisfactory. Risk formulation and management were most likely to receive an unsatisfactory rating.

Table 3. Assessment of satisfactory or unsatisfactory risk assessment processes in six key domains

SUICIDE		
Domains	Satisfactory	Unsatisfactory
Past history	41 (98%)	1 (2%)
Mental state examination	36 (86%)	6 (14%)
Risk formulation	31 (74%)	11 (26%)
Management	26 (62%)	16 (38%)
Communication	35 (83%)	7 (17%)
Overall quality	27 (64%)	15 (36%)
HOMICIDE		
Domains	Satisfactory	Unsatisfactory
Past history	33 (85%)	6 (15%)
Mental state examination	28 (72%)	11 (28%)
Risk formulation	23 (59%)	16 (41%)
Management	23 (59%)	16 (41%)
Communication	30 (77%)	9 (23%)
Overall quality	23 (59%)	16 (41%)

The overall quality of risk assessment and management was satisfactory in 59% of patient homicides. The domains of past history, mental state examination, and communication were most likely to have been judged as satisfactorily assessed. Risk formulation and management were most likely to have received an unsatisfactory rating.

Factors associated with satisfactory and unsatisfactory risk assessment and management

The factors associated with satisfactory and unsatisfactory assessment and management of risk are shown in **Table 4**. For patient suicides, a diagnosis of schizophrenia was associated with a satisfactory assessment but in this small sample size it did not reach statistical significance. Previous psychiatric admission was also associated with a satisfactory assessment. For patient homicides, being homeless was

associated with a satisfactory assessment. Factors associated with an unsatisfactory risk assessment were a primary psychiatric diagnosis of personality disorder and alcohol misuse. There was no association between patient gender or ethnicity and the quality of the risk assessment process.

Table 4: Factors associated with satisfactory and unsatisfactory quality of risk assessment

Characteristics	Suicide			Homicide		
	Satisfactory	Unsatisfactory	p-value	Satisfactory	Unsatisfactory	p-value
Ethnicity (white compared to BME patients)	25 (63%)	15 (37%)	0.53	15 (52%)	14 (48%)	0.15
Gender						
Male	16 (57%)	12 (43%)	0.31	17 (57%)	13 (43%)	0.71
Female	11 (79%)	3 (21%)		6 (67%)	3 (33%)	
Homeless	0 (0%)	1 (100%)	0.36	0 (0%)	4 (100%)	0.02
Living alone	11 (79%)	3 (21%)	0.10	9 (56%)	7 (44%)	1.00
Primary diagnosis						
Schizophrenia/other delusional disorders	6 (100%)	0 (0%)	0.07	12 (67%)	6 (33%)	0.52
Personality disorder	2 (100%)	0 (0%)	0.53	1 (17%)	5 (83%)	0.03
Affective disorder	17 (65%)	9 (35%)	1.00	7 (70%)	3 (30%)	0.48
Alcohol misuse	12 (63%)	7 (37%)	1.00	10 (43%)	13 (57%)	0.02
Under general adult services at last contact (compared to other services)	25 (66%)	13 (34%)	0.61	21 (57%)	16 (43%)	0.5
Time between last contact & fatal incident less than 24 hours (compared to 1-7 days)	9 (69%)	4 (31%)	0.74	---	---	---
Any psychiatric admission	23 (74%)	8 (26%)	0.03	19 (59%)	13 (41%)	1.00

VIGNETTES

Suicide case: Patient A

Risk management

Patient A was being treated in the community and became acutely manic. The home treatment team could not engage her in the community, where she lived alone. A decision was made to detain her under mental health legislation. On the day of admission, she was given unescorted leave to retrieve clothes from home. Patient A was later found to have died by taking an overdose at home.

Comment: The clinical team clearly recognised the risk of suicide by detaining this patient. However, the decision to grant Patient A unescorted leave did not reflect this. Whilst risk is not always foreseeable, clinical decisions should be defensible.

Homicide case: Patient C

Management of personality disorder and substance misuse

Patient C was well known to the A&E liaison/crisis team. He had a history of polysubstance misuse, self harm and overdose of medications. Patient C had a chaotic lifestyle and had a history of low level violence. Following a break up with his partner, Patient C started attending A&E with increased frequency. The clinical team did not reconsider his treatment options and Patient C was discharged with information leaflets for the local voluntary services. Three days after his latest presentation, Patient C was arrested for killing his partner.

Comment: Patients with personality disorder repeatedly present in crisis. Given the risk associated with these patients, clinicians should be vigilant for warning signs such as life events, and be prepared to adjust management plans.

Suicide case: Patient B

History taking and risk formulation

An acutely psychotic male patient, with a history of substance abuse, criminal history and violence against his partner, was seen by the crisis team in the community. Since Patient B lived alone, the risk of violence was considered low and no attempt was made to assess his risk of suicide. Patient B went missing from home in the early hours of the morning, and was found drowned in the local reservoir.

Comment: Risk factors associated with suicide and serious violence often overlap. Clinicians should remain alert to these factors.

