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Why you should read this article:

- To gain knowledge of the risk factors for falls in older people on mental health inpatient wards
- To enhance your understanding of the essential elements of falls prevention strategies
- To consider the potential benefits of falls prevention training for nursing staff

Preventing falls in older people on mental health inpatient wards: a quality improvement project

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Abstract

Older people on mental health inpatient wards are at high risk of falls due to a combination of physiological, pathophysiological and pharmacological factors. Falls prevention should therefore be a priority for nursing staff caring for this patient group. This article describes a quality improvement project conducted on four older adult mental health inpatient wards in Scotland. The project aimed to reduce the number of falls, increase staff's adherence to person-centred falls prevention care planning, and ensure every fall would prompt a post-fall review. Nursing staff participated in a falls prevention training session and registered nurses received, in addition, one-to-one coaching sessions on person-centred care planning. Despite the challenges faced by mental healthcare professionals at the time of the project, staff responded positively and there was a decrease in the number of falls, including falls resulting in harm.

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Keywords

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FALLS IN hospitals are the most commonly reported patient safety incident, with more than 240,000 reported in acute hospitals and mental health trusts in England and Wales (Office for Health Improvement and Disparities 2022). There is some evidence that mental health inpatient settings have, on average, higher rates of falls than acute hospital wards (Cameron et al 2018). The effects of falls on patients include loss of confidence, fear of falling and loss of function, which can negatively affect people's quality of life (Collerton et al 2012, Botek 2020, Montero-Odasso et al 2021). Experiencing a fall while in hospital has been shown to increase the length of hospital stay (Gettens and Fulbrook 2015).

The risk of falls increases with age. Common factors associated with ageing that increase the risk of falls include loss of muscle strength, balance and gait unsteadiness, postural hypotension and visual and functional impairments (Rubenstein 2006). Older people may also have physical and mental health conditions that increase their risk of falls (Fernando et al 2017, Chan and Chan 2019, Forns et al 2021). Functional mental health issues that increase the risk of falls include depression (Brito et al 2014), bipolar disorder (Hausdorf et al 2004) and psychosis

(Forns et al 2021). Some medicines commonly prescribed in older people's mental health inpatient settings – including antipsychotics, mood stabilisers and antidepressants – are associated with an increased risk of falls (Seppala et al 2021). In older people who have dementia, the risk of falls is increased by suboptimal visuospatial awareness and impaired recognition of, and ability to avoid, trip hazards (van Doorn et al 2003, Chan and Chan 2019).

This combination of physiological, pathophysiological and pharmacological factors is likely to increase the risk of falls in older people receiving care on mental health inpatient wards. Falls prevention, which involves multifactorial risk assessment and management and the implementation of preventive strategies, should therefore be a priority in mental health inpatient settings caring for older people (Karlsson et al 2013, National Institute for Health and Care Excellence 2017, Scottish Government 2019).

Quality improvement project

Between April 2021 and October 2021, a quality improvement project around falls prevention was carried out on four older adult mental health inpatient wards in two NHS community hospitals in Scotland. The wards, which have a total of 58 beds, encompass a dementia assessment ward, a complex care ward for people with dementia, a functional assessment ward and a complex care ward for people with functional mental health conditions.

Aims and tools

The overall aim of the project was to reduce the number of falls by 20% across the four wards. The Scottish Patient Safety Programme has set a target of reducing the number of falls experienced by adult inpatients in acute hospital settings by 20% by September 2023 (Healthcare Improvement Scotland 2021a). While that target does not apply to mental health inpatient settings, the authors thought it would be a useful, albeit ambitious, aim to adopt for the project. No specific aim was set in relation to reducing the harm resulting from falls, but the intention was to explore, alongside the number of falls, any measurable effects of falls on patients.

The project also aimed to increase nursing staff's adherence to person-centred falls prevention care planning and to ensure that a post-fall review would be conducted after every fall. Before the project, all four wards already held routine communication huddles twice per shift, so the aim was that every fall would be discussed at these huddles.

