

BMJ Open Factors associated with the decision to prescribe and administer antipsychotics for older people with delirium: a qualitative descriptive study

Emily J Tomlinson ^{1,2,3}, Helen Rawson ⁴, Elizabeth Manias ^{1,2,3}, Nicole (Nikki) M Phillips^{1,2,3}, Peteris Darzins⁵, Alison M Hutchinson^{1,2,3}

To cite: Tomlinson EJ, Rawson H, Manias E, *et al.* Factors associated with the decision to prescribe and administer antipsychotics for older people with delirium: a qualitative descriptive study. *BMJ Open* 2021;11:e047247. doi:10.1136/bmjopen-2020-047247

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2020-047247>).

Received 30 November 2020
Accepted 14 June 2021



© Author(s) (or their employer(s)) 2021. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

¹Quality and Safety Patient Research Centre, Deakin University, Geelong, Victoria, Australia

²Institute of Health Transformation, Deakin University, Geelong, Victoria, Australia

³School of Nursing and Midwifery, Deakin University, Geelong, Victoria, Australia

⁴Nursing and Midwifery, Monash University, Clayton, Victoria, Australia

⁵Eastern Health Clinical School, Monash University, Clayton, Victoria, Australia

Correspondence to

Dr Emily J Tomlinson;
emily.cull@deakin.edu.au

ABSTRACT

Objectives To explore factors associated with decision-making of nurses and doctors in prescribing and administering as required antipsychotic medications to older people with delirium.

Design Qualitative descriptive.

Setting Two acute care hospital organisations in Melbourne, Australia.

Participants Nurses and doctors were invited to participate. Semi-structured focus groups and individual interviews were conducted between May 2019 and March 2020. Interviews were audio-recorded and transcribed verbatim. Data were analysed using thematic analysis.

Results Participants were 42 health professionals; n=25 nurses and n=17 doctors. Themes relating to decisions to use antipsychotic medication were: *safety; a last resort; nursing workload; a dilemma to medicate; and anticipating worsening behaviours*. Nurses and doctors described experiencing pressures when trying to manage hyperactive behaviours. Safety was a major concern leading to the decision to use antipsychotics. Antipsychotics were often used as chemical restraints to 'sedate' a patient with delirium because nurses 'can't do their job'. Results also indicated that nurses had influence over doctors' decisions despite nurses being unaware of this influence. Health professionals' descriptions are illustrated in a decision-making flowchart that identifies how nurses and doctors navigated decisions regarding prescription and administration of antipsychotic medications.

Conclusions The decision to prescribe and administer antipsychotic medications for people with delirium is complex as nurses and doctors must navigate multiple factors before making the decision. Collaborative support and multidisciplinary teamwork are required by both nurses and doctors to optimally care for people with delirium. Decision-making support for nurses and doctors may also help to navigate the multiple factors that influence the decision to prescribe antipsychotics.

INTRODUCTION

Delirium is an acute neurocognitive condition that commonly develops in people during hospitalisation.^{1,2} It occurs as a direct result of a physiological disturbance and is characterised by an acute change in a

Strengths and limitations of this study

- To our knowledge this is the first research study to provide a detailed analysis of decision-making for use of antipsychotics in hospitalised older people with delirium.
- Analyses experiences from both nurses and doctors to provide an account of prescribing practices for antipsychotic agents.
- Participants represented a wide variety of expertise and experience across two health services.
- A limitation was the inability to interview both doctors and nurses in the same focus group.

person's cognition and attention.² Around 16%–20% of people admitted to acute inpatient wards,^{3–5} 56% of people with dementia¹ and approximately 45%–87% of people in the intensive care unit, develop delirium during hospitalisation.^{6,7} The development of delirium can significantly complicate hospitalisation and can increase the risk experiencing many long-term adverse problems.

Clinical symptoms of delirium present as either hyperactive (restless or aggressive), hypoactive (quiet or withdrawn) or a mixture of both.⁸ Restless, agitated or aggressive behaviours of delirium may be due to multiple causes including, pain or hypoxia. Nurses and doctors often find that these agitated and aggressive behaviours are difficult to treat and manage. Nurses have reported that patients with hyperactive behaviours significantly impact on workload pressures for nurses.⁹ Nurses also state that dealing with the unpredictable and fluctuating condition of delirious patients is often distressing.¹⁰ The experience of delirium can also be highly distressing for patients and their families. Patients who have experienced an episode of delirium have reported feeling incomprehensible emotional pain, remorse,



guilt and shame for the behaviours they experienced during hospitalisation.¹¹

Management of delirium is complex and requires the identification and treatment of the underlying cause (eg, acute infection, metabolic imbalances, dehydration or malnutrition). There is a broad range of causes of delirium, which can influence its management.¹² For example, the delirium that is present in a methamphetamine affected young man, requires a different approach to the delirium in an older person with urosepsis. Often more than one possible cause of delirium may be present, in which cases attention is directed to as many remediable factors as possible.

Multicomponent, non-pharmacological interventions are recommended in all clinical settings (eg, acute medical, surgical and intensive care) for the prevention of delirium as well as initial management if a patient develops delirium.¹³ Non-pharmacological interventions include frequent orientation, frequent communication with family/carers, early mobilisation, visual/hearing aids and early recognition of dehydration.¹⁴ Systematic review evidence has shown that rates of incident delirium (relative risk (RR) 0.73, $p < 0.001$) and accidental falls (RR 0.39, $p = 0.003$) are significantly reduced when nurses implement a series of non-pharmacological prevention strategies.¹⁴ Non-pharmacological strategies can also aid in reducing severity of symptoms,¹⁵ reducing duration of delirium¹⁶ and reducing use of physical restraints.¹⁷ Restraint-free environments have also been achieved for patients with hyperactive delirium behaviours by implementing non-pharmacological approaches such as the 'T-A-DA method' ('tolerate, anticipate and don't agitate').¹⁸ Simulated family presence (pre-recorded video messages) has also been shown to be effective as a non-pharmacological intervention for management of agitated behaviours due to delirium.¹⁹

Due to the significant impact on care provision, hyperactive behaviours of delirium are often treated with pharmacological interventions such as antipsychotic medications.²⁰ However, antipsychotic medications are not effective in preventing or treating delirium and are not associated with a change in delirium duration, severity or length of hospital stay and may cause harm to patients.^{21 22} The *Beers Criteria for Potentially Inappropriate Medication Use in Older Adults*,^{23 24} the *Screening Tool of Older Persons' Prescriptions—Screening Tool to Alert to Right Treatment criteria*^{25 26} and the *Australian Delirium Clinical Care Standards*²⁷ strongly recommend avoiding antipsychotic medications in older people due to an increased potential for harm. Evidence suggests, however, that adherence to this recommendation frequently does not occur for older people with delirium.²⁸ Doses of antipsychotics administered to patients with delirium are also, on average, higher than recommended doses²⁸ leading to potentially worse clinical outcomes.

