

# **Junior doctors' experience, knowledge and confidence in managing patients with delirium-related agitation in the general hospital setting.**

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## **Introduction**

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Delirium is defined as a disturbance in attention and change in cognition, which develops over a short period of time, fluctuates and a consequence of medical condition(s) or combination of factors (1). Often, delirium can present as acute agitation, which is characterised by an increase in both motor and psychological activities associated with a lack of organisation of thought and/or altered consciousness.

Delirium has been shown to independently increase the risk of poor patient outcomes, including mortality, institutionalisation and long term functional decline (4,5). In the ICU setting, delirium-related agitation increases rates of morbidity and mortality (2). Amongst older patients over the age of 65, delirium is the most common complication of hospital admission and can occur in up to 42% of patients at some point during their hospital stay (3). Delirium can also be the harbinger of a neurodegenerative disorder.

Despite its prevalence and the importance of appropriate management, studies show delirium is an under-recognised condition in the hospital setting, with up to 65 -75% of cases going unidentified (6). Moreover, evidence suggests that there is significant variability in physician comfort in managing delirium. Studies have shown that diagnostic criteria and the management of delirium is poorly understood by junior doctors in the United Kingdom (7,8). Similarly, emergency department (ED) physicians and staff have identified a lack of clear diagnostic strategies for delirium, despite it being a common presentation in the ED. This study also showed varying comfort levels amongst ED staff in managing delirium (9).

Junior doctors are often faced with managing agitation and aggression in delirious patients. Despite this, there appears to be a lack of literature analysing the knowledge and experience of delirium recognition and management of junior doctors in Australia. This project looks to evaluate the current experience, confidence and knowledge of junior medical staff in dealing with delirium-related agitation.

## **Aim**

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To evaluate the current experience, confidence and knowledge of junior staff in managing delirium-related agitation.

## **Methods**

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We conducted a cross sectional survey looking at four primary areas including demographics, confidence and experience levels and knowledge of participants. The survey was distributed via email link using SurveyMonkey between 11 May 2018 and 11 September 2018. The project was given ethics approval by the Peninsula Health Research Department (QA18PH21).

Quantitative and qualitative data was collected and analysed by the primary researcher. Response rates for survey return, responses to questions and demographics of responders were summarised using descriptive statistics (numbers and proportions for categorical variables, means and standard deviations for continuous variables).

### *Population*

The survey was available to all junior doctors (interns to Post Graduate Year [PGY] 3 level) and final year medical students at Peninsula Health.

### *Setting*

Peninsula Health is a Victorian public healthcare network which consists of 4 centres - one tertiary centre, one secondary centre and two subacute centres (Frankston Hospital, Rosebud Hospital, Golf Link Road Rehabilitation Centre and The Mornington Centre). The network's tertiary centre consists of 454 beds and provides general and specialty medical and surgical services, mental health, maternity and paediatric services.

Peninsula health is affiliated with Monash University. It has rotating medical students from these Monash University throughout the year.

As part of its workforce, 44 interns and 94 residents were employed at Peninsula Health in 2018. Residents are employed throughout different departments: 14 in surgery, 20 in medicine, 6 in critical care, 4 in ED, 6 in psychiatry and 44 residents in a general stream.

## **Results**

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112 interns and residents were invited to participate in the study. The study link was able to shared with registrars and final year students however it is unclear how many were invited to participate. There were 55 responses in total to the survey. 10 were incomplete and were therefore excluded from the analysis.

**Almost one third of participants (31%) were residents or registrars at PGY3 level and 76% of participants had completed their medical training as an undergraduate degree. Previous experience in general medical and surgical rotations were most common at 80% (**

Table 1).

**Table 1: Demographics (PGY Postgraduate Year, ICU Intensive Care Unit, ED Emergency Department)**

Level	
Final Year student	16% (n=7)
Intern	24% (n=11)
PGY2	29% (n= 13)
PGY3	31%(n=14)
Education	
Undergraduate	76% (n=34)
Postgraduate	24% (n=11)
Specialty Experience	
Critical care (ICU, Anaesthetics, ED)	71% (n=32)
General medicine	80% (n=36)
Specialty medicine	51% (n=23)
Aged Care	51% (n=23)
Psychiatry	36% (n=16)
Surgery	80% (n=36)

51% of respondents reported previously managing delirium-related agitation over 10 times. Reported encounters involving the management of patients with delirium-related agitation increased with seniority. 79% of participants who were PGY3 level reported having managed patients with delirium-related agitation over 10 times. Only final year medical students reported having never previously managing a patient with delirium-related agitation (Figure 1). The most common rotation on which participants were required to manage patients with delirium frequently was general medicine (Figure 2).

