

Improving the Management of Severe Behavioural and Psychological Symptoms of Dementia (BPSD) in Hospitals

Point Prevalence Study of
Dementia and BPSD in
Victorian Health Services

Final Online Report

Prepared by:

National Ageing Research Institute (NARI)

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACAS	Aged Care Assessment Service
AD	Alzheimer's Disease
AH	Allied Health
AHA	Allied Health Assistant
AIHW	Australian Institute of Health and Welfare
ANUM	Associate Nurse Unit Manager
BPSD	Behavioural and Psychological Symptoms of Dementia
CGA	Comprehensive Geriatric Assessment
DH	Department of Health
ED	Emergency Department
GEM	Geriatric Evaluation and Management
GP	General Practitioner
HREC	Human Research Ethics Committee
LOS	Length of Stay
NARI	National Ageing Research Institute
NUM	Nurse Unit Manager
OH&S	Occupational Health and Safety
OT	Occupational Therapist
PAC	Post-Acute Care
PAS	Pittsburgh Agitation Scale
RACF	Residential Aged Care Facility
REDCap	Research Electronic Data Capture
SRS	Supported Residential Services
SSA	Site Specific Authorisation
WHO	World Health Organisation

EXECUTIVE SUMMARY

Hospitals are known to be challenging places for people with dementia. Numerous physiological and psychosocial factors associated with being acutely unwell, combined with an unfamiliar and often unsuitable physical and social environment, can exacerbate symptoms of dementia. These new or changing symptoms can be difficult to manage, cause significant distress to patients, family members, staff and other patients, may result in harm to people with a dementia diagnosis or to others, and result in increased morbidity and mortality.

This point prevalence study forms part of a larger project titled '*Improving the Management of Patients with Severe Behavioural and Psychological Symptoms of Dementia (BPSD) in Victorian Hospitals*' conducted by the National Ageing Research Institute (NARI) on behalf of the Victorian Department of Health (DH). The results from all components of the project will help to inform service delivery and the development of a best practice model of care for patients with BPSD in Victorian public hospitals.

The primary objective of this component was to report the prevalence of dementia and BPSD on a patient level within nine Victorian public hospitals. A point prevalence activity was conducted to identify patient level trends of the prevalence of dementia, and aggressive, abusive or threatening behaviour on a range of acute and sub-acute wards. On the nominated day of data collection, the medical records of all patients on the selected wards/units at each health service were reviewed by the site principal investigators and associate investigators (data collectors) and a standardised point prevalence data collection form was completed.

Ethical approval for this study was obtained from Austin Health Human Research Ethics Committee (HREC) on July 6th, 2021 (HREC/75588/Austin-2021). In addition to routinely collected demographic, administrative and clinical data, qualitative information in the medical record that was related to the admission was used by data collectors to provide estimates of agitation and BPSD using the Pittsburgh Agitation Scale (PAS)¹ and the Brodaty Seven-Tiered Model of Management of BPSD,² respectively.

Key Findings

There is a lack of accurate information available regarding the number of patients with dementia and BPSD in hospital settings across Victoria at any given point in time. The current point prevalence study aimed to identify the prevalence of patients with dementia in participating Victorian health service wards/units.

Across the sample of 437 inpatients included in the study, approximately 22% had a formal diagnosis of dementia. In addition, data collectors identified an extra 21% of patients who they identified as having probable or suspected dementia. These patients were located across all ward types including general medical, acute geriatric, mental health, sub-acute (general) and sub-acute (dementia-specific) wards. However, collectively, this represented almost 20 different admitting units/specialties. Approximately 90% of the patient sample lived in a private residence prior to their hospital admission with only 8% usually residing in Residential Aged Care Facility (RACF).

During their admission to-date, almost half of the 187 patients who either had a diagnosis of dementia or suspected/probable dementia demonstrated aberrant vocalisation (44%), motor agitation (49%) or resistance to care (48%) according to the PAS descriptions. Within each of these categories, around 20% of patients exhibited the highest 2 severities of behaviours. In addition, just under one-third of patients had been aggressive (31%), with 53% of these behaviours involving physical aggression, either towards property or an individual (self or others). Estimates of BPSD severity based on the Brodaty Tiers revealed that almost 20% of patients with suspected, probable, or diagnosed dementia met the criteria for having 'severe', 'very severe' or 'extreme' BPSD (rated Tier 5 or above).

Delirium was also identified as a significant issue, with over one-third (40%) of patients who had a diagnosis of dementia or suspected/probable dementia in the study being identified as having a co-existing delirium relevant to this admission. The presence of other co-morbidities that may have impacted cognition and/or behaviour included active psychiatric conditions (13%) and a recent ICH or stroke (10%).

1. BACKGROUND

1.1 Dementia and Severe BPSD in Hospitals

Dementia is recognised as a significant and growing issue for health and aged care services in Australia. While dementia is not an inevitable or normal part of the ageing process, dementia was the leading cause of death of women and the second leading cause for men in 2020.³

The term “dementia” describes a group of conditions characterised by gradual impairment of brain function, which impacts daily function. Dementia symptoms include difficulties with memory and thinking, communication and speech, and/or mobility, and changes in personality and behaviour. For people formally diagnosed with dementia, difficulties in communicating and expressing needs may manifest in many ways. The Behavioural and Psychological Symptoms of Dementia (BPSD) refer to symptoms of dementia such as mood disturbances, hyperactivity-type symptoms, psychotic symptoms, changes in appetite, hoarding, night-time behaviour disturbances and “wandering” and can affect between 60 and 90% of people with dementia to varying extents.² These symptoms often have a significant impact on people with dementia, carers and family, and have been associated with reduced functional ability, premature admission to residential care, increased hospitalisation rates, and increased stress for carers and for the person with dementia.⁴

The use of the term ‘BPSD’ is controversial⁵ as such symptoms may manifest because of the circumstances and situations perpetuated by other people and by external environments, and also from physical causes (such as medication side effects, undetected or untreated pain or discomfort, infections). However, the term is frequently used in clinical contexts and in the literature alongside other terminology such as changed behaviours, responsive behaviours, unmet needs, behaviours of concern, challenging behaviours and non-cognitive or neuropsychiatric symptoms of dementia.