The presence of dementia may influence delirium management in a variety of ways.²⁹ Certain types of dementia may have different presentation of delirium,

and it may be difficult to determine where the dementing process ends and the delirium starts.²⁹ For example, in Lewy body dementia there may be fluctuating alertness and visual hallucinations in addition to marked memory loss.³⁰ In treated Parkinson's disease dopamine agonist therapy may cause confusion and visual hallucinations. This causes diagnostic difficulty. Further, antipsychotic therapy in these settings might cause profound bradykinesia and somnolence,³¹ hence these are best avoided. In vascular dementia disinhibition may be prominent³² and this may be exacerbated by delirium. Loud, aggressive outbursts may occur.³² It can be difficult to determine whether the outbursts are due to pre-existing dementia and disinhibition or due to delirium. Some patients, with vascular dementia, who have some clumsiness of gait may be rendered at high risk of falls with even small doses of psychoactive medications,³³ hence these treatments are best avoided in such situations. These are just a few examples of the many ways that clinicians adjust their approaches to the management of delirium in patients with dementia.

As primary caregivers, nurses are likely to be exposed to patients with delirium and need to manage the associated behaviours. Nurses and doctors need to make decisions on how to manage and treat patients with hyperactive behaviours of delirium. Compared with non-pharmacological interventions, administration of antipsychotics may be a 'quick' treatment that has immediate effect.³⁴ However, attempts to make the patient more manageable through using antipsychotics can result in worse clinical outcomes such as sedation, dizziness, falls, urinary incontinence, functional decline and confusion.³⁴ As required (*pro re nata*, PRN) antipsychotic medications are often prescribed and administered according to the circumstances or need; however, there is a paucity of evidence regarding factors that influence clinicians' decisions for people with delirium according to a specific circumstance or need. As such, there is no evidence currently available that examines the factors associated with decisions to prescribe or administer PRN antipsychotic medications. The purpose of this study was to explore factors associated with the decision-making of nurses and doctors in prescribing and administering as required antipsychotic medications to hospitalised older people with delirium.

METHODS

Design

A qualitative descriptive approach was used. This design was chosen in order to gather rich descriptions and perspectives from participants.³⁵ Obtaining rich descriptions from the participants provides opportunity to gain in-depth understanding of decision-making processes.

Setting and participants

The setting for this research was four acute care hospitals at two large urban healthcare organisations in Melbourne,

Australia. Both of these healthcare organisations have multiple acute hospital sites. A recent point prevalence study at one of these health services in Melbourne found the incidence of delirium to be 16.2% in inpatient wards indicating that delirium is common.⁵ Health professionals in both organisations are required to adhere to the recommendations of delirium care outlined in the Delirium Clinical Care Standard developed by the Australian Commission on Safety and Quality in Health Care in 2016.²⁷ Early screening to identify patients with delirium is recommended in these guidelines.

Inclusion criteria

Nurses and doctors were eligible to participate if they met the following eligibility criteria:

- ▶ Registered nurse/enrolled nurse or medical doctor
- ▶ Employed at the organisation (full-time or part-time)
- ▶ Recent (within the last 12 months) experience working in acute inpatient settings
- ▶ Recent (within the last 12 months) experience in providing direct care for patients with diagnosed delirium

Registered nurses who participated are not able to prescribe medications.

Exclusion criteria

- ▶ Enrolled nurses who were not medication endorsed (enrolled nurses work under the direction, delegation and supervision of registered nurses and are not all trained in medication administration).

Sampling and recruitment

Following ethical approval, using a convenience purposive sampling technique nurses and doctors at each healthcare organisation were invited to participate via email or through communication with nurse unit managers or head of general medicine department. Participants were also asked to recommend other potential participants suitable for the research. Poster advertisements were placed in various locations around the healthcare organisation. Following initial contact with potential participants, the chief investigator (CI) determined suitability to participate by ensuring they met the eligibility criteria. Recruitment of participants ceased when data saturation was reached and no new themes emerged during data analysis.

Ethical considerations

Participants were required to read and sign a participant information and consent form prior to participation. Participants also gave additional verbal consent prior to the interview/focus group commencing. All participants were ensured that they would remain anonymous in the reporting of the results and confidentiality would be maintained by securely storing signed consent forms in a locked cabinet and office at the university. Names and other identifying information were removed from the transcripts. Participants were reminded at the beginning of the interview that these discussions were not aimed

Box 1 Interview question guide

1. Can you recall a time when you have cared for an older patient (>65 years old) with delirium?
2. Can you recall the factors that made you decide to administer (or prescribe) the PRN (*pro re nata*) antipsychotic?
3. What do you think are the most relevant factors in the decision to administer/prescribe a PRN antipsychotic?
4. What alternatives to medications, if any, do you consider when managing the behaviour of an older patient with delirium?
5. What information do you think is important when making decisions about prescribing/administering antipsychotics to older patients?
6. What interventions have you implemented for an older patient with delirium which you felt were beneficial?
7. Did you feel prepared with adequate knowledge/understanding when making a decision regarding prescribing/administering PRN antipsychotic medications?

to be a scrutiny of their clinical practice and that this research would help to highlight the process by which they make their decisions.

Data collection and analysis

Semi-structured in-person focus group and individual interviews were conducted with participants by the CI (registered nurse, PhD). The CI has experience in acute clinical care and has previously conducted research on delirium. Participants were also asked to complete a brief and anonymous demographic questionnaire prior to participation. An interview guide (box 1) was created, which focused on questions about experiences in giving or prescribing antipsychotic medications. Focus groups with doctors focused on the prescription of antipsychotics and focus groups with nurses focused on the administration of antipsychotics. The interview guide was developed by members of the research team who are experienced registered nurses, a pharmacist and geriatrician. Participants were introduced to the interviewer (had no prior relationship with participants), provided with a brief overview of the research and given an opportunity to ask questions. Participants were also reminded that this was an opportunity to share their experiences without judgement of decisions previously made. Interviews and focus groups were conducted at convenient locations, which was usually a meeting room where they worked. Focus groups were discipline-specific (due to limited availability of participants to undertake focus groups with both doctors and nurses present) with approximately six to eight participants per focus group and took approximately 25–40 min. Only the participants and researcher were present during focus groups and interviews. Four participants chose to undertake an individual interview because they were unable to attend a focus group. Allocation to focus groups was based on availability of those who were present and consented to participate in the research. Focus group interview participants were colleagues and were known to each other. Both senior and junior staff were present in each focus group and all participants were encouraged to

share their experiences. If anyone felt uncomfortable to share in front of other staff they were offered the opportunity to participate in an individual interview instead of a focus group interview. No participants elected to have an individual interview instead of participation in a focus group interview because of discomfort sharing in front of other staff. Focus groups and interviews were conducted at the organisation when convenient for the participants. This meant that the CI went back and forth between the organisations, for example, in 1 week, she conducted a focus group at one organisation and the next, she conducted an interview at the other organisation. All focus groups and individual interviews were audio-recorded, saved as digital files on a secure network computer at the university and transcribed verbatim for analysis. Field notes were also recorded during and after the interviews and stored in a secure locked cabinet.