69% of respondents reported experiencing situations which they felt may have resulted in poor outcomes for patients with delirium-related agitation. In extended responses elaborating on poor outcomes, themes included pharmacological and physical restraints, compromise to a patient's dignity, delayed medical management because of agitation, and staff injuries.

71% (n=30) of respondents cited 'learning on the job' as the highest impact environment that they learnt how to manage delirium-related agitation in. Only 24% chose university as highest impact. Formal and informal teaching were only chosen by 1 respondent each as being high impact on developing skills involved in the management of delirium-related agitation.

60% (n=27) were somewhat confident in managing delirium-related agitation. 20% (n=9) were not confident in prescribing medications for delirium management (Figure 4). Those who stated that they were not confident in prescribing medications for delirium-related agitation ranged in levels up to PGY2 (with 4 final year medical students, 1 intern and 3 PGY2s).

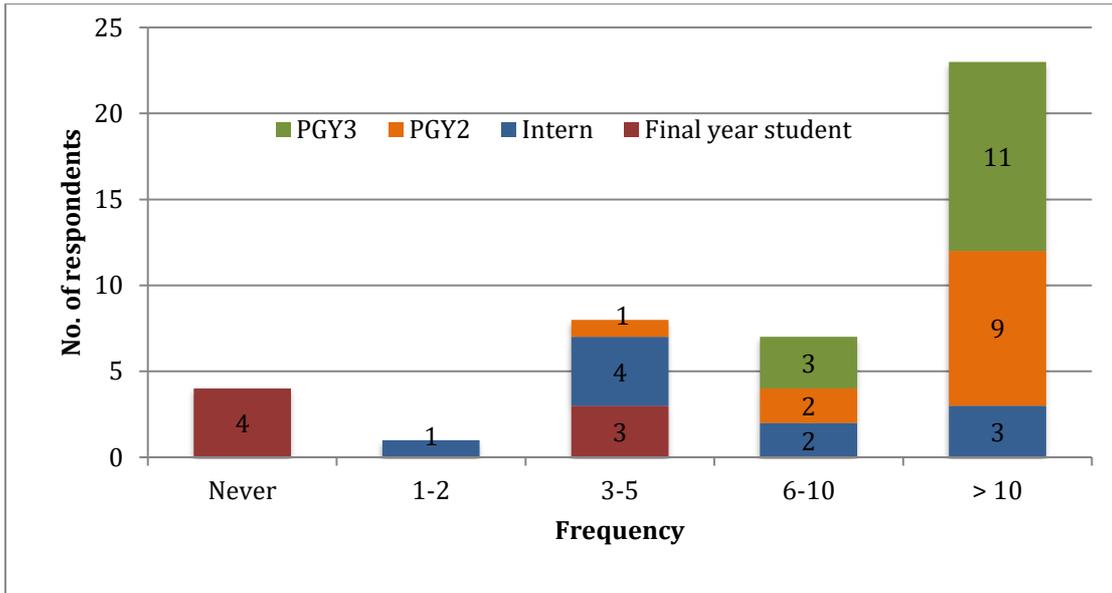


Figure 1 : Number of times managing a patient with delirium-related agitation

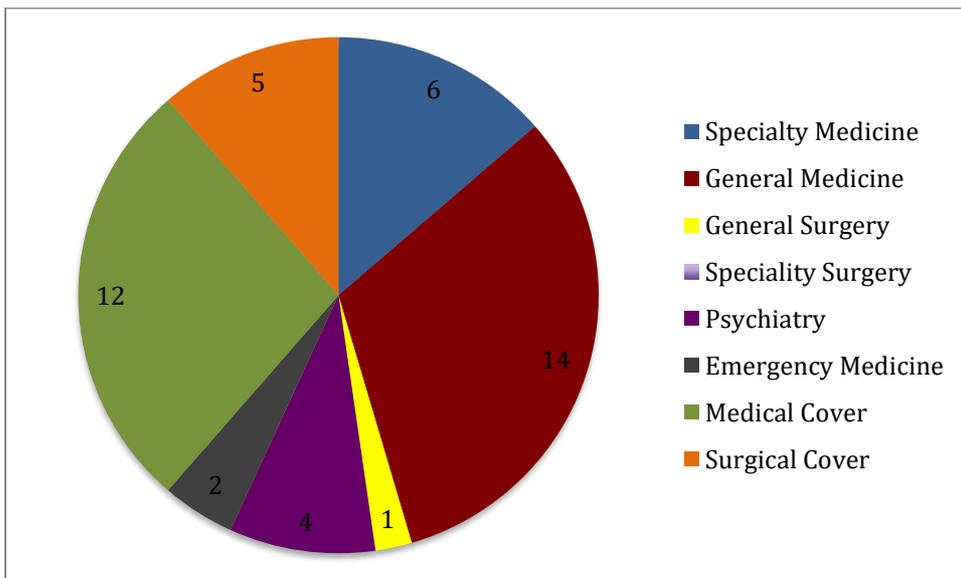


Figure 2: Rotations on which participants needed to manage patients with delirium most frequently