Hospitals are known to be challenging places for people with dementia, particularly those presenting with BPSD. Numerous physiological and psychosocial factors associated with being acutely unwell, combined with an unfamiliar and often unsuitable physical and social environment, can exacerbate symptoms. These new or changing symptoms can be difficult to manage, cause significant distress to family members, staff and other patients, pose a significant risk of harm to patients themselves or to others, and result in increased morbidity and mortality.

1.2 ‘Improving the Management of Patients with Severe BPSD in Victorian Hospitals’ Project

A key issue identified by the Victorian Sub-acute Executive Peak Body in 2019 was whether Victorian health services have the capacity to meet the needs of a growing number, and increased severity, of people presenting and being admitted to hospitals with BPSD. A preliminary benchmarking survey of nine metropolitan and three regional health services in Victoria revealed that all health services provide care for patients with dementia and BPSD in sub-acute settings, but individual models of care (including management approaches and patient pathways relating to relevant ED and acute care settings) varied significantly between health services.⁴ In addition, a number of challenges to achieving a responsive Geriatric Evaluation and Management (GEM) service, the most common specialist model of care used in Victoria for patients with dementia and BPSD, were identified. Challenges included workforce recruitment, retention, level of skill, and access to specialist mental health services, and issues relating to the built environment.

Since the commencement of this project in 2019 there have been a myriad of issues for hospitals relating to care of older people due to the COVID-19 pandemic. Across Australia the COVID-19 pandemic placed and continues to impact service provision in hospitals and RACF. In Victoria, at least 191 RACF experienced at least one COVID-19 outbreak in the early years of the pandemic. Transfer to hospital was a common response for residents who tested positive for COVID-19 and required medical care. Many of those transferred from RACF to hospital had a diagnosis of dementia and the challenges in managing BPSD were exacerbated.

As a result, the National Ageing Research Institute (NARI) was commissioned by the Victorian Department of Health (DH) to undertake a comprehensive review of the management of patients with severe BPSD in Victorian Hospitals (*Improving the Management of Patients with Severe BPSD in Victorian Hospitals* project).

This patient-level point prevalence study forms part of that larger project.

1.3 Project Components

The *Improving the Management of Patients with Severe Behavioural and Psychological Symptoms of Dementia in Victorian Hospitals* project consists of multiple components. The project components include:

1. Establishment of an agreed definition of 'severe BPSD';
2. Exploration of national and international best practice principles and models of care regarding the hospital management of patients with severe BPSD through a rapid literature review;
3. Exploration of the extent and impact of severe BPSD on incidents, adverse events and outcomes in hospital settings within Victorian health services (through a population prevalence study, a point prevalence study, and a retrospective manual file audit);
4. Exploration of the local actions currently in place within Victorian health services to manage patients with severe BPSD in the hospital setting and compare these against best practice (using an online benchmarking survey); and
5. Exploration of the experience of family members* and staff relating to the current hospital management of severe BPSD within Victorian health services.

**Due to the COVID-19 pandemic, family member experience was not explored*

The results from all components of the project will help to inform service delivery and the development of a best practice model of care for patients with BPSD in Victorian public hospitals.

2. OVERVIEW

2.1 Study Aim

This current study aims to identify the prevalence of inpatients with a diagnosis of dementia in participating Victorian health service wards and/or units.

A point prevalence activity was conducted to identify patient level trends of the prevalence of dementia, as well as aggressive, abusive or threatening behaviour, on acute and sub-acute wards within nine Victorian public health services.

2.2 Study Objectives

2.2.1 Main Objectives

The primary objective of this study was to report the prevalence of dementia and BPSD within nine Victorian public hospital on a patient level. The specific intention was as follows:

1. To determine the percentage of patients on the nominated wards/units with a diagnosis of dementia
2. To determine the percentage of patients on the nominated wards/units showing aggressive, abusive or threatening behaviour

3. PROJECT DESIGN

3.1 Procedure

De-identified patient level data was obtained from a manual point prevalence study of self-nominated wards across nine Victorian health services. Ethical approval for this study was obtained from Austin Health Human Research Ethics Committee (HREC) on July 6th, 2021 (HREC/75588/Austin-2021).

3.2 Recruitment

Site specific authorisation (SSA) was obtained for each of the nine health services participating in the overall project over a period of eight months, with delays largely impacted by the COVID-19 pandemic. The last SSA approval was obtained on 23rd March 2022. Two additional health services were initially approached and included in the multi-site ethics approval however were unable to commit to taking part in the research activities, thus research governance approval was not pursued at these sites and these organisations had no further part in the study.

Six of the participating health services were located in metropolitan Melbourne while the remaining three represented large regional centres (Table 1).

Table 1. Participating Health Services: Point Prevalence Study

	Metropolitan	Regional
Participating Health Services	• Austin Health • Monash Health • Northern Health • Peninsula Health • St Vincent's Hospital Melbourne • Western Health	• Barwon Health • Bendigo Health • Grampians Health Ballarat (formerly known as Ballarat Health Service)

Across the nine health services, there were a range of site principal investigators and associate investigators (data collectors). In total, data was collected by fourteen health professionals including:

- Two (2) Neuropsychologists
- One (1) Psychiatrist
- Four (4) Geriatricians/Fellows
- Five (5) Registrars/Residents
- One (1) Nurse
- One (1) Occupational Therapist (OT)

3.3 Patient Consent

Data collection involved routinely collected demographic, administrative and clinical data, as well as qualitative information relating to the admission, therefore individual patient recruitment or consent was not required as per HREC approved protocol.

3.4 Data Collection

Data items consisted of open, closed and multiple-choice items, which were developed by experts in hospital dementia care representing all participating health services as well as NARI project team members. Feedback was incorporated into a final version of the Point Prevalence Data Collection Form (see Appendix 1).

Data was collected at each health service on one nominated day (a “point” in time) by each on-site data collector and entered into Research Electronic Data capture platform (REDCap). Although it is generally considered preferable for a point prevalence study to have all sites collect data on the same nominated day and time, delays due to both the COVID pandemic and research governance issues meant that health services collected data on different days. It was recommended that health services select 1-3 wards or units per health service, subject to level of engagement and availability. All adult acute and sub-acute wards were eligible to be included in the study, except for Paediatric and Maternity Services.