Post-fall reviews are one of several interventions recommended by the Scottish Patient Safety Programme for reducing the number of falls experienced by adult inpatients in acute hospital settings (Healthcare Improvement Scotland 2021a). Evidence suggests that immediate post-fall reviews can reduce the incidence of falls in older inpatients (Jones et al 2019).

Post-incident reviews of serious adverse events, including falls, have been implemented in healthcare settings using the Swarm model (Motuel et al 2017). A 'swarm' is when staff come together after an incident, while it is still fresh in everybody's mind, to determine its causes and discuss how to prevent further similar incidents from happening in the future. One principle of the Swarm model is that 'swarms' are held in a blame-free environment. The Swarm model is a collaborative approach designed to improve problem solving and data collection (Motuel et al 2017).

The project was planned and implemented using quality improvement tools including a project charter (also called a project brief or mandate) and Plan Do Study Act (PDSA) cycles (NHS England 2022). The project charter described the aims of the project, its scope, the changes that would be introduced and how their effects would be evaluated. The PDSA cycles were used to develop, test and implement the changes. The project lead was the first author of this article.

Interventions

The main intervention used to achieve the aims of the project was an evidence-based falls prevention training session that was to be delivered to nursing staff at all levels, with a view to improving their knowledge and skills in assessing patients' risk of falls, implementing preventive strategies and undertaking routine post-fall reviews. The training session was developed by the project lead and was designed to be participatory and engage staff on a personal level to encourage them to prioritise falls prevention on their wards.

The project lead delivered 22 training sessions to 89 nursing staff (out of a possible 120) during the project period, so 74% of nursing staff had attended a training session by October 2021. Training was delivered via a videoconferencing platform to small, mixed-level groups of staff. Each session lasted three hours.

The contents of the training session are shown in Box 1.

Key points

- Older people are at high risk of falls due to physiological, pathophysiological and pharmacological factors
- The risk of falls is potentially higher in mental health inpatient settings than in acute hospitals
- Falls prevention involves multifactorial risk assessment and management and the implementation of preventive strategies
- Person-centred care planning is a crucial aspect of falls prevention in mental health inpatient settings
- Post-fall reviews can reduce the incidence of falls in older inpatients so every fall should prompt a post-fall review

All staff who attended the falls prevention training were asked to complete an evaluation questionnaire at the end of the session. The project lead also collected informal verbal feedback from attendants.

Before being rolled out, the training session had been piloted and some of the staff who had attended the pilot session said that they did not feel confident in their person-centred care planning skills. Person-centred care planning is a crucial aspect of falls prevention in mental health inpatient settings, so it was decided to provide, in parallel with the training sessions, separate one-to-one coaching sessions on that aspect of care to registered nurses.

Each one-to-one coaching session lasted two hours and was delivered by the project lead via a videoconferencing platform. The coaching sessions were based on the Mental Welfare Commission for Scotland (2019) good practice guide on person-centred care plans. They were delivered to 44 registered nurses (out of a possible total of 80) during the project period, so 55% of registered nurses had received a one-to-one coaching session by October 2021.

Measurable outcomes

Number of falls

Data on the monthly number of falls in the four wards were retrieved from DATIX, the NHS Scotland incident reporting system, with the aim of comparing the number of falls during the seven-month project period (April 2021 to October 2021) with the number of falls in the 18 months preceding the project (October 2019 to March 2021). Monthly reporting on DATIX differentiates between falls in general and falls that have resulted in harm, which may be minor (no treatment required), moderate (first aid required) or severe (injury likely to require a recovery period of at least one month).

In addition to incident reporting on DATIX, health boards in Scotland are required to report, to the Scottish government, data on 'falls with harm' among inpatients. These data are used to calculate a falls rate per 1,000 occupied bed days. 'Falls with harm' are defined as falls prompting a need for further intervention in secondary care and/or falls prompting radiological investigation that confirms the presence of harm (Healthcare Improvement Scotland 2021b). The project lead decided that this would be a useful metric to include in the evaluation.