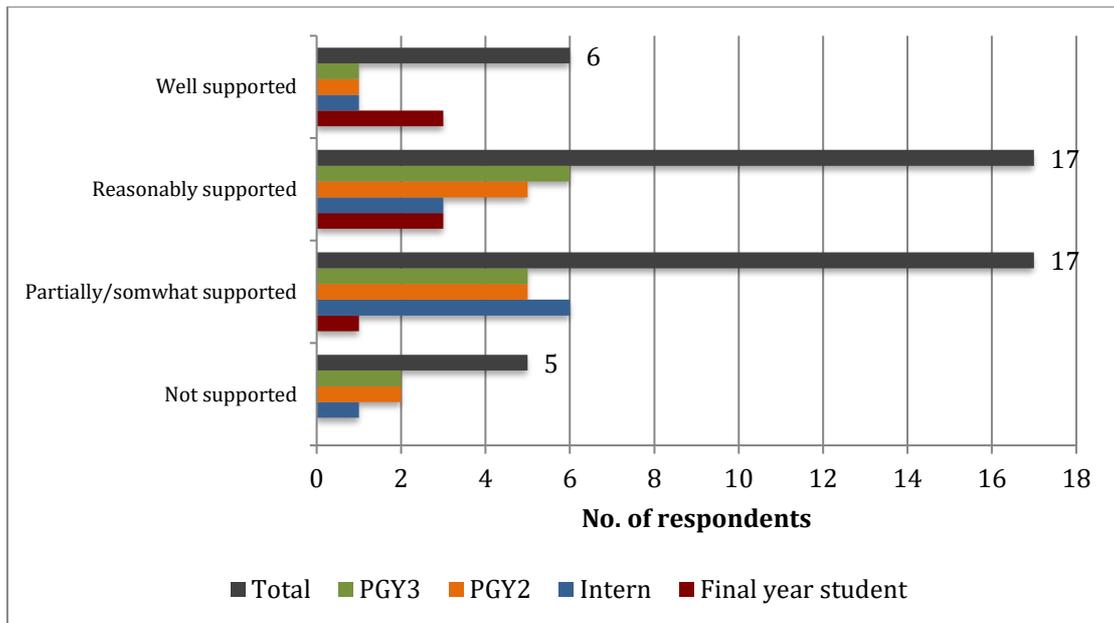


Figure 3: How well supported respondents feel in managing delirium-related agitation

75% (n=33) of respondents were most concerned with initiating inappropriate or inadequate medical management when managing a patient with delirium-related agitation. 56% of participants felt that having readily available guidelines for delirium management would be most helpful to improve confidence.

Experiences that made participants less confident when assessing and managing patients with delirium-related agitation were most commonly disagreement with nursing staff, and having to manage a patient’s medical co-morbidities. Additionally, most participants felt that senior support being readily available (82%) and previous experience in managing delirium-related agitation (73%) made them more comfortable in dealing with delirious patients on the ward. Many also felt that accessing readily available guidelines (60%) and previous rotations in relevant specialties (56%) had been helpful in improving their confidence. Rotations in geriatric medicine and psychiatry were identified as rotations that improved confidence levels.

Overall knowledge of delirium management was good, however 73% of participants did not list quetiapine as the first-line medication for behavioural management in patients with Parkinson’s Disease. When given a scenario of a high risk elderly patient not accepting oral medication, of 41 responses, 51% (n=21) of respondents answered this question correctly. 54% (n=22) of junior doctors were unaware of the need for consent prior to prescribing anti-psychotics in non-emergency situations under the new Victorian Medical Treatment Act and only 51% of respondents knew where to look up relevant guidelines. (Figures 5 to 8).