On the nominated day of data collection, the medical records of all patients on the selected ward/unit were reviewed by the site principal investigators and associate investigators (data collectors), all of whom were clinicians at their respective health service sites, and the point prevalence data collection form was completed. In addition to demographic, administrative and clinical data collection, qualitative information from the medical records was reviewed to provide estimates of challenging behaviours according to the following rating scales:

1. Presence of aggressive, abusive, and threatening behaviour using the Pittsburgh Agitation Scale (PAS).¹ While the PAS is usually performed through direct observation of patient behaviour, data collectors were asked to use the behaviours documented in the medical record to infer the severity of agitation in four specific behavioural dimensions: (1) aberrant vocalisations; (2) motor agitation; (3) aggressiveness and (4) resisting care (Figure 1).

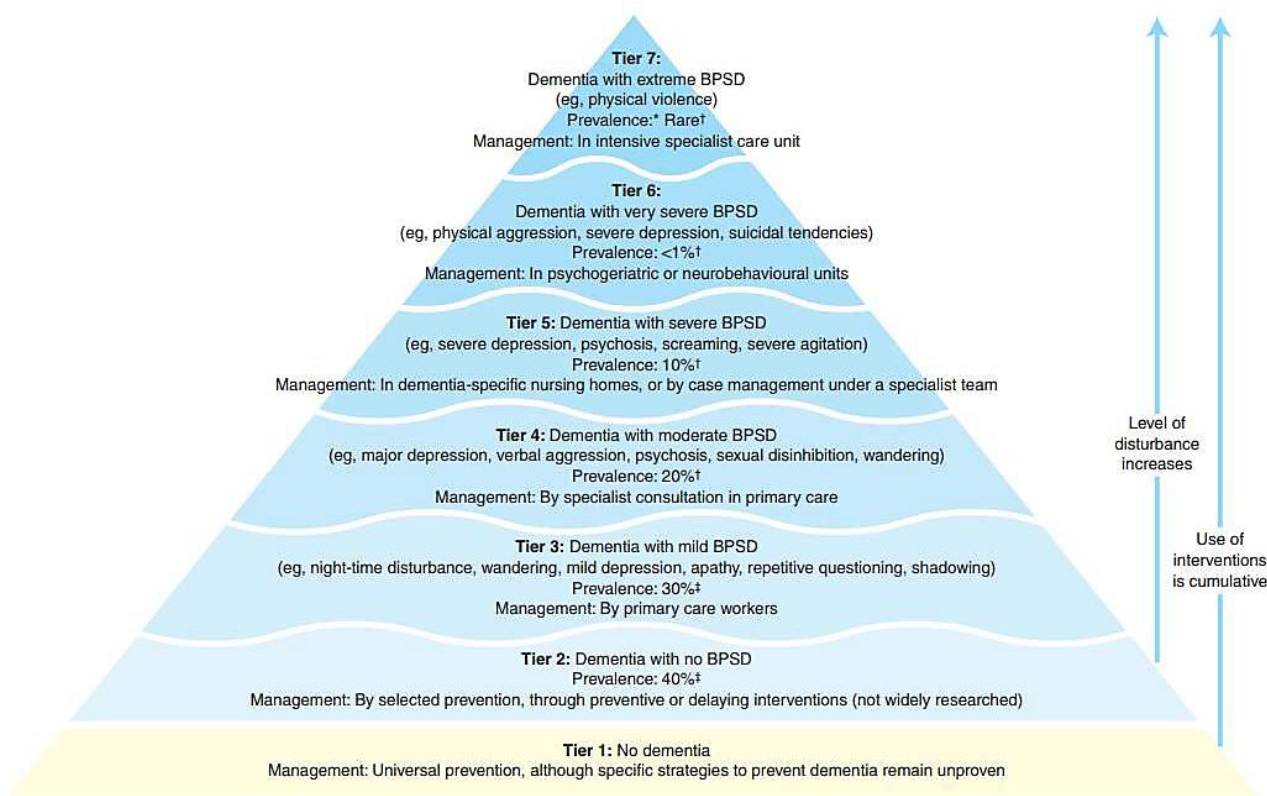
Figure 1. Pittsburgh Agitation Scale¹

Circle only the highest intensity score for each behavior group that you observed during this rating period. Use the anchor points as a guide to choose a suitable level of severity. (Not all anchor points need be present. Choose the more severe level when in doubt.)

Behavior Groups	Intensity During Rating Period
Aberrant Vocalization (repetitive requests or complaints, nonverbal vocalizations, e.g., moaning, screaming)	0. Not present 1. Low volume, not disruptive in milieu, including crying 2. Louder than conversational, mildly disruptive, redirectable 3. Loud, disruptive, difficult to redirect 4. Extremely loud screaming or yelling, highly disruptive, unable to redirect
Motor Agitation (pacing, wandering, moving in chair, picking at objects, disrobing, banging on chair, taking others' possessions. Rate "intrusiveness" by normal social standards, not by effect on other patients in milieu. If "intrusive" or "disruptive" due to noise, rate under "Vocalization.")	0. Not present 1. Pacing or moving about in chair at normal rate (appears to be seeking comfort, looking for spouse, purposeless movements) 2. Increased rate of movements, mildly intrusive, easily redirectable 3. Rapid movements, moderately intrusive or disruptive, difficult to redirect 4. Intense movements extremely intrusive or disruptive, not redirectable verbally
Aggressiveness (score "0" if aggressive <i>only</i> when resisting care)	0. Not present 1. Verbal threats 2. Threatening gestures; no attempt to strike 3. Physical toward property 4. Physical toward self or others
Resisting Care (circle associated activity) Washing Dressing Eating Meds Other _____	0. Not present 1. Procrastination or avoidance 2. Verbal/gesture of refusal 3. Pushing away to avoid task 4. Striking out at caregiver
Were any of the following used during this rating period because of behavior problems? (Circle interventions used.) Seclusion PRN Meds (specify) Restraint Other interventions _____	

2. Severity of behavioural and psychological symptoms of dementia (BPSD) based on the Brodaty Seven-Tiered Model of Management of BPSD.² This model identifies different severities of BPSD, estimates the prevalence of these and provides recommendations about appropriate management (Figure 2). Within this study, severity of BPSD was assigned by data collectors based on available information in the medical record as opposed to patient observation.