Demographic data were entered into a Microsoft Excel spreadsheet. NVivo software (V.12) was used to aid in organising and analysing qualitative data. Data were analysed independently by the CI and another member of the research team (HR). The two researchers met regularly to ensure inter-rater reliability and to discuss development of codes and themes that were derived from the data. Data were analysed using thematic analysis as described by Braun and Clarke (2006). Inductive thematic analysis was used to allow the data to determine the themes identified. Data collection occurred concurrently with analysis and recruitment continued until no new topics were raised and data saturation was reached. Data from nurses and doctors were not analysed separately. In the analysis, members of the research team were aware of the role of each individual and codes were assigned to quotes that represented themes. As such, themes arose

from experiences of both nurses and doctors which highlights similar experiences of these health professionals. To ensure credibility, participants were sent a summary of the findings and were asked to comment on appropriateness of resulting themes and subthemes and to seek clarification of any findings that did not resonate for them. No participants responded with concerns regarding the results.

Patient and public involvement

There was no patient involvement in the development of this research. This research was focused on the decision-making of nurses and doctors and it was determined that patient involvement was not required.

RESULTS

Demographic information

Six focus groups (four with nurses and two with doctors) and four individual interviews were conducted between May 2019 and March 2020. A total of 25 nurses and 17 doctors participated (table 1). Nine doctors and 18 nurses were from organisation 1 (located at two hospital sites) and 8 doctors and 7 nurses were from organisation 2 (located at two hospital sites).

Factors influencing decisions to prescribe and administer antipsychotic medications

The factors associated with decisions of nurses and doctors to give antipsychotic medications were grouped into five major themes: (1) *safety*, (2) *a last resort*, (3) *nursing workload (can't do my job)*, (4) *dilemma to medicate* and (5) *anticipating worsening behaviours*. Quotes to support major themes and sub-themes are displayed in table 2.

Table 1 Participant demographic characteristics

	Doctors (N=17)	Nurses (N=25)
Age (mean and range)	Mean: 33 years Range: 23–53 years	Mean: 37 years Range: 22–55 years
Years in clinical practice	Mean: 9 years Range: 4 months–30 years	Mean: 9 years Range: 4 months–31 years
Qualifications	<ul style="list-style-type: none"> ▶ Bachelor of Medicine, Bachelor of Surgery: 17 ▶ Fellow of the Royal Australasian College of Physicians: 4 ▶ Bachelor of Nursing*: 1 	<ul style="list-style-type: none"> ▶ Bachelor of Nursing (registered nurse (RN)): 22 ▶ Diploma of Nursing (enrolled nurse (EN)†) with medication endorsement: 2 ▶ Hospital training (EN) with medication endorsement: 1 ▶ Master of Nursing practice: 1
Role	Intern: 3 Hospital medical officer: 1 Registrar‡: 9 Consultant/geriatrician: 3 Head of general medicine: 1	RN: 20 Associate nurse unit manager: 2 EN: 3

*Initially completed a Bachelor of Nursing qualification then completed a Bachelor of Medicine/Bachelor of Surgery (MBBS) qualification.

†EN—Diploma of Nursing is an 18-month nursing course. ENs work under supervision of a registered nurse in a variety of healthcare settings. ENs may administer medication if they have completed the required education and are competent to do so.

‡Registrar is a term used in the Australian context to describe qualified doctors who are formally enrolled and accredited into a specialty training programme and are employed by the healthcare organisation.

Table 2 Quotes from participants

Theme	Subtheme	Quote	
Safety	Safety of the patient	1. 'She was trying to strangle herself with the nasal prongs and tubes' (Registrar Participant No.5)	
		2. 'I mean the safety of the patient's paramount. That they don't do something to themselves in a moment of rage or being upset'. (RN Participant No.11)	
		3. 'It just happened in blip—like an instant. She was sedated, security was with her, coordinator was with her. She seemed to have settled, and then for a split-second the nurse had left the room and she had gone out the window.' (ANUM Participant No.29)	
		4. 'You want them to be safe, you don't want them to be falling. They're often trying to get up and go places or look at things or in their drawers or whatever.' (RN Participant No.12)	
	Safety of others	5. '...a danger to themselves or to others if they're intrusive in other people's rooms... If they're frightening to other patient's, yes—it's usually around safety' (RN Participant No.13)	
		Safety of nursing staff	6. 'Even though they are [age] 90s or 80s, but they are still strong men.... actually, even though you want to stop them to do something, and they can punch you as well.' (RN Participant No.20)
	7. 'I don't want my nursing staff to be injured. I don't want them to be strangled by [sic]—we've had that, we've each had staff on our wards who have been hurt and that's incredibly distressing as well.' (Registrar Participant No.2)		
	'A last resort, medication'		8. 'We try the family first, we try reassurance, CPOs, [Constant Patient Observer] let's get a cup of tea—all of that first before we even get to the medications...' (RN Participant No.9)
			9. '...we'll call the family for them. Sometimes that makes it worse, sometimes it upsets the family.' (RN Participant No.17)
		10. 'When someone gets agitated, I have never once thought, oh, I'm going to look at the sunflower (sunflower diagram at patient's bedside).' (RN Participant No.25)	
11. 'You move them to a single room, which definitely decreases the stimulation and activity around, but then as soon as a bed is needed in a single room... like you say no, I don't believe this is the right thing to do, it kind of doesn't matter. It's done anyway.' (RN Participant No.29)			
12. 'Comes down to costs and logistics, like single rooms are for respiratory or contact precaution patients, unless you are really lucky you are not going to get a single room for the delirious patient.' (Registrar Participant No.38)			
13. 'a CPO [Constant Patient Observer] for 12–24 hours costs more than 10 mg of droperidol.' (Registrar Participant No.38)			
'Point of no return'	14. 'You cannot reason at all. They [patient] won't have a bar of anyone trying to talk to them. You can't redirect them.' (RN Participant No.31)		
	15. 'Because the previous staff have already done all of those strategies and it's gotten to this point of no return.' (RN Participant No.30)		
	16. "...there is definitely a time at night when they are too tired, too confused, they have lost it and they needs (sic) something to take the edge off. (Consultant Geriatrician Participant No.14)		
Nursing workload ('Can't do my job')	17. 'If the patient doesn't settle, we have to tell the doctor to write something, because otherwise, it's hard for us to look after other three patient (sic), we can't do one-on-one' (RN Participant No.22)		
	18. 'There is so much pressure to just sedate them so they just calm down and so the nurse can do their job.' (Intern Participant No.3)		
	19. 'If you have an unwell patient... plus someone that has delirium and having those sort of behaviours, so trying to spend your time keeping them safe and occupied vs your patient that's unwell...that's maybe where the medication comes into play and they are given something to try and just settle.' (RN Participant No.11).		
	20. 'Very rarely we get approved for a constant obs [CPO] to help.' (RN Participant No.33)		
	21. 'the CPO wasn't doing—wasn't controlling the situation enough, so we gave her [the patient] risperidone' (RN Participant No.24)		