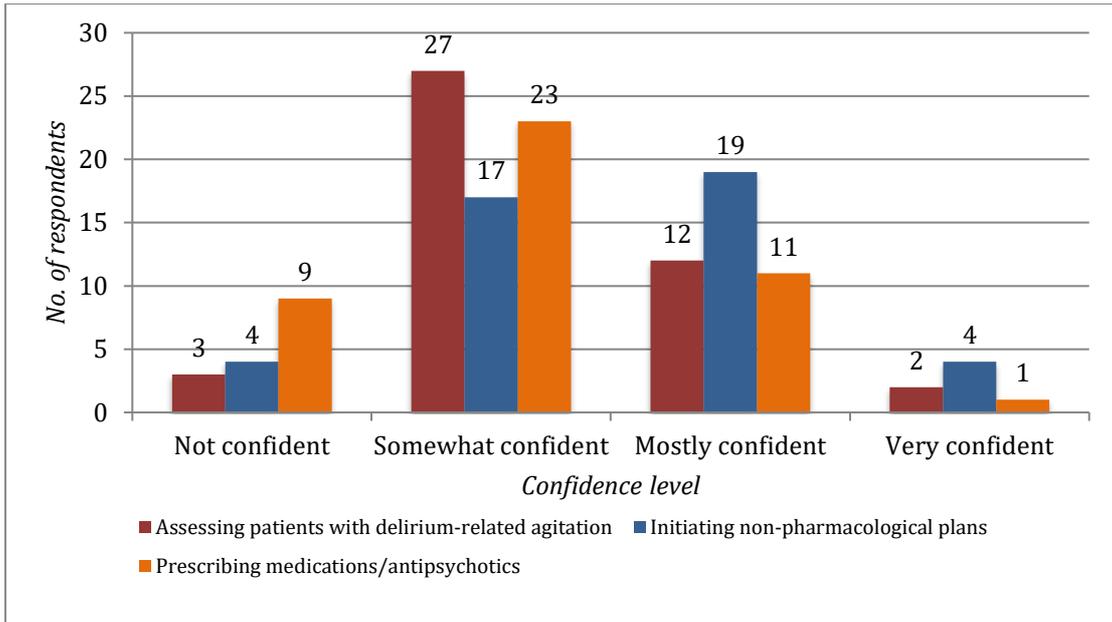


Figure 4 : Confidence levels in different management areas of delirium-related agitation

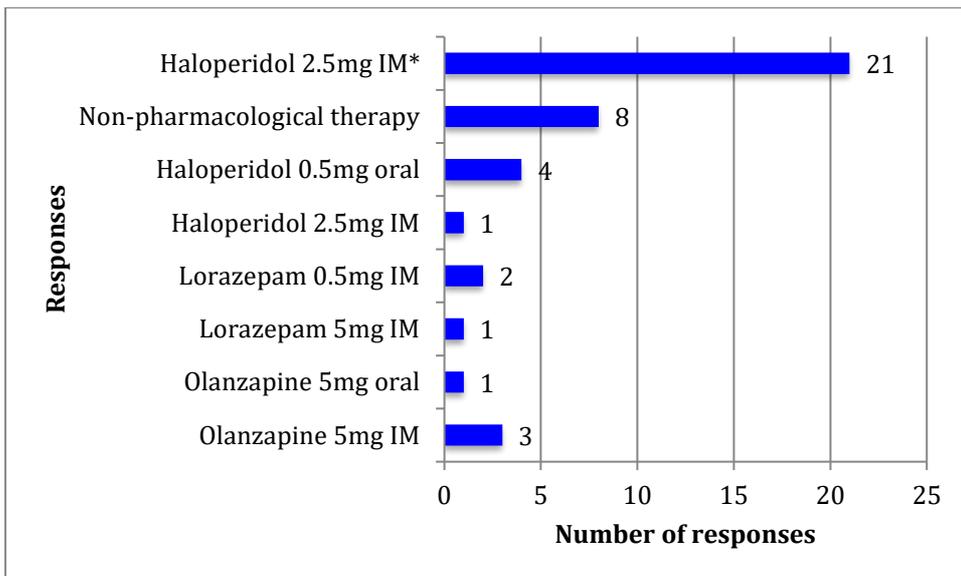


Figure 5 : Response rates to Question 20 (please see Appendix 1 for complete question stem)  
\*correct response