Figure 2: Brodaty Seven-Tiered Model of Management of BPSD²



* Prevalence is expressed as estimated percentage of people with dementia who currently fall into this category.

† Estimate based on clinical observations. ‡ Estimate based on Lyketsos et al.²

3.5 Data Analysis

Raw data was downloaded into Excel and cleaned. RStudio (an open-source integrated development environment software program for statistical analysis) and Excel were used to generate and analyse ward demographics, patient demographics, and patient health information. Descriptive data (numbers and percentages) were used to describe the key findings within each of these categories.

4. KEY FINDINGS

4.1 Demographics

4.1.1 Age

The age of patients included in the point prevalence study ranged from 19 – 101 years. The mean age of across all health services was 78 years old (s.d. 12.3), with a median of 80 years (Table 2, Table 3).

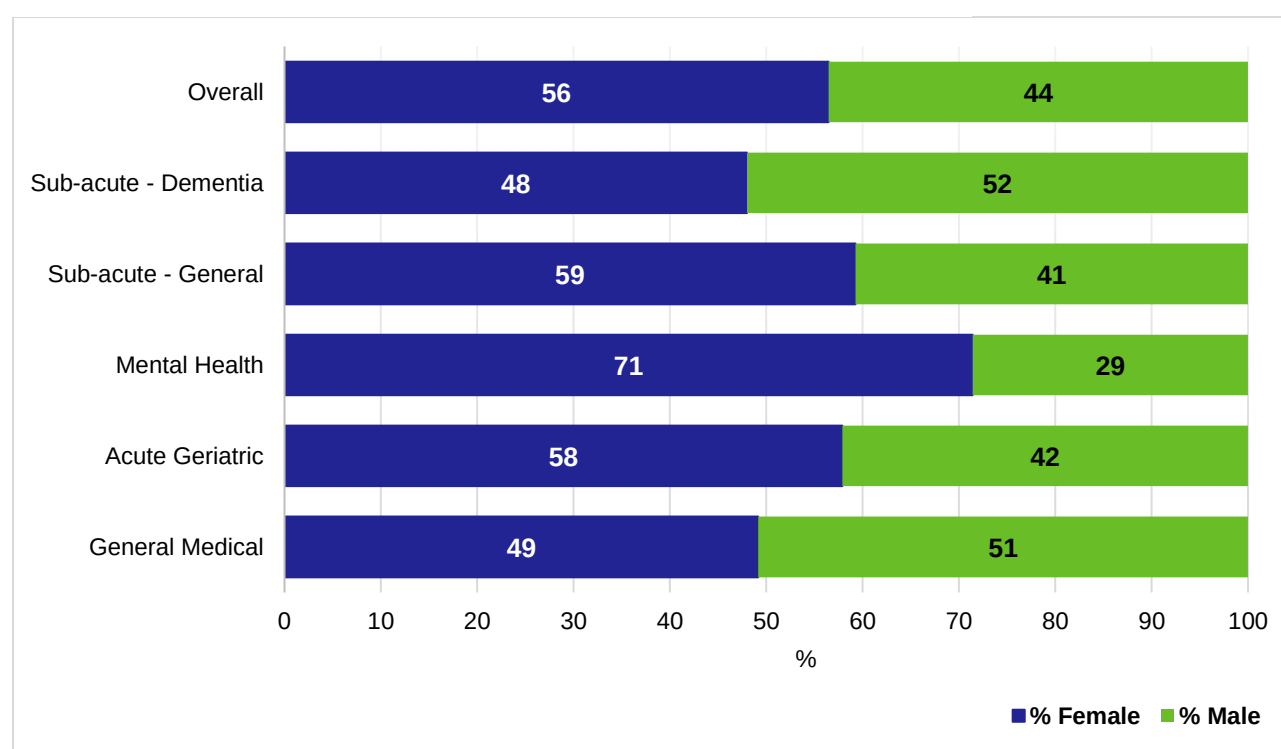
Table 2. Age, by Ward Type

Ward Type	N	Mean Age (s.d.)	Median Age
General Medical	181	77 years (15.0)	80 years
Acute Geriatrics	57	82 years (14.1)	83 years
Mental Health	14	76 years (9.0)	75 years
Sub-acute General	135	80 years (12.5)	82 years
Sub-acute Dementia	50	76 years (10.1)	79 years
TOTAL	437	78 years (12.3)	80 years

4.1.2 Sex

Approximately 56% of patients ($n=236$) in the study were recorded as female, and 44% male ($n=201$) (Figure 3, Table 3). Female patients were more prevalent in acute geriatric wards (58%), sub-acute general wards (59%) and in mental health wards (71%).

Figure 3. Patient Sex (%), by Ward Type



4.1.3 Ward Type

A total of five ward types were included in the point prevalence sample: acute geriatric ($n=3$); general medical ($n=4$); mental health ($n=1$); sub-acute general ($n=5$); and sub-acute dementia ($n=3$). Given that general medical and sub-acute (general) wards were the highest ward types represented, the point prevalence sample includes the greatest number of patients from these two areas (Figure 4).

The full sample includes 437 patients across Victoria who were present on the chosen ward(s) on the respective days of the point prevalence audit. Demographic information for each ward type and overall sample demographics are presented in Table 3.

Within the study, 238 responses were for patients in acute care wards (including general medical and acute geriatric wards), 14 for patients in mental health wards, and 185 for patients in sub-acute care wards (general and dementia-specific).