Adherence to person-centred falls prevention care planning

Nursing staff's adherence to person-centred falls prevention care planning was evaluated by auditing 40 randomly chosen patient records, ten for each of the four wards, at baseline and after the interventions. The number of risks recorded on each patient's individual falls risk assessment was compared with the number of falls prevention interventions outlined in the patient's care plan, the aim being to determine whether sufficient preventive strategies were in place to mitigate the identified risks. The data obtained were used to calculate a mean adherence rate to person-centred falls prevention care planning. The aim was to achieve a mean adherence rate of 90% by the end of the project period.

Post-fall reviews

Whether post-fall reviews were conducted after every fall was evaluated by comparing the number of reported falls with the number of completed post-fall review documents during the project period.

Box 1. Contents of the falls prevention training session

The evidence-based falls prevention training session consisted of teaching and discussing:

- The incidence of falls in older people, in general and in mental health inpatient settings in particular
- Mental health issues and risk of falls
- The 'human' cost of falls, including psychological adverse effects and physical deconditioning (Auais et al 2016)
- Intrinsic risk factors (for example, postural hypotension, syncope) and extrinsic risk factors (for example, wet floor, trip hazards) for falls
- Falls prevention, which involves multifactorial risk assessment and management and the implementation of preventive strategies (for example, providing older people with opportunities to undertake physical activities)
- The importance of person-centred falls prevention care planning
- The post-fall review process
- National strategies and policies including:
  - Care of Older People in Hospitals Standards (Healthcare Improvement Scotland 2015)
  - National Falls and Fracture Prevention Strategy 2019-2024 Draft: Consultation (Scottish Government 2019)
  - Falls in Older People: Assessing Risk and Prevention (National Institute for Health and Care Excellence 2013)

The falls prevention training session encouraged participants to consider:

- The circumstances of each fall
- Each patient's risks for falls, including risks identified in the patient's individual falls risk assessment and additional risks such as those associated with deteriorating mental and/or physical health
- Person-centred falls prevention strategies, existing or new, that could be used to meet the individual needs of each patient

Findings

Number of falls

According to DATIX data, there had been an 18.60 mean monthly number of falls in the four wards combined in the 18 months preceding the project (October 2019 to March 2021). That number had decreased to 14.42

in the project period (April 2021 to October 2021), equating to a 22% decrease in the mean monthly number of falls.

DATIX data on falls that had resulted in minor, moderate or severe harm showed that there had been a 19% decrease in the mean monthly number of falls resulting in harm.

Finally, when looking at the rate of 'falls with harm' per 1,000 occupied bed days, data analysis showed that there had been a 48% decrease between the preceding 18 months and the project period.

Table 1 summarises the data on the number of falls.

Figure 1 shows the rate of 'falls with harm' per 1,000 occupied bed days in the four wards combined from October 2019 to October 2021. For six of the seven months of the project period, the falls rate was below the overall median. The spike in the falls rate in July 2021 is likely to have been due to the admission of two patients with dementia who experienced several falls. The two patients had been adversely affected by their transfer and their mental state had deteriorated as a consequence. In both cases this was resolved within one month of admission.

Figure 2 shows the number of falls that had resulted in mild, moderate or severe harm as reported on DATIX in the four wards combined from October 2019 to October 2021. For six of the seven months of the project period, the number of falls was below the overall median.

On one ward, there had been no decrease in the rate of 'falls with harm' per 1,000 occupied bed days in the project period compared with the preceding 18 months. That ward had experienced a marked reduction in the number of falls before the start of the project, having established and embedded routine post-fall reviews as a result of a previous project conducted some years earlier. The ward already had a low rate of falls at the start of the project, which made it challenging to demonstrate any positive change.

Adherence to person-centred falls prevention care planning

The mean adherence rate to person-centred falls prevention care planning was found to be 67% in April 2021, before registered nurses started receiving coaching sessions. It had increased to 73% in October 2021, after all coaching sessions had been delivered. This represented a 6% improvement but fell short of the aim of achieving a mean adherence rate of 90% date by the end of the project.