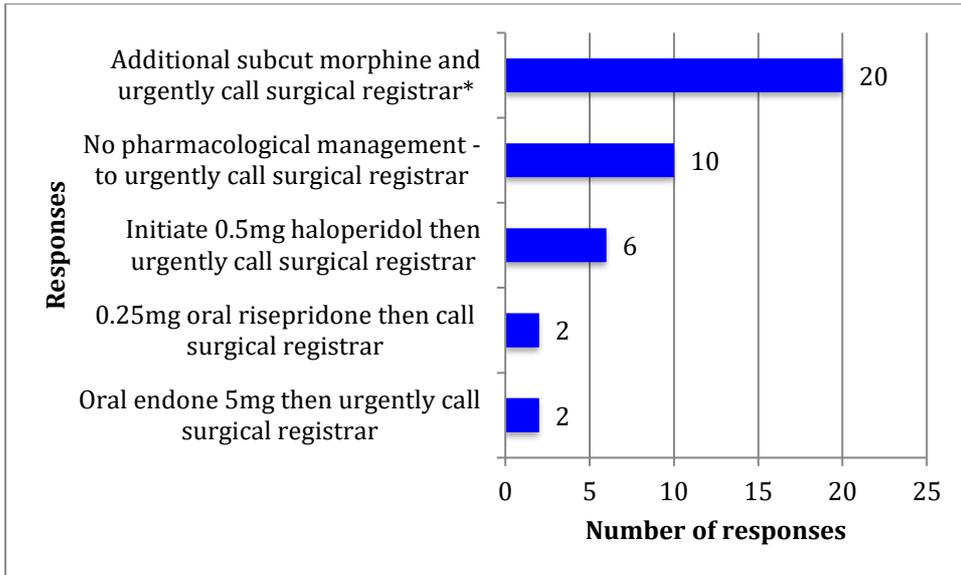


Figure 6: Response rates to Question 21 (please see Appendix 1 for complete question stem)  
\*correct response

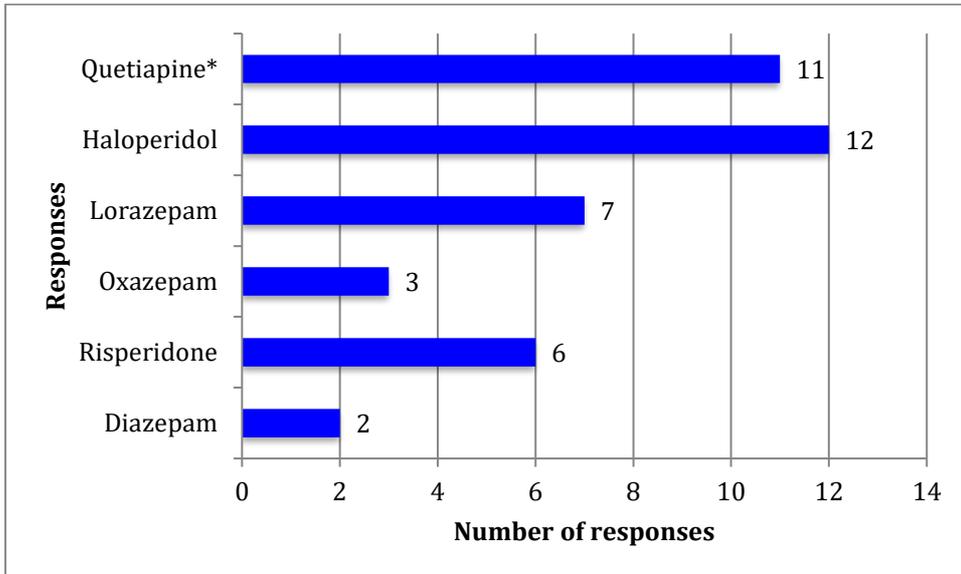


Figure 7: Response rates to Question 22 (please see Appendix 1 for complete question stem)  
\*correct response