Continued

Table 2 Continued

Theme	Subtheme	Quote
Dilemma to medicate		<p>22. 'Every grain in your body wants to avoid antipsychotics. Sometimes I guess we begrudgingly do prescribe it.' (Registrar Participant No.36)</p> <p>23. 'I've found that there's so much pressure to just prescribe medications to settle patients, and it just comes from all the nurse and the ANUM [Associate Nurse Unit Manager] and the ANUM is like, we can't get a sitter until you give her something.' (Intern Participant No.3).</p> <p>24. 'I think one pressure junior doctors feel is that they often get called, especially after hours, when the nurses are absolutely at the end of their tether...by the time the nurses have called often it can start with a kind of, you've got to give them something, or it's a code grey.' (Consultant Geriatrician Participant No.6)</p> <p>25. 'As a junior doctor, if I thought someone was more senior it was almost like I thought it was disrespectful to say no to them.' (Registrar Participant No.38)</p> <p>26. 'Can you please chart something, I feel that pressure to chart something' The patients is being aggressive so they [the nurses] are like 'we need it now.' (HMO Participant No.35)</p> <p>27. 'I don't think the nurses are being pressure (sic) at all.' (RN Participant No.22)</p> <p>28. 'If they say no, [to giving medication] if they have a reason, then I push them to give the medication.' (RN Participant No.21)</p> <p>29. 'That would drive me mad if a doctor said no" [to prescribing an antipsychotic] .(RN Participant No.25)</p> <p>30. 'I think it's really stressful when you're trying to get someone charted something and they don't want to listen to what your concerns are about the patient until something happens, like someone gets hit or the patient falls, or something like that.' (RN Participant No.25)</p> <p>31. 'We're the ones at the bedside and we're the ones that are going to get hit, or screamed at, or spat at.' (RN Participant No.25)</p> <p>32. 'I just don't think it was really their [doctors] place to have an input in whether we call a code or not. It's like they're not on the frontline, kind of thing, in that situation.' (RN Participant No.23)</p> <p>33. 'We rely on the doctor's knowledge...We just follow the doctors lead.' (RN Participant No.22)</p> <p>34. 'You want to do something to fix it. As the doctor you want to fix it, not just for the patient but for the nursing staff and for everyone else working with them and that pressure is there.' (Registrar Participant No.1)</p>
Anticipating worsening behaviours		<p>35. 'Junior doctors prescribe them [antipsychotics] during the night, they don't know, so we want them not to be called again...we write a stat order for the night, which is a safer medication which would be an appropriate dose.' (Registrar Participant No.38)</p> <p>36. 'To my mind, so much better to have a low dose of risperidone than...—you also don't know what they [junior doctors] are going to prescribe, I mean if you're not careful they've given them 10 milligrams of olanzapine, they're absolutely unconscious when you come round the next day.' (Consultant Geriatrician Participant No.15)</p> <p>37. 'If they've had behavioural issues you do hope that there's a PRN order there, so that they can be used any time day or night.' (RN Participant No.30)</p> <p>38. 'We often think about the next shift coming on as well, like you want to plan for them, especially a lot of this happens in the evening. We want to plan for the night shift, because there's very reduced staff and help.' (RN Participant No.28)</p>

Safety

Overwhelmingly, nurses and doctors indicated that the most influential factor for deciding to administer an antipsychotic medication to an agitated person with delirium was 'safety'. Three main areas of concern were safety of the patient, safety of other people (other patients and staff) and safety of nurses.

Safety of the patient

A major concern was safety of the person with delirium. Participants often reported that patients with delirium were at risk of harm to themselves (Quote 1). Nurses

described extreme behaviour from patients with delirium which would trigger the decision to administer an antipsychotic. In these instances, nurses wanted to ensure the patient was safe (Quote 2). A nurse recalled an incident where the person with delirium had jumped out a window. The nurse stated that prior to the incident their behaviour had escalated to a code grey (emergency call for assistance) and the patient received an antipsychotic medication (Quote 3). For nurses, it was extremely important to prevent a wandering patient from falling (Quote 4).

Safety of others

Nurses described their concern for other patients' safety and considered the use of antipsychotics if the person with delirium was thought to be intrusive and frightening to other patients (Quote 5).

Safety of nurses

Nurses and doctors described people with delirium experiencing severe agitation and aggression as a threat to nurses. Nurses indicated that threatening and 'scary' behaviour or perceived risk of physical harm were triggers for administering antipsychotic medication (Quote 6). Doctors were concerned about nurses if patients with delirium became aggressive. Doctors reported they were not concerned for their own safety but acknowledged that nurses, as primary bedside caregivers, were more likely to be injured (Quote 7).

A last resort

Nurses' decisions to administer antipsychotic medication were triggered by perceptions of having no other options. Nurses stated they would only use medications as 'a last resort' after they had tried several other non-pharmacological interventions (Quote 8). Such interventions included: distraction (talking to the patient about their interests, offering a cup of tea/coffee, colouring books and magazines), calling family members to talk with the patient and taking the patient for a walk or to the toilet. Family involvement was described by nurses as a positive intervention for delirium behaviour management. However, nurses also highlighted challenges with relying on family to help manage the person's behaviour. Challenges included time of day (often situations arose during the night), family member being an older person, unable to drive or unavailable. Phone calls to family members were described as not always effective. Some family members wanted a break from managing the behaviours or had been called numerous times by staff and did not want to be called anymore. Nurses explained that having family present could also escalate the situation (Quote 9).

Organisational initiatives to support person-centred non-pharmacological interventions were reported by nurses as not always helpful when managing behaviours of a person with delirium. Nurses spoke about a 'sunflower' diagram (placed next to the patient's bedside) that was initiated in the health service to record details of the person's life, for example, their preferred name, football team, pets and grandchildren. Nurses did not find these non-pharmacological approaches useful when making decisions about how to manage agitated behaviours (Quote 10).

Nurses also reported they were aware of non-pharmacological interventions that would be appropriate, but although they had received education about these initiatives, there was a lack of support from the organisation to implement them because of other priorities (Quote 11). The doctors also stated that some

non-pharmacological strategies were not always practical due to logistical and cost implications (Quotes 12 and 13).

Point of no return

A subtheme of 'a last resort' described how the nurses had no other options when the patient's behaviour had reached a 'point of no return'. Nurses explained it was difficult to engage and calm the patient once the patient had reached this point (Quote 14).

In this regard, the 'point of no return' was a trigger for seeking antipsychotic medications for the person with delirium. Nurses reported contacting doctors for an antipsychotic prescription when other non-pharmacological strategies had been exhausted and the person was at that *point of no return*, or to avoid reaching the *point of no return* (Quote 15). Similarly, doctors indicated that the person's behaviour along with the time of day may warrant use of antipsychotic medication (Quote 16).

Nursing workload (can't do my job)

Nurses were concerned about meeting their duty of care for all patients. Nurses reported that the person with delirium required significant attention, which reduced the time available for other patients. Consequently, to meet the responsibilities of their role, nurses reported that they needed the person with delirium to be settled so they could do their other work (Quote 17). Doctors also acknowledged the increased pressures on nursing workload when caring for people with delirium and reported that nurses requested antipsychotics so nurses could do their job (Quote 18). Nurses reported that the needs of the person with delirium may not be recognised and thus, not prioritised (Quote 19).

Provision of support from the organisation influenced decisions to use antipsychotics. Nurses and doctors reported requesting additional staff for patients (such as a constant patient observer (CPO)) but this request was rarely approved, which meant nurses struggled to care for all their patients (Quote 20). When nurses did receive assistance with a CPO, they still faced difficulties if the CPO was inexperienced or unsuitable to manage the person's behaviour (Quote 21).