Table 1. Summary of data on the number of falls

	18 months preceding the project (October 2019-March 2021)	Project period (April 2021-October 2021)	Percentage decrease
Mean monthly number of falls in the four wards combined (DATIX data)	18.60	14.42	22%
Mean monthly number of falls resulting in mild, moderate or severe harm in the four wards combined (DATIX data)	5.61	4.57	19%
Mean rate of 'falls with harm'* per 1,000 occupied bed days in the four wards combined	2.72	1.42	48%

*Defined as falls prompting a need for further intervention in secondary care and/or falls prompting radiological investigation that confirms the presence of harm (Healthcare Improvement Scotland 2021b)

Figure 1. Rate of 'falls with harm' per 1,000 occupied bed days in the four wards combined

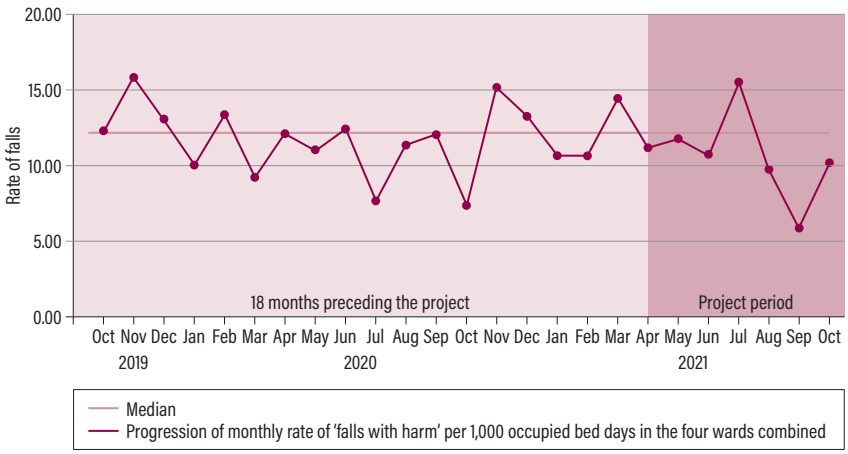
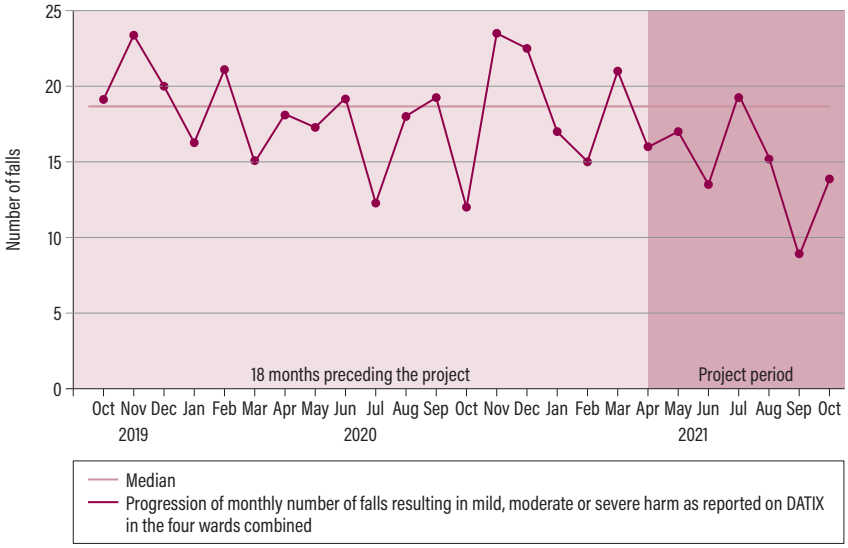


Figure 2. Number of falls resulting in mild, moderate or severe harm as reported on DATIX in the four wards combined



Post-fall reviews

During the project period, post-fall review documentation was completed for 57% of all falls in the four wards combined. The percentage varied from 39% to 100% depending on the ward.

Staff feedback

Of the 89 staff who had attended the training session, 52 completed the evaluation questionnaire, of whom 48 (92%) stated that the session had considerably improved their knowledge regarding falls risk assessment and falls prevention. Staff feedback included the following:

'I have experience of the impact of falls in my family and it had a devastating effect on my relative. We don't always consider that when we have a patient who falls, the psychological effects and the effect it has on people's quality of life.'