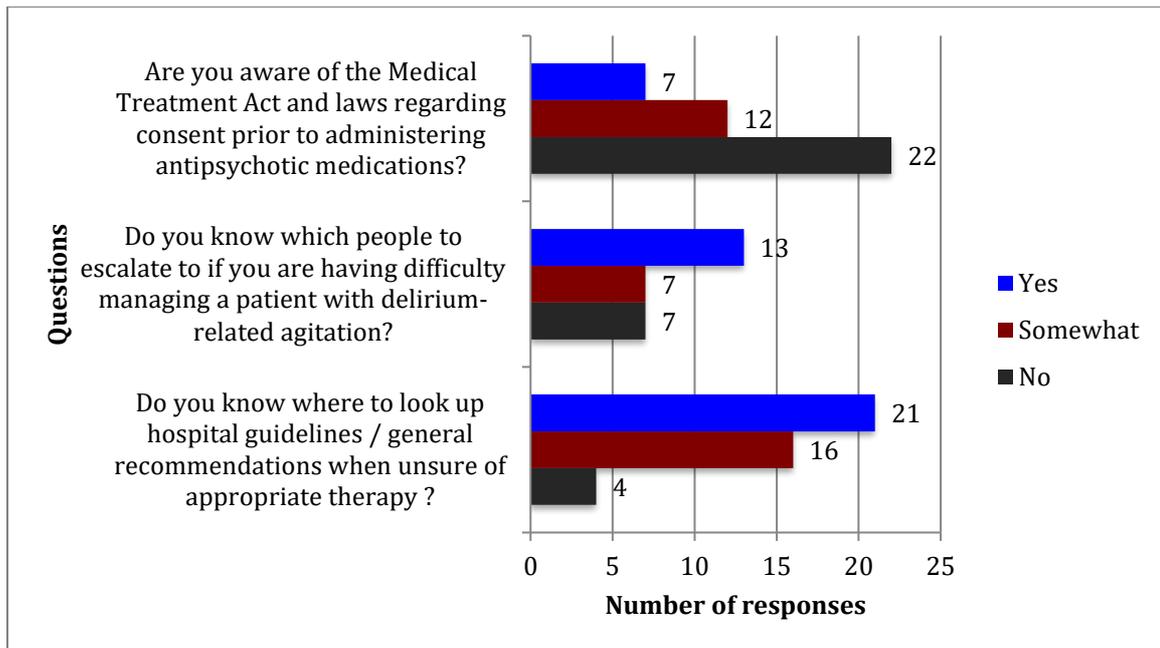


Figure 8: Responses to Questions 23, 24 and 25 in knowledge section

## Discussion

Unsurprisingly, this survey showed delirium to be a condition commonly managed by junior doctors.

Despite recognition (and often experience) of the potential for serious clinical consequences with suboptimal management, this survey showed that junior doctors have knowledge gaps in key areas of delirium management. Moreover, most respondents were only 'somewhat confident' in managing patients with delirium-related agitation.

Participants identified that having to consider a patient's co-morbidities when managing delirium-related agitation decreased their confidence and this was exemplified by 73% of survey participants failing to identify quetiapine as the first-line antipsychotic for patients with Parkinson's Disease. Concerningly, while junior doctors were commonly managing delirium-related agitation on the wards, over half were not aware of the Medical Treatment Act and laws regarding consent for the medications they were expected to prescribe. Given the ethical and legal implications of inappropriate care of an often vulnerable patient population, it is pertinent to highlight these common areas of weaknesses. In doing so, it may help provide targeted learning tools to assist junior doctors. Encouragingly, a previous study has shown that focused delirium education and tools can improve screening and management (10), and utilising similar tools throughout hospitals may help improve outcomes.

Although our study had a small sample size, our results were consistent with a large UK survey of junior doctors. This study showed that while most trainees recognised delirium as a common, serious and treatable condition, confidence levels appeared poor. In addition to this, the same study also revealed

knowledge gaps in regards to basic concepts such as diagnostic criteria for delirium and even appropriate dosages (8).

While the UK survey examined trainee physicians only, this survey was open to final year medical students and junior medical staff in all specialty areas. We chose to extend our population group to less experienced junior doctors as we expected delirium-related agitation to occur broadly in a hospital setting. Indeed, our results showed that junior doctors (with a range of experience levels) were expected to manage delirium-related agitation across all specialties and jobs, including after- hours cover, when there is usually less senior staff support available. Interestingly, only 13% of respondents felt well supported, with half of these being final year medical students. This is perhaps reflective of the increasing responsibilities and expectations of junior doctors as they enter into more senior roles. Junior doctors in registrar roles are often required to manage more complex clinical situations that may require the involvement of senior medical staff as well as administrative members within the hospital. Clear escalation pathways may be useful in improving support for junior doctors in more senior roles.

Our study highlights the need for easily accessible and well-advertised protocols for the management of delirium and delirium-related agitation, as well as ongoing junior medical staff education. It is noted that Peninsula Health has a standardised delirium management guideline that is available on the staff intranet. It is therefore surprising that while participants identified readily available guidelines as a strategy that would improve confidence, almost half were not confident of where to find them. This suggests that the existence of a clear protocol is not enough to improve outcomes on its own.

Overall, junior doctors surveyed felt that 'on-the-job' learning was of greatest value to increase their confidence levels, as were rotations in geriatric medicine and psychiatry. It may therefore be useful to make rotations in these specialities more widely available to junior doctors early on in their training.

With an ageing population in Australia (12), the prevalence of patients at risk of developing delirium within the hospital setting can only be expected to increase. It is therefore crucial to improve teaching and awareness of appropriate management early in a junior doctor's career regardless of specialty discipline.

### *Limitations*

Our study had several limitations. First, this was a small survey conducted in one healthcare network, so it may not be applicable to a broader population, however our results were largely consistent with previous surveys. Not all those invited to participate responded, and hence the results of the survey may be affected by non-response bias. Given that this was a survey, and hence depended

on self-report, the possibility of recall bias affecting the experiential components of the survey results also exists.

Second, this study was distributed and completed online so it was difficult to ascertain whether participants were looking up information in order to answer questions within the knowledge section. However, given that our results showed some common areas of weakness in terms of participant knowledge, it suggests that junior doctors did not know where to find information on delirium management. Also, assessment of knowledge was only based on a few case scenarios and thus may not have been comprehensive.