Dilemma to medicate

The doctors described experiencing a complex dilemma about prescribing medications for people with delirium. The dilemma was multifaceted and reflected their responsibilities as the prescriber. The decision involved a complex interplay of responsibilities to do the 'right thing' and justifying the decision. The dilemma involved: *feeling pressure to prescribe, wanting to be liked by nurses, knowing the pressures on nurses, protecting the safety of nurses versus lack of evidence for medications, guidelines that are not always clear, wanting to try non-pharmacological strategies and being able to justify the decision as the 'right' decision*. One factor that influenced junior doctors to prescribe antipsychotics was pressure from nurses (Quote 22). Doctors

described feeling this pressure multiple times, including at transfer of patients from the emergency department to the ward, to facilitate diagnostic tests (such as CT of the brain), overnight (when there were more demands on nurses) and during code grey calls (Quotes 23 and 24). A code grey is initiated if health professionals perceive a threat from a combative person with no obvious weapon.

Doctors also reported that at times of a code grey, the pressure came from other staff and ‘all eyes were on you’ to chart what had been suggested. This was also the case when waiting for antipsychotic medications to take effect during a code grey. Doctors reported pressure to prescribe an additional dose if the patient continued to be agitated. Doctors believed that pressure from nurses was more significant when they were junior doctors. Both junior and senior doctors highlighted this issue (Quotes 25 and 26).

When this pressure was discussed with nurse participants, they denied having an influence on the doctors’ decision-making or pressuring doctors to prescribe antipsychotic medications (Quote 27). However, responses from nurses indicated that they did put some pressure on junior doctors, even if they were unaware of this situation (Quotes 28 and 29). Nurses’ experience of stress in managing aggressive behaviours was perceived to drive their need to pressure doctors into prescribing antipsychotics (Quote 30).

Nurses argued that as primary caregivers who had to manage behaviour of hyperactive patients with delirium, they should have ultimate decision-making. Doctors acknowledged that nurses were primary caregivers, and this was a factor that contributed to the doctor’s decision to prescribe antipsychotics (Quotes 31 and 32). However, nurses described relying on the decisions and knowledge of doctors because they did not have adequate understanding of use and side effects of antipsychotic medications (Quote 33). The decision to prescribe antipsychotic medication was also influenced by the doctors’ understanding of the nurses’ perspective and wanting to help ‘fix’ the situation (Quote 34).

Anticipating worsening behaviours

Anticipation of worsening behaviours from the person with delirium was also associated with the decision to use antipsychotic medications. To avoid potential code greys or the person receiving high doses of intramuscular antipsychotics, doctors reported prescribing a smaller dose of an oral antipsychotic before a possible escalation of behaviours. Doctors believed that it was highly likely that the patient would experience the behaviours again and more senior doctors reported prescribing something ‘just in case’ because they were not sure that junior doctors would have the appropriate knowledge about the patient to make the best decision about which medication to prescribe (Quotes 35 and 36). Nurses also described administering antipsychotic medications ‘just in case’, in anticipation of the night shift when there were often less staff (Quotes 37 and 38).

Decision-making process in caring for people with delirium

A flowchart illustrating the decision-making process (figure 1) emerged during data analysis. The pathway illustrates how staff navigated decisions for prescribing and administering antipsychotic medications. This process was described by both nurses and doctors. Online supplemental file 1 provides a description of the flowchart for the decision-making process.

DISCUSSION

Nurses and doctors described the experience of making complex decisions regarding prescription and administration of antipsychotics quickly and often in an environment where their own safety was threatened. Nurses described relying on doctors’ knowledge when making decisions about use of antipsychotics; however, despite not being aware of it, nurses had a major influence over decisions made by doctors. Consistent with research on behaviours associated with delirium, nurses and doctors described managing aggression and agitation in people with delirium and use of antipsychotics was determined as essential in maintaining safety.³⁶

In this research, nurses and doctors described the use of antipsychotics as a means of control of patients’ behaviour. Administration of antipsychotic medication for the purposes of controlling behaviour without a therapeutic purpose is *chemical restraint*, a form of restrictive practice. The Australian Royal Commission into Aged Care Quality and Safety³⁷ described restrictive practice as ‘activities or interventions, either physical or pharmacological that have the effect of restricting a person’s free movement or ability to make decisions’. Medications that often cause sedation such as antipsychotics have a restrictive effect. Antipsychotic medications in this research were always described with the intention of exerting control over a patient’s movement or behaviour. These findings parallel those from research that examined clinical decision-making of nurses regarding use of physical restraints in psychiatric and other acute settings.³⁶ Interestingly, in this research none of the nurses or doctors spoke about antipsychotics as a form of chemical restraint; yet, they did mention physical interventions such as shackles as ‘restraints’.

Safety was identified as key to decision-making regarding use of antipsychotics and was expressed in terms of when behaviours of patients with delirium escalated beyond the capacity of nurses and doctors to maintain a ‘safe’ environment. This finding is similar to findings of a systematic review that investigated nurses’ decision-making in cases of using physical restraint which suggests that nurses’ decision-making regarding the use of physical restraint is also centred on safety.³⁶ The safety of everyone is hoping to be achieved when the agitated (often harmful) behaviour is subdued by use of restraints. In the current study, safety most often related to nurses being physically harmed by an aggressive/agitated patient, however