'The statistics were truly eye opening and clearly reinforced the need for such training.'

'It made me question what I have been doing all these years. Why didn't I know this stuff?'

Discussion

Providing mental healthcare in the UK has become increasingly challenging for staff. Scotland has been experiencing similar challenges to those described in a report on mental health inpatient capacity in England (The Strategy Unit 2019), including bed closures and increased acuity of patients' presentations. The report noted that there had been a 73% reduction in the number of mental health inpatient beds in NHS facilities in England between 1987/88 and 2018/19; that bed occupancy rates regularly exceeded 95% in some areas; and that the acuity threshold for admission to a mental health inpatient setting had increased (The Strategy Unit 2019). The report also found growing challenges regarding the recruitment and retention of staff. These various challenges are affecting the work of mental health nurses and therefore the implementation of quality improvement projects in mental health inpatient settings.

The quality improvement project described in this article experienced additional challenges because it took place during the coronavirus disease 2019 pandemic. During outbreaks of infectious disease, staff are exposed to high levels of stress and anxiety, which can reduce job satisfaction, decrease morale, increase absenteeism and therefore negatively affect the quality of patient care (Brooks et al 2020, Ahorsu et al 2022).

These considerable challenges, including the additional pressures on services caused by the pandemic, were potential barriers to the project and may have resulted in resistance to change and/or low engagement with the project. They may partly explain, for example, why the mean adherence rate to person-centred falls prevention care planning was only 73% by the end of the project, falling short of the aim of 90% adherence. They may also explain why post-falls review documentation was only completed for 57% of all falls during the project period. However, when comparing the project period with the preceding 18 months, there had been a 22% decrease in the average number of monthly falls, a 19% decrease in the average monthly number of falls resulting in harm, and a 48% decrease in the mean rate of 'falls with harm' per 1,000 occupied bed days. The decrease in falls resulting in harm was a particularly welcome finding, considering the negative physical and psychological effects of falls on patients.

Furthermore, despite some negative comments made during the first few training sessions (such as 'There isn't a lot we can do about falls; they are to be expected in this patient group'), the training sessions were generally well received and staff appeared to respond positively to the project. Staff also appreciated being encouraged to reflect on the 'human' effects of falls and reported that falls prevention had taken a higher priority since they had attended the training. For example, they would now consider patients' medicine-related risk of falls from the point of admission, thereby supporting the early identification of potential concerns and the implementation of falls prevention interventions.

Limitations

One nurse led the project, developed and delivered the training and analysed the data. The fact that the same person delivered the training and analysed the data created a potential risk of bias. It also limited the capacity to explore potentially useful areas of the quality improvement process in more depth. For example, it could have been useful to explore staff's personal engagement in falls prevention before and after the training using qualitative methods; to examine how specific aspects of the training had translated into practice; and to study the contents of post-fall review discussions to determine the effects of team dynamics on decision-making.

Implications for practice

In a report on age inequality in mental healthcare, the Royal College of Psychiatrists (2018) stated that approximately 50% of older people in general hospitals and 60% of older people in care homes have a mental health condition. The findings from this quality improvement project may therefore be relevant not only for mental health inpatient settings, but also for health and social care services more broadly. Mental health inpatient settings need to consider providing falls prevention training to all nursing staff in an effort to promote person-centred falls prevention care planning and embed routine post-fall reviews. Health and social care services outside of mental health inpatient settings need to include mental health-specific aspects of falls prevention in their training and post-incident review processes.

Conclusion

Older people on mental health inpatient wards are exposed to multiple risk factors for falls so falls prevention should be a crucial aspect of care provision in that setting. The quality improvement project described in this article consisted in delivering falls prevention training to nursing staff on four older adult mental health inpatient wards. Despite the project being conducted in the context of considerable pressures on mental healthcare professionals, staff engaged with the project, their adherence to person-centred falls prevention planning increased, and a reduction in the number of falls – including falls resulting in harm – was seen. This demonstrates that there are benefits of providing falls prevention training to nursing staff in older adult mental health inpatient settings, and possibly in health and social care services more broadly.

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