Figure 4. Point Prevalence Study Ward Types

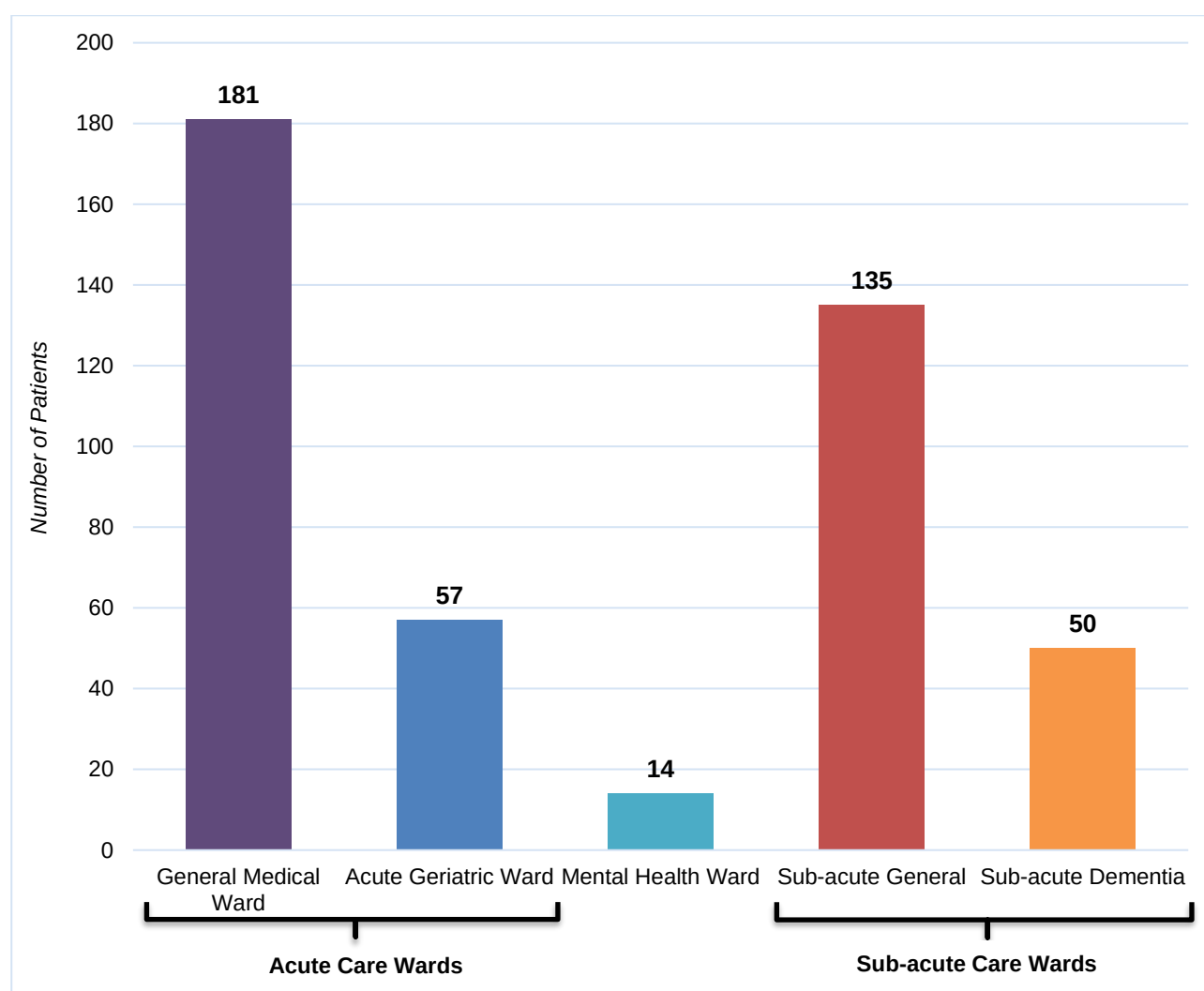


Table 3. Summary of Point Prevalence Patient Demographics, by Ward Type

		General Medical (n=181, 41.4%)	Acute Geriatric (n=57, 13.0%)	Mental Health (n=14, 3.2%)	Sub-Acute General (n=135, 31.0%)	Sub-Acute Dementia (n=50, 11.4%)	Total (N=437)
Age	Mean, years (s.d.)	77 (15.0)	82 (14.1)	76 (9.0)	80 (12.5)	76 (10.1)	78 years (12.3)
	Median	80 years	83 years	75 years	82 years	79 years	80 years (19 – 101 years)
Sex	Female (%)	49%	58%	71%	59%	48%	56%
Accommodation Pre-Admission	Private Residence – Alone	30%	25%	36%	41%	34%	33%
	Private Residence – With Others	58%	63%	21%	55%	52%	56%
	Residential Aged Care	8%	11%	43%	2%	12%	8%
	Other	4%	2%	0%	1%	2%	3%
Current Length of Stay	Mean, days (s.d.)	8 (8.8)	11 (10.6)	62 (45.0)	22 (19.3)	45 (34.0)	30 days (23.6)
	Median	6 days	8 days	62 days	16 days	37 days	26 days
	Minimum	5 hours	1 day	20 hours	4 hours	8 days	4 hours
	Maximum	69 days	46 days	175 days	98 days	154 days	175 days