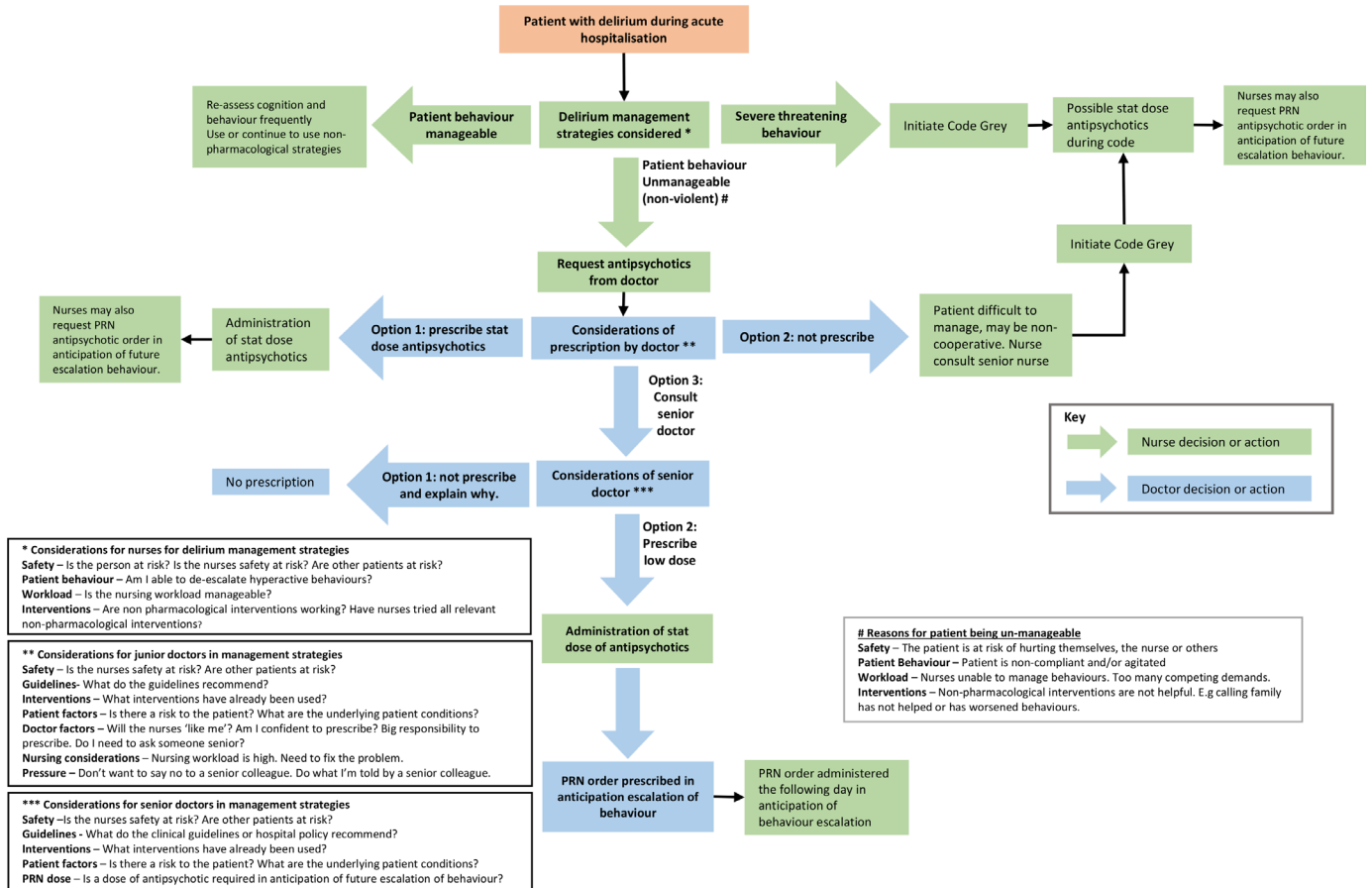


Figure 1 Flow chart indicating how participants navigated decision-making for use of antipsychotics for older people with delirium. PRN (*pro re nata*).

little consideration was given by nurses to the lack of safety caused by adverse effects of antipsychotic medications. This finding is also aligned with research investigating the prescribing behaviours for nursing home residents with dementia. Walsh *et al*³⁸ identified that the need to protect staff, family members and residents from potentially dangerous behavioural symptoms strongly influenced antipsychotic prescribing behaviours. These findings suggest that safety is a key consideration when health professionals consider the use of restraints (both chemical and physical).

The safety of the patient in terms of ‘risk’ was a key consideration in decision-making to use antipsychotic medications. Nurses reported that antipsychotic medications were used to mitigate the risk of falling and the patient sustaining injuries from falling. In making these decisions, the immediate safety of the person was considered by clinicians as a priority. The alternative to not medicating was risking harm to the patient due to falling. However, nurses and doctors rarely described the risks caused to the patient by administering antipsychotics. In older people antipsychotic medication can cause significant harm and increase the risk of falling.³⁴ At the time of the decision, the potential for physical harm caused by agitation outweighed the possible risk of harm caused by the medication.

This finding supports previous research conducted by Goethals³⁶ who stated that nurses who were unwilling to take risks with patients' mobility were more likely to use physical restraints. Nurses chose between their personal aversions to risk over the autonomy of the patient.³⁶ Nurses valued safety first by choosing to physically restrain rather than risk the patient falling.³⁶ Lee *et al*³⁹ also reported that nurses would put their own welfare ahead of that of the person by choosing to use physical restraints. Nurses decided between the best interest of the patient in the immediate situation over the long-term well-being of the patient.³⁹ Doctors were aware of these risks and when prescribing the medications, they reported that they would always ‘use a low dose’ which is strongly advised in the Delirium Clinical Care Standard.²⁷

Factors such as workload also influenced nurses’ decision-making. Nurses and doctors reported that decisions to administer antipsychotics were based on workload, due to patients with delirium needing constant supervision and nurses not being able to ‘do their job’. The impact on nurses was clearly described by participants in this research. Doctors also acknowledged that increased workload experienced by nurses influenced how they made decisions in prescribing antipsychotics. The stressful nature of nursing work and the need to

balance workload among patients has been described previously.^{9,10} Similar to the findings of this study, previous research found that nurses perceived restraint use as justified and necessary to meet their professional responsibilities.^{36–39} To ensure nurses are well supported to provide evidence-based, safe and quality care, it is important to consider the impact of stress on nurses caring for patients with hyperactive delirium. The Delirium Clinical Care Standard²⁷ makes recommendations for health services to ensure that systems are in place to support use of non-pharmacological strategies as first-line therapy. These supports include the use of one-on-one nurses, trained support people and involvement of family members. The research findings indicate that this is not always the case for these organisations with both nurses and doctors stating that requests for constant patient observers or one-on-one nurses would often be rejected. If requests were granted, the individual provided for added support was not always specifically trained in delirium. Nurses also noted that family members were not always available to help during times of acute agitation. In these instances it is clear that nurses have not been provided with appropriate support from health services and that workload stress contributes to the need to request antipsychotic medications.

Nurses' reluctance to use physical restraints as the first option for patients with delirium in critical care units has been previously reported.⁴⁰ Similarly, in this study, nurses reported the use of antipsychotics was only considered as 'a last resort'. Quality statement 6 in the Delirium Clinical Care standard²⁷ states that 'antipsychotic medicine is only considered if a patient with delirium is distressed and the cause of their distress cannot be addressed'. The results of this research indicated that nurses and doctors did follow this recommendation. Non-pharmacological strategies were reportedly always tried before antipsychotics. However, non-pharmacological strategies often require the constant presence of another person. This presence impacts on workload and it is often not feasible for a nurse to be present continuously for a relatively prolonged period. On the other hand, with a medication that may 'instantly' produce sedation or reduce agitation—nurses are not required to be present. Antipsychotics were sought when patient behaviour escalated to a point where non-pharmacological strategies were seen to be no longer effective and nurses could no longer maintain continuous observation. Decisions to use non-pharmacological strategies were often outweighed by the need to have an immediate solution. Evidence suggests that non-pharmacological interventions are most effective in treating delirium when used often by nurses.⁴¹ However, at a time when escalation of behaviour occurs, non-pharmacological strategies were regarded as typically not effective by nurses.

According to the Australian Charter of Healthcare Rights,⁴² all patients have the right to be involved in decisions about their care. The International Charter for Human Values in Healthcare⁴³ also states that health

professionals must have respect for patients' autonomy. It can be argued that a person with delirium may have a fluctuating capacity for autonomous decision-making. As such, Healthcare Law in Australia states that 'healthcare can be carried out without consent for adults without capacity, where a doctor considers healthcare is needed to: (1) Urgently save a person's life, (2) Prevent serious damage or meet imminent risk to the person's health or (3) Prevent the person from suffering significant pain or distress'.⁴⁴ Additionally, the Delirium Clinical Care Standard²⁷ states that if antipsychotic medication is being considered for a patient with delirium that the choice of antipsychotic medicine, the risks and benefits, dosage and duration should be discussed with the patient and carer. In this research there was no discussion of consent provided to either the family or the patient when they received doses of antipsychotics. Nurses' and doctors' decisions were purportedly based on preventing the patient from being seriously hurt which may necessitate the need to gain consent. However, consent should be sought from the patient (if they are cognitively able) or the patient's family (eg, spouse, adult child or adult sibling if no formal medical decision appointment has been made and they are willing and able to make decisions⁴⁵) on the patient's behalf before additional doses are administered, especially for medications given in anticipation of worsening behaviours.⁴⁶ The initiation of antipsychotics in anticipation of worsening behaviours is concerning. According to Australian *quality of care principles*,⁴⁶ chemical restraint should only be used as a last resort and only when the person is requiring immediate restraint.