Third, residents or registrars may range in experience and it was difficult to ascertain the postgraduate experience of individuals throughout the different departments. We were therefore unable to compare residents or registrars in different departments and ascertain whether this contributes to confidence and knowledge levels. We also did not include what roles participants were working in (i.e resident or registrar role). These details may be interesting to examine in the future as they may help further strategise ways in which to target and improve delirium management.

## **Conclusion**

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Junior doctors manage delirium-related agitation commonly but have low levels of confidence, with knowledge gaps in some aspects of delirium management. There needs to be further research into this area to identify effective strategies to improve confidence and knowledge.

## **References**

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## Appendix A

### Survey Questionnaire

#### INTRODUCTORY TEXT

You are invited to participate in a research project being conducted by the Department of Medicine at Peninsula Health. The purpose of this research is to determine the experience, knowledge and confidence of junior medical staff in managing delirium-related agitation.

This survey is being given/sent to junior medical staff and final year medical students at Peninsula Health.

It should take approximately 5-10 minutes to complete.

By completing the survey you will provide information on your demographics, experience, confidence and knowledge in the management of delirium-related agitation, that may assist in providing more targeted education and support for junior doctors in this area.

Your name is not recorded anywhere on the survey.

If you wish to take part in the research project please complete the survey. By completing the survey you are telling us that you

- ⇒ Understand what you have read
- ⇒ Consent to take part in the research project
- ⇒ Consent to the use of your survey data as described

Participation in this survey is voluntary, if you do not wish to take part you do not have to.

Once you have submitted your responses they remain in the data collected by the survey. If you decide that you would like to withdraw from participation after you have submitted your answers your data cannot be removed as it was not identified. If you require information relating to the privacy policies of Survey Monkey they are available at <http://www.surveymonkey.com/privacypolicy.aspx>

Results of this survey will be available on request from the Department of Medicine (email [LNguyen@phcn.vic.gov.au](mailto:LNguyen@phcn.vic.gov.au) and will be submitted for publication and presented at conferences and seminars.

The ethical aspects of this project have been approved by the Peninsula Health Human Research Ethics Committee.

If you have any questions regarding this survey you may contact the researcher : Dr Lucia Nguyen Email: [LNguyen@phcn.vic.gov.au](mailto:LNguyen@phcn.vic.gov.au)

If you have any complaints about any aspect of this research project, the way it is being conducted or any questions about being a research participant in general you may contact:

Manager Office for Research Peninsula Health

Telephone: 9784 2679

Email: [researchethics@phcn.vic.gov.au](mailto:researchethics@phcn.vic.gov.au)

## **Demographics**

### **1) Level :**

- Final year medical student
- Intern
- PGY2
- PGY3

### **2) Education:**

- Undergraduate
- Postgraduate

**3) What rotations have you worked in / rotated through ?**

- Critical care (ICU, Anaesthetics, ED)
- General medicine
- Specialty medicine
- Aged care
- Psychiatry
- Surgery

**Experience:**

**4) How many times have you had to manage a patient with delirium-related agitation?**

- Never
- 1-2
- 3-5
- 6-10
- >10

**5) Of these times, how many times were you the first medical person to be contacted?**

- Never
- <25%
- 25-50%
- 50-75%
- 100%

**6) How often were you required to initiate pharmacological management of a delirious patient?**

- Never
- 1-2
- 3-5
- 6-10
- >10

**7) How often did a patient's agitation improve with non-pharmacological intervention alone? (e.g contacting family members, redirecting patient etc)**

- Never
- <25%
- 25-50%
- 50-75%
- 100%

**8) Have there ever been poor outcomes associated with poor/inappropriate/delayed management of an agitated patient with delirium? (e.g oversedation of patient, injury to patient, injury to staff etc)**

- Yes
- No

*If yes, please elaborate:*

**9) How well supported did you feel in managing agitation in a delirious patient on the ward?**

- Not supported
- Partially / somewhat supported
- Reasonably supported
- Well supported

**10) Where did you learn to manage agitation in a delirious patient (if more than one please number from highest impact to lowest impact)?**

- University
- On the job / learning while managing a patient with delirium-related agitation
- Formal teaching in hospital
- Informal teaching in hospital

**11) On which rotations did you have to manage agitation in a delirious patient most frequently? (please list 1 – 3 from most to least frequent)**

- Specialty medicine
- General medicine
- General surgical
- Specialty surgical
- Psychiatry
- Emergency medicine
- Medical cover after hours
- Surgical cover after hours

**Confidence:**

**12) How confident are you in assessing a patient with delirium-related agitation?**

- Not confident at all
- Somewhat confident
- Mostly confident
- Very confident

**13) How confident are you in initiating non-pharmacological intervention/ plans for delirious patients with agitation?**