4.1.2 Current Clinical Unit

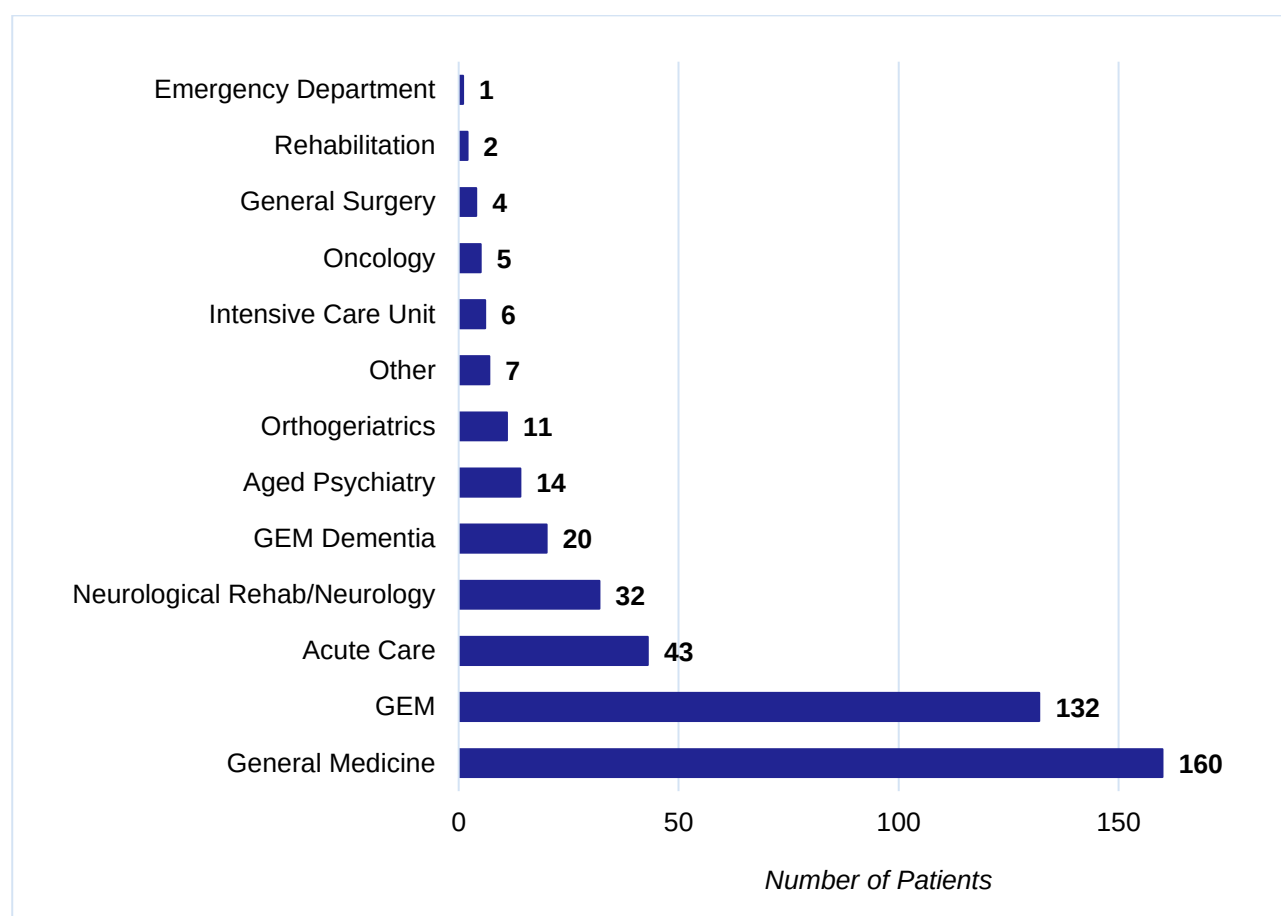
Reflective of the higher volume of general medical wards audited as part of this study, the highest proportion of patients were receiving care under general medicine as their primary clinical unit (37%, $n=160$). Geriatric evaluation and management (GEM) was the next most common, with 30% of patients (Table 4, Figure 5).

Table 4. Current Clinical Units, by Ward Type

Ward Type	Clinical Units	Number of Patients	% Total Patients of Unit Type
General Medical	Emergency Department	1	0.6%
	Endocrinology	2	1.1%
	Gastroenterology	1	0.6%
	General Medicine	150	82.9%
	General Surgery	2	1.1%
	Intensive Care Unit	6	3.3%
	Neurological Rehab/Neurology	1	0.6%
	Oncology	5	3.8%
	Orthogeriatric	11	6.1%
	Renal	1	0.6%
	Respiratory	1	0.6%
	ALL UNITS	181	
Acute Geriatric	Acute Care	43	75.4%
	Cardiology/Heart failure service	1	1.8%
	General Medicine	10	17.5%
	General Surgery	1	1.8%
	Respiratory	1	1.8%
	Stroke	1	1.8%
	ALL UNITS	57	
Mental Health	Aged Psychiatry	14	100%
	ALL UNITS	14	
Sub-acute (General)	GEM	102	75.6%
	Neurological Rehab/Neurology*	31	23.0%
	Rehabilitation	2	1.5%
	ALL UNITS	135	
Sub-acute (Dementia)	GEM*	30	60.0%
	GEM Dementia	20	40.0%
	ALL UNITS	50	

* Data collectors from each health service self-reported clinical units and wards

Figure 5. Current Clinical Unit, Across All Ward Types



*"Other" includes Endocrinology, Respiratory, Cardiology, Gastroenterology, Renal, and Stroke.

4.1.5 Usual Accommodation Status

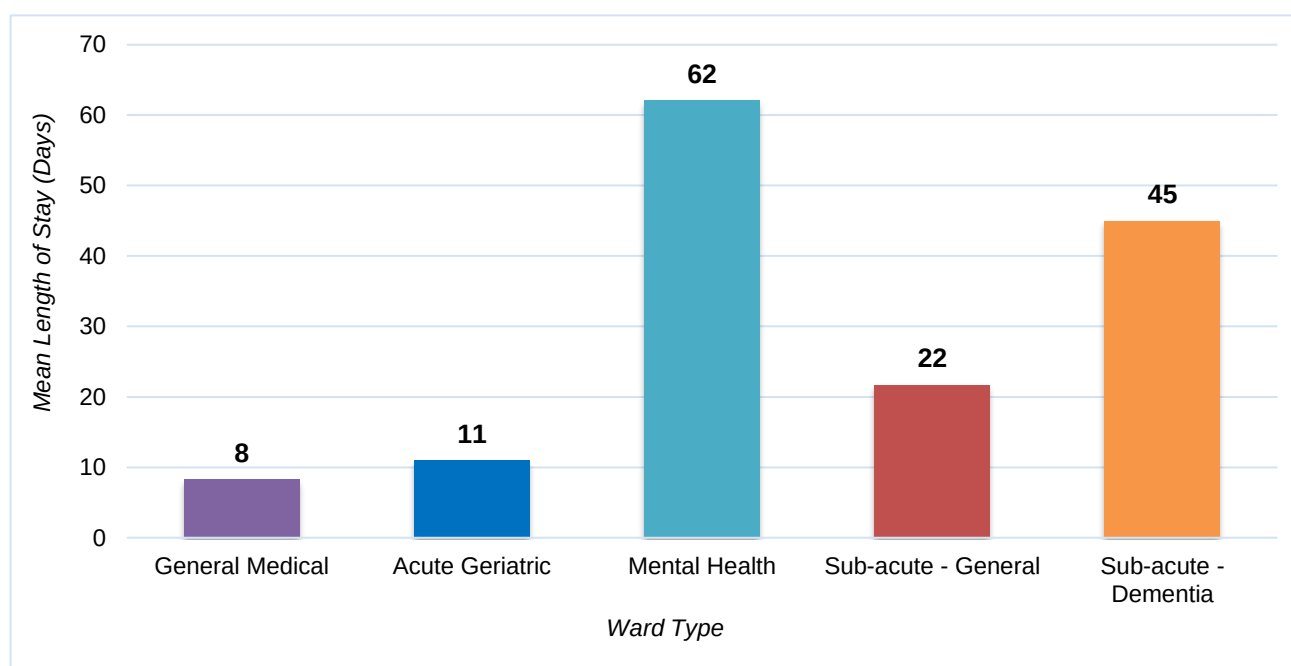
Almost 90% of the sample included in the point prevalence study lived in a private residence prior to admission with approximately 56% of patients ($n=244$) living in a private residence with others (Table 3). The next most common pre-admission accommodation was a private residence, living alone (33%, $n=146$), followed by Residential Aged Care (8%, $n=35$).