Findings from this research indicate that nurses are primary decision-makers in most situations involving administration of antipsychotics. Nurses have considerable influence over the decisions of doctors even if nurses are unaware of their influence. This influence is powerful and often underestimated. In this research nurses discussed ways in which they could influence doctors' decisions. Ultimately when nurses decided an antipsychotic medication was needed to sedate a patient, nurses were able to influence decisions to get antipsychotics prescribed. This finding has not been previously reported in the literature regarding delirium management decision-making. However, research that investigated the nurse's role in decision-making for discharge found that when a nurse decided on an outcome they desired; they would use a variety of approaches to achieve this goal (such as changing communication techniques).⁴⁷ Nurses were reported to influence the decisions of doctors to achieve the desired outcome.⁴⁷ On the surface, doctors make decisions about the prescription of antipsychotics for people with delirium but this can be influenced by nurses.

Strength and limitations

To the authors' knowledge this novel research is the first to provide a detailed analysis of decision-making for use of

antipsychotics in hospitalised older people with delirium. This research has provided a comprehensive account of factors associated with decisions to prescribe and administer antipsychotic medications by examining the perspectives of both nurses and doctors. This research has added to the wider body of knowledge about why antipsychotic medications are used despite recommendations to avoid in people with delirium.

While participants provided rich descriptions of their personal experiences and perceptions, they may not be a true reflection of actual clinical practice since this was not observed and relied on participant recall. Another limitation of the research is only two organisations within Melbourne were included and this may affect generalisability of the findings. Participant's responses may have also been influenced by the particular culture of that organisation however recruiting participants from two different organisations across four different locations was used as a strategy to mitigate this influence. Nurses and doctors were also not able to be interviewed in the same focus group due to time constraints and organising time where both were available to participate. Participants were specifically asked about their experiences of people with delirium, but due to the recall nature of the research we were not able to confirm an actual delirium diagnosis. The self-selecting nature of participation may have also limited the findings to participants with a particular experience with delirium. However, the themes reported were confirmed by multiple participants and most participants (both nurses and doctors) described similar experiences.

Implications of the findings

Clinical implications

This research has highlighted that nurses can influence the decision-making of doctors. As such, nurses and junior doctors need better education and training regarding antipsychotic use in delirium. Nurses and doctors may also need additional training in decision-making skills at an undergraduate level as well as inter-professional education that gives nursing and medical students the opportunity to learn communication skills between disciplines. Team management between nurses, junior and senior doctors, which includes a clear plan for management of patients with agitation associated with delirium, could help to guide the decision-making of both nurses and doctors. This is especially so for junior doctors who rely on the experience of senior nurses and can feel significantly pressured to prescribe medications when they are not confident to do so. Senior doctors may also experience pressure when nurses seek their support during times of distress. Providing more opportunities for family involvement is a consideration that may reduce the use of antipsychotics for older people with delirium.

Organisational support of the Delirium Clinical Care Standards including the implementation of

recommendations for one-on-one trained nurses is also extremely important to implement to reduce nurses need to use antipsychotics because they have increased workloads.

Research implications

Research is needed to examine possible de-escalation techniques (eg, non-pharmacological behaviour distraction/redirection such as the T-A-DA method or simulated family presence) that nurses could implement during times of behaviour escalation as current non-pharmacological interventions are not effective for nurses in times of serious patient agitation. Further research is also required to validate the themes identified in this research by using the Theory of Planned Behaviour to identify factors that could be subject to an intervention. Observational research with record audit would also help to give accurate information about medication doses prescribed and administered as well as outcomes for patients, nurses and doctors.

CONCLUSION

The decision to prescribe and administer antipsychotics for patients with hyperactive symptoms of delirium is complex. Nurses and doctors acknowledge that managing patients with delirium can be challenging and stressful. The decision to administer antipsychotic medication is primarily influenced by threats to personal safety of the patient, other patients and nurses. Doctors often face a dilemma about when to medicate, knowing that medication will sedate a person and may cause harm, but prescribing it due to concerns of nurses about safety and an absence of other alternatives. Nurses should acknowledge the significant role they play in decision-making when caring for people with delirium.

Twitter Emily J Tomlinson @EmJane88, Helen Rawson @DrHelenRawson and Elizabeth Manias @emancias1

Contributors ET designed and conducted the study, including participant recruitment, data collection and data analysis and is the guarantor of the paper. HR contributed to the implementation of the research and conducted data analysis and interpretation. All other authors (NMP, EM, PD, AMH) also contributed to overall design, ethics application and contributed critique on the overall findings. ET drafted the manuscript and all authors provided critical revisions of the manuscript. ET and HR designed the flowchart and all authors provided critical revisions. All authors approved the final manuscript.

Funding This work was supported by a Career Continuity for Researchers who are Primary Carers research grant for the chief investigator from Deakin University.

Competing interests None declared.

Patient consent for publication Not required.

Ethics approval Human Research Ethics approvals and organisational approvals were obtained from the University (2019–040) and the healthcare organisations (RES-18-0000-744L and S19/008/46959).

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement No data are available. Data for this study is not available for sharing.