- Not confident at all
- Somewhat confident
- Mostly confident
- Very confident

**14) How confident are you in prescribing medications for management of agitation in patients with delirium?**

- Not confident at all
- Somewhat confident
- Mostly confident

Very confident

**15) How confident are you in escalating to pharmacological management for patients with delirium-related agitation?**

- Not confident at all
- Somewhat confident
- Mostly confident
- Very confident

**16) What sort of things would improve your confidence in managing agitation in patients with delirium? (Please number from most useful to least useful)**

- Formal teaching
- Readily available guidelines
- Clear escalation pathway
- Security staff presence

**17) What have you experienced that made you less confident when assessing and managing agitation in a delirious patient? (tick all that apply)**

- Conflict / disagreements with nursing staff
- Conflict / disagreements with medical staff
- Conflict / disagreements with administrative or management staff
- Conflict / concerns from family
- Patient's medical co-morbidities
- Other (please specify)

**18) What have you experienced that made you more confident when assessing and managing agitation in a delirious patient? (tick all that apply)**

- Senior support being available
- Previous rotations in relevant specialities (geriatrics, psychiatry, emergency etc.) (please specify which specialty was most useful) : \_\_\_\_\_
- Previous experience in managing delirium-related agitation
- Accessibility of pre-existing guidelines
- Other: (please specify)

**19) What concerns you most when managing agitation in a delirious patient (please number from 1 -3 in order of most to less concerning) ?**

- Initiating inappropriate/inadequate medical management
- Risk to personal safety
- Patient and family complaints with management
- Nursing staff being unhappy with management plan
- Administrative staff being unhappy with management plan
- Medical staff being unhappy with management plan

### Knowledge

**20) A small, frail 78 y.o lady is an inpatient under general medical team for urosepsis being managed empirically with IV ceftriaxone pending urine MCS results. She was moved from ED up to the wards about two hours ago and is yet to be seen by the medical registrar. You are the after hours cover HMO.**

You note that the patient has a history of Alzheimer's dementia. You are called by the ANUM requesting review and management as she is yelling at nursing staff and patients on the ward and wandering around demanding the return of her dog. Staff have been unable to redirect her and in attempts to calm her down she has bitten one of the nurses. She usually ambulates with a 4WW but is currently walking without any aids and becoming increasingly agitated. She has not had any medications for her agitation and is refusing and spitting out tablets. What is the most appropriate therapy you would now initiate for her agitation?

- Non-pharmacological therapy
- Haloperidol 0.5mg oral
- Haloperidol 0.25mg IM
- Haloperidol 2.5mg IM
- Lorazepam 0.5mg oral
- Lorazepam 0.5mg IM
- Lorazepam 5mg IM
- Olanzapine 5mg oral
- Olanzapine 7mg oral
- Olanzapine 5mg IM

21) A small, frail 80 y.o gentleman has been admitted with likely appendicitis for conservative management. He is on IV ceftriaxone and metronidazole. You note that since this afternoon, he has been using more PRN analgesia. He can be heard calling out from the hallway and is clearly distressed and confused. He has no history of dementia. Nursing staff note that he was much more settled this morning. You go in to examine him and note that his abdomen is rigid. While examining him he grabs your arm and says a few nonsensical words in an aggressive manner. When the nurse comes in he tries to hit her but misses. What would you like to do next?

- Haloperidol 0.25 mg oral
- Additional subcut morphine and urgently call surgical registrar
- No pharmacological management - to urgently call surgical registrar first
- Initiate 0.5mg haloperidol then urgently call surgical registrar
- 0.25mg oral risperidone then call surgical registrar
- 0.25mg oral risperidone
- Oral endone 5mg then urgently call surgical registrar
- Start IV hydration with 1 L 0.9% normal saline over 12 hours

22) 79 y.o lady has been admitted with pneumonia complicated by delirium. Her other PMhx includes: COPD, osteoarthritis , Chronic renal impairment, Parkinson's disease and hypertension. Tonight she is very agitated and pulling out her cannula . What would be your first line agent ?

- Haloperidol
- Quetiapine
- Lorazepam
- Oxazepam
- Risperidone
- Diazepam

23) Do you know where to look up hospital guidelines / general recommendations when unsure of appropriate therapy ?

- Yes
- Somewhat
- No

**24) Do you know which people to escalate to if you are having difficulty managing a patient with delirium-related agitation?**

- Yes
- Somewhat
- No

*If you answered 'yes' or 'somewhat', please list who you would contact :*

**25) Are you aware of the Medical Treatment Act and laws regarding consent prior to administering antipsychotic medications**

- Yes
- Somewhat
- No