4.1.6 Current Length of Stay

The mean for the current length of stay (LOS) at the time of the audit for the patients varied across ward type and is displayed in Table 3 and Figure 6. Patients who had been in hospital for a period beyond 6 months (182 days) were considered outliers and excluded ($n=5$ patients). Key LOS findings according to care type included:

- General medical wards: lowest mean LOS with 8 days (s.d. 8.8) and a range of 5 hours to 69 days
- Sub-acute (dementia) wards: mean LOS of 45 days (s.d. 34.0) and a range of 8 days to 154 days
- Mental health wards: higher mean LOS - 62 days (s.d. 45.0) with a range of 20 hours to 175 days

Figure 6. Mean LOS, by Ward Type



4.2 Medical Condition/s

4.2.1 Primary Diagnoses for Admission

There were approximately 170 different primary diagnosis types for hospital admission identified across the sample. The range of diagnoses for admission was most varied for general medical wards and included patients admitted for:

- Urinary tract infections;
- Pneumonia;
- Hyperglycemia; and
- Heart failure.

Fifteen patients from general medical wards were listed as having delirium (8.2%), in addition to 10 patients with dementia +/- BPSD (5.5%). Acute geriatric wards were similar, with a range of primary diagnoses for admission including heart failure, falls (+/- fracture), and respiratory conditions. These wards also had patients admitted with coded primary diagnoses including delirium, dementia (+/- BPSD), depression, and cognitive impairment. Sub-acute (general) wards also had patients admitted for a variety of reasons e.g. due to falls (+/- fracture), delirium, cellulitis, stroke, or respiratory conditions however the most common primary diagnosis for admission for patients in sub-acute (dementia) wards was dementia (+/- BPSD), delirium, functional or cognitive decline, or due to a fall (+/- fracture). Patients in mental health wards were admitted with four coded primary diagnoses: dementia (+/- BPSD); cognitive impairment; depression; or schizophrenia.

Of the 437 patients, 11% of patients ($n=49$) had dementia listed as their primary diagnosis on admission; 9% of patients ($n=40$) had delirium listed as their primary diagnosis on admission.

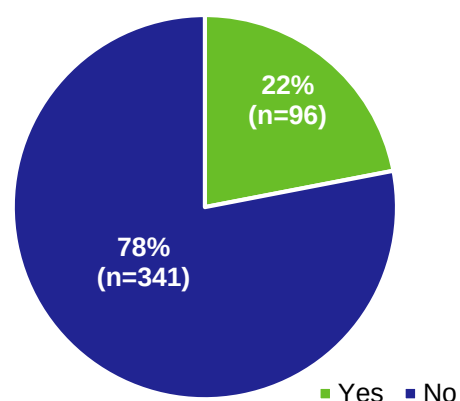
4.2.2 Formal Dementia Diagnosis

Across the entire sample, 22% of patients ($n=96$) had a formal diagnosis of dementia recorded in the medical record (Table 5, Figure 7). Sub-acute (dementia) wards had the highest proportion of patients with a formal diagnosis of dementia ($n=32$, 63%). Acute geriatric and general medical wards had 17% ($n=75$) and 13% ($n=58$) respectively of patients with a formal diagnosis of dementia. No patients under the age of 50 years had a dementia diagnosis in the sample.

Table 5. Proportion of Patients with a Formal Diagnosis of Dementia, by Ward Type

Ward Type	Dementia Diagnosis	
	n	%
General Medical	25	13%
Acute Geriatric	10	17%
Mental Health	3	21%
Sub-acute (General)	26	19%
Sub-acute (Dementia)	32	63%
TOTAL	96	22%