Homicide case: Patient D

Communication

A forensic psychiatric opinion was requested regarding an acutely psychotic young male patient, with a history of violence. The psychiatrist assessed Patient D urgently, and thought that he would benefit from clozapine as an in-patient. However, the letter did not reach the clinical team for more than 2 weeks. The patient was discharged under the care of the crisis team. He was arrested for killing his neighbour shortly after discharge.

Comment: Communication failure has often been identified as contributing to serious incidents. Clinicians should consider communicating their findings verbally, where risk may be high.

DISCUSSION

Summary of main findings

The first finding of this pilot study is that it is possible to assess the quality of risk assessment and management within psychiatric services with a good degree of reliability. Using this evaluation framework, we found that overall quality of risk assessment and management was unsatisfactory in 36% of cases of suicide and 41% of cases of homicide. Unsatisfactory risk assessments were most often related to quality of risk formulation and management plans both in suicide and homicide cases. We found that in cases of homicide, a diagnosis of personality disorder or alcohol misuse was significantly associated with unsatisfactory overall quality of risk assessment and management.

Limitations

This was a pilot study, designed to examine the feasibility of developing a framework against which the quality of care could be measured. A number of limitations should be noted:

First, the sample size was small. However, detailed clinical case note review is resource intensive. The sample size provided a balance between collecting good quality data and meeting the aims of the pilot study within available resources.

Second, selecting a sample of patients for whom the fatal event occurred within seven days of their last contact with mental health services and in whom risk was felt to be low or absent may have led to a biased sample of patients in whom the assessment process was particularly unsatisfactory. However, this group of patients is clinically important because the close proximity to care suggests greater potential for prevention.

Third, this was a retrospective study and the clinical assessors were not blind to the outcome (all patients had an adverse outcome). It may be that this led to a bias

towards rating the risk assessments as unsatisfactory. However, it was not feasible within the study timescale to capture the clinical complexity in an anonymised vignette or to recruit a control group who did not have a fatal outcome.

Fourth, we have taken clinical notes as an indicator of the clinical care received by the patients. However, clinical experience suggests that the full range of clinical activities, deliberations and decisions are not necessarily captured in case records. In a number of patient suicides and homicides in this study, case notes were limited in their scope. It was, therefore, not possible to determine whether patients received poor quality assessments or the case notes were poorly maintained. On the other hand, retrospective case note review is an established method of studying safety and quality in general medicine³², and similar methods have been used to study suicide in mental health and acute care.³³ Information recorded in case notes is one of the few aspects of past clinical care that is open to measurement.

Research implications

The project provides the foundation for further studies to explore the 'low risk paradox' – that clinicians usually report having assessed as low risk patients who die by suicide or commit homicide. Whilst we examined only the clinical decisions related to risk assessment and management, these occur as part of a broader clinical process that can contribute to patient safety incidents.³⁴ A future study could use the methodology and framework developed during this study, and incorporate classifications of error developed in other branches of medicine.

The study identified personality disorder to be associated with poor risk management disorder as making risk management more difficult and we have also heard this from individual clinicians. In future we will examine our database for more detailed information in incidents involving patients with this diagnosis.

Clinical implications

In a significant minority of cases, clinical risk assessment and management were judged to be unsatisfactory and the quality of care in general may not have been adequate. This is an uncomfortable conclusion for clinicians but one that should lead to improvements. In the majority of cases, however, risk assessment and management were satisfactory, even though they were followed within seven days by a fatal incident.

In a small but significant number of cases, even when risk was recognised, appropriate management did not follow. For example, in one of our cases, a patient was detained for acute psychosis and non-engagement but granted unescorted leave within a few hours of detention - an example of risk management not reflecting the specific risks identified (see vignettes for an example). This could be a consequence of a "tick box" approach to risk assessment, something that has been widely criticised by clinicians.

Patients with a primary diagnosis of personality disorder or alcohol misuse were more likely to receive an unsatisfactory assessment prior to homicide. These patients often follow a less predictable clinical course than patients with severe mental illness, characterised by chaotic lifestyles and conflict with clinicians.²⁸ Their risk may be more difficult to assess as a result and specialist care may be needed.

In summary, services may want to use the framework and key principles we set out to examine their own processes, in particular that of individual risk assessment formulation followed by personalised risk management.

Risk assessment and management **should:**

- be individual to each patient
- assess current risk factors and past history
- include a management plan that follows on from the risk assessment.

Risk assessment and management **should not:**

- ignore current circumstances or past history
- equate the completion of a checklist with good risk formulation and management
- rely on a generic plan of clinical management.

SUMMARY

This study demonstrates that it is possible to measure the quality of risk assessment and management for patients who die by suicide and commit homicide in a psychiatric setting with a good degree of reliability. Although all the patients in this study were judged to be at low risk shortly before they died or carried out a fatal attack, the findings suggest that the majority received a satisfactory assessment of risk, and appropriate management of risk. However, in a significant minority of cases - particularly among patient homicides - aspects of risk formulation and management care were unsatisfactory. Our study was limited to a review of clinical case notes, and did not examine the organisational issues (e.g. lack of beds or low patient to staff ratio) which may also have affected the risk assessment and management process. Future studies should examine a combination of individual and organisational aspects of patient care, and their impact on the assessment and management of patient risk.

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