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those

of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iDs

Emily J Tomlinson <http://orcid.org/0000-0002-8361-4774>

Helen Rawson <http://orcid.org/0000-0001-5363-729X>

Elizabeth Manias <http://orcid.org/0000-0002-3747-0087>

REFERENCES

- Inouye SK, Westendorp RGJ, Saczynski JS. Delirium in elderly people. *The Lancet* 2014;383:911–22.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th ed. Washington DC: American Psychiatric Publishing, 2013.
- Siddiqi N, House AO, Holmes JD. Occurrence and outcome of delirium in medical in-patients: a systematic literature review. *Age Ageing* 2006;35:350–64.
- Ryan DJ, O'Regan NA, Caoimh Ronán Ó, et al. Delirium in an adult acute hospital population: predictors, prevalence and detection. *BMJ Open* 2013;3:e001772.
- Casey P, Cross W, Mart MW-S, et al. Hospital discharge data under-reports delirium occurrence: results from a point prevalence survey of delirium in a major Australian health service. *Intern Med J* 2019;49:338–44.
- Roberts B, Rickard CM, Rajbhandari D, et al. Multicentre study of delirium in ICU patients using a simple screening tool. *Aust Crit Care* 2005;18:6–16.
- Sharma A, Malhotra S, Grover S, et al. Incidence, prevalence, risk factor and outcome of delirium in intensive care unit: a study from India. *Gen Hosp Psychiatry* 2012;34:639–46.
- Inouye SK. Delirium in older persons. *N Engl J Med* 2006;354:1157–65.
- Lou M-F, Dai Y-T. Nurses' experience of caring for delirious patients. *J Nurs Res* 2002;10:279–90.
- Agar M, Draper B, Phillips PA, et al. Making decisions about delirium: a qualitative comparison of decision making between nurses working in palliative care, aged care, aged care psychiatry, and oncology. *Palliat Med* 2012;26:887–96.
- Pollard C, Fitzgerald M, Ford K. Delirium: the lived experience of older people who are delirious post-orthopaedic surgery. *Int J Ment Health Nurs* 2015;24:213–21.
- Fong TG, Tulebaev SR, Inouye SK. Delirium in elderly adults: diagnosis, prevention and treatment. *Nat Rev Neurol* 2009;5:210–20.
- Inouye SK, Bogardus ST, Charpentier PA, et al. A multicomponent intervention to prevent delirium in hospitalized older patients. *N Engl J Med* 1999;340:669–76.
- Martinez F, Tobar C, Hill N. Preventing delirium: should non-pharmacological, multicomponent interventions be used? A systematic review and meta-analysis of the literature. *Age Ageing* 2015;44:196–204.
- Milisen K, Foreman MD, Abraham IL, et al. A nurse-led interdisciplinary intervention program for delirium in elderly hip-fracture patients. *J Am Geriatr Soc* 2001;49:523–32.
- Kang J, Lee M, Ko H, et al. Effect of nonpharmacological interventions for the prevention of delirium in the intensive care unit: a systematic review and meta-analysis. *J Crit Care* 2018;48:372–84.
- Vidán MT, Sánchez E, Alonso M, et al. An intervention integrated into daily clinical practice reduces the incidence of delirium during hospitalization in elderly patients. *J Am Geriatr Soc* 2009;57:2029–36.
- Flaherty JH, Little MO. Matching the environment to patients with delirium: lessons learned from the delirium room, a restraint-free environment for older hospitalized adults with delirium. *J Am Geriatr Soc* 2011;59 Suppl 2:S295–300.
- Waszynski CM, Milner KA, Staff I, et al. Using simulated family presence to decrease agitation in older hospitalized delirious patients: a randomized controlled trial. *Int J Nurs Stud* 2018;77:154–61.
- Tropea J, Slee J, Holmes ACN, et al. Use of antipsychotic medications for the management of delirium: an audit of current practice in the acute care setting. *Int Psychogeriatr* 2009;21:172–9.
- Neufeld KJ, Yue J, Robinson TN, et al. Antipsychotic medication for prevention and treatment of delirium in hospitalized adults: a systematic review and meta-analysis. *J Am Geriatr Soc* 2016;64:705–14.
- Neufeld K, Needham D, Oh E, Wilson L, Nikoos R, Zhang A. Antipsychotics for the prevention and treatment of delirium. Comparative effectiveness review No. 219. (prepared by the Johns Hopkins University evidence-based practice center under contract No. 290-2015-00006-I-2.) AHRQ publication No. 19-EHC019-EF. Rockville, MD Agency for Healthcare Research and Quality; 2019.
- By the American Geriatrics Society 2015 Beers Criteria Update Expert Panel. American geriatrics Society 2015 updated beers criteria for potentially inappropriate medication use in older adults. *J Am Geriatr Soc* 2015;63:2227–46.
- Campanelli CM, American Geriatrics Society 2012 Beers Criteria Update Expert Panel. American geriatrics Society updated beers criteria for potentially inappropriate medication use in older adults. *J Am Geriatr Soc* 2012;60:616–31.
- Gallagher P, Ryan C, Byrne S, et al. STOPP (screening tool of older person's prescriptions) and start (screening tool to alert doctors to right treatment). consensus validation. *Int J Clin Pharmacol Ther* 2008;46:72–83.
- O'Mahony D, O'Sullivan D, Byrne S, et al. STOPP/START criteria for potentially inappropriate prescribing in older people: version 2. *Age Ageing* 2015;44:213–8.
- Australian Commission on Safety and Quality in Health Care (ACSQHC). Delirium clinical care standard Sydney; 2016.
- Cull EJ. *Incident delirium in the acute general medical setting*. Melbourne Deakin University, 2015.
- Fong TG, Davis D, Growdon ME, et al. The interface between delirium and dementia in elderly adults. *Lancet Neurol* 2015;14:823–32.
- Utsumi K, Fukatsu R, Yamada R, et al. Characteristics of initial symptoms and symptoms at diagnosis in probable dementia with Lewy body disease: incidence of symptoms and gender differences. *Psychogeriatrics* 2020;20:737–45.
- Jankovic J, Aguilar LG. Current approaches to the treatment of Parkinson's disease. *Neuropsychiatr Dis Treat* 2008;4:743–57.
- Anor CJ, O'Connor S, Saund A, et al. Neuropsychiatric symptoms in Alzheimer disease, vascular dementia, and mixed dementia. *Neurodegener Dis* 2017;17:127–34.
- Fernando E, Fraser M, Hendriksen J, et al. Risk factors associated with falls in older adults with dementia: a systematic review. *Physiother Can* 2017;69:161–70.
- Inouye SK, Marcantonio ER, Metzger ED. Doing damage in delirium: the hazards of antipsychotic treatment in elderly persons. *Lancet Psychiatry* 2014;1:312–5.
- Bradshaw C, Atkinson S, Doody O. Employing a qualitative description approach in health care research. *Glob Qual Nurs Res* 2017;4:233339361774228.
- Goethals S, Dierckx de Casterlé B, Gastmans C. Nurses' decision-making in cases of physical restraint: a synthesis of qualitative evidence. *J Adv Nurs* 2012;68:1198–210.
- Royal Commission into Aged Care Quality and Safety. Restrictive practices in residential aged care in Australia; 2019.
- Walsh KA, Sinnott C, Fleming A, et al. Exploring antipsychotic prescribing behaviors for nursing home residents with dementia: a qualitative study. *J Am Med Dir Assoc* 2018;19:948–58.
- Lee DT, Chan MC, Tam EP, Yeung WS, et al. Use of physical restraints on elderly patients: an exploratory study of the perceptions of nurses in Hong Kong. *J Adv Nurs* 1999;29:153–9.
- Teece A, Baker J, Smith H. Identifying determinants for the application of physical or chemical restraint in the management of psychomotor agitation on the critical care unit. *J Clin Nurs* 2020;29:5–19.
- Hshieh TT, Yue J, Oh E, et al. Effectiveness of multicomponent nonpharmacological delirium interventions: a meta-analysis. *JAMA Intern Med* 2015;175:512–20.
- Australian Commission on Safety and Quality in Health Care (ACSQHC). *Australian charter of healthcare rights*. 2nd ed, 2019.
- Rider EA, Kurtz S, Slade D, et al. The International charter for human values in healthcare: an interprofessional global collaboration to enhance values and communication in healthcare. *Patient Educ Couns* 2014;96:273–80.
- White B, McDonald F, Willmott L. *Health law in Australia*. Third Edition. Sydney: Thomas Reuters, 2018.

- 45 Department of Health State Government of Victoria. Medical treatment decision makers 2018 [Available from. Available: <https://www.betterhealth.vic.gov.au/health/servicesandsupport/medical-treatment-decision-maker>
- 46 Australian Government. Quality of care principles in: counsel. OoP, editor; 2014.
- 47 Brand SL. Nurses' roles in discharge decision making in an adult high dependency unit. *Intensive Crit Care Nurs* 2006;22:106–14.