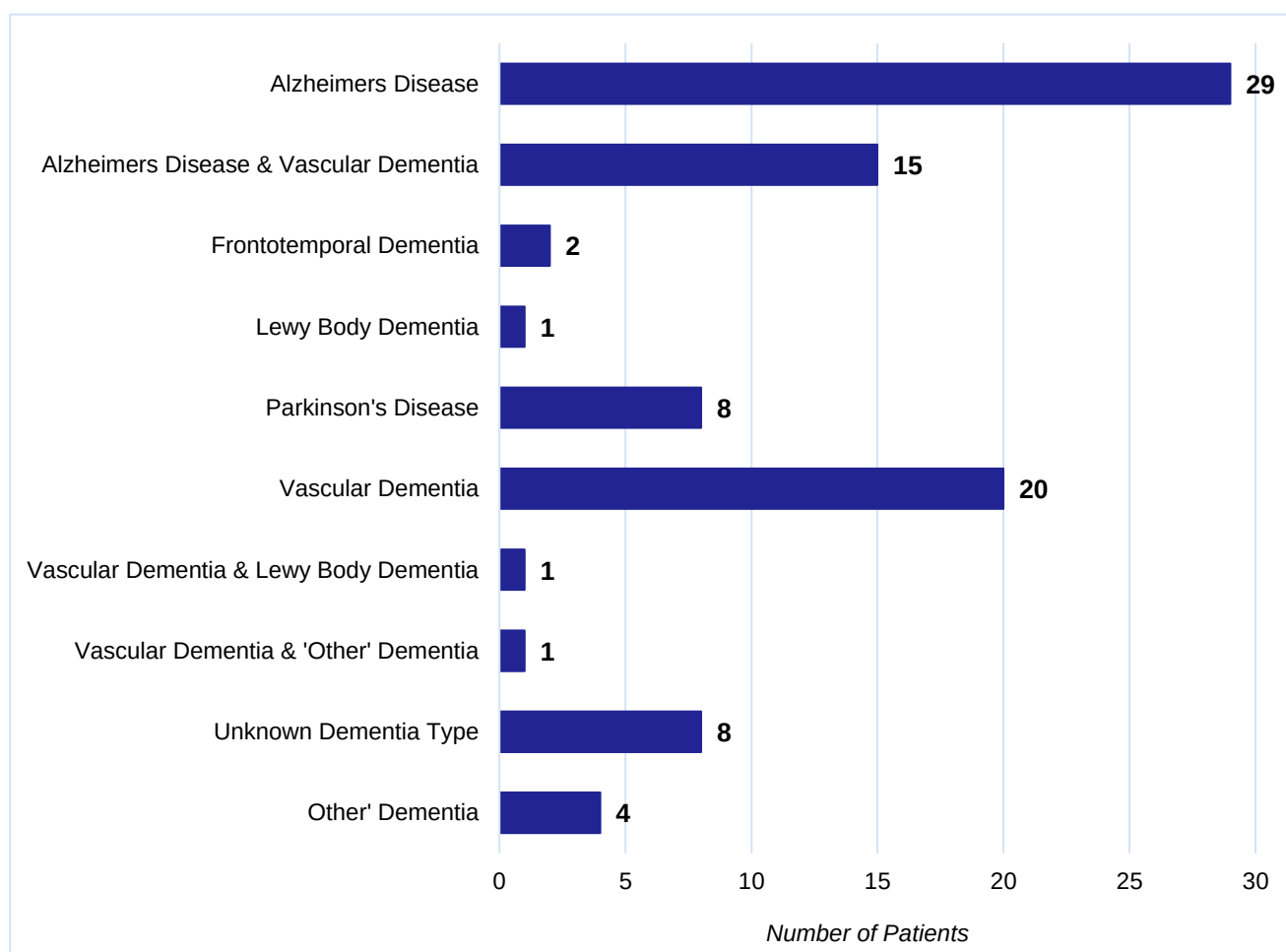
Figure 7. Proportion of Patients with a Dementia Diagnosis, All Ward Types



Dementia Sub-Types (Formal Diagnosis)

Of the 96 individuals who were formally diagnosed with dementia, various sub-types were recorded (Figure 8). Some patients had more than one sub-type e.g., Alzheimer's Disease (AD) and Vascular Dementia. The most common sub-type was AD, accounting for 30% ($n=29$) of all patients with a formal dementia diagnosis, followed by Vascular Dementia, which was recorded in approximately 21% of patients ($n=20$) with a formal diagnosis of dementia. 'Other' sub-types of dementia included alcohol-related dementia.

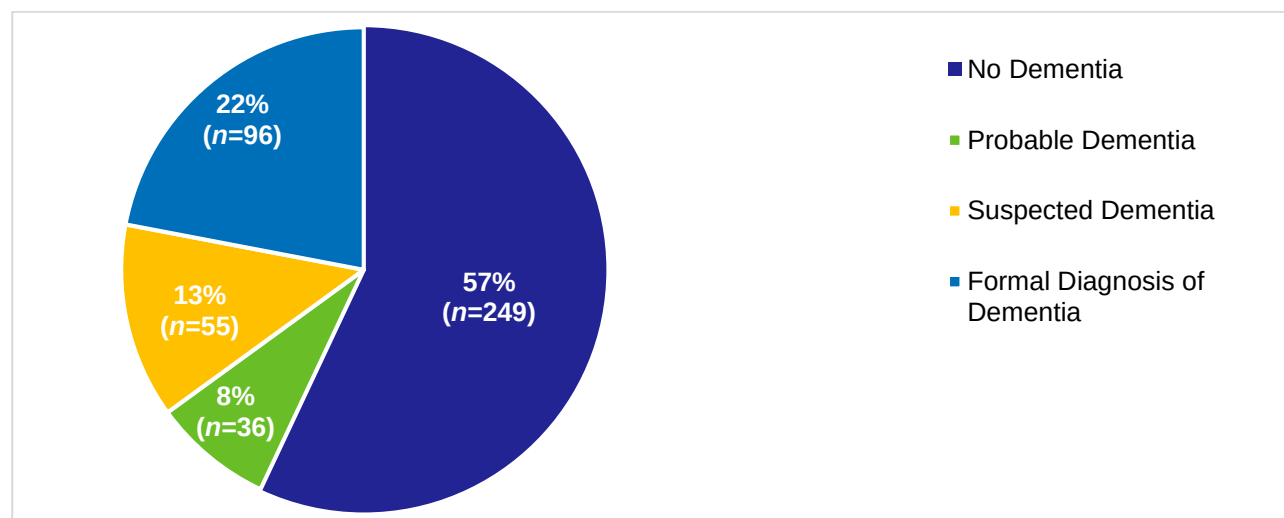
Figure 8. Dementia Diagnosis Sub-types ($n=96$)



4.2.3 Sufficient Evidence to Support a Dementia Diagnosis

There was no evidence to support a diagnosis of dementia in 57% of patients ($n=249$) in the study (Figure 9). However, 21% of patients were categorised as having either probable dementia (8%, $n=36$), or suspected dementia (13%, $n=55$). When combined with those who had a formal diagnosis of dementia ($n=96$, 22%), the total proportion of patients with sufficient evidence to support a dementia diagnosis was 43% (Figure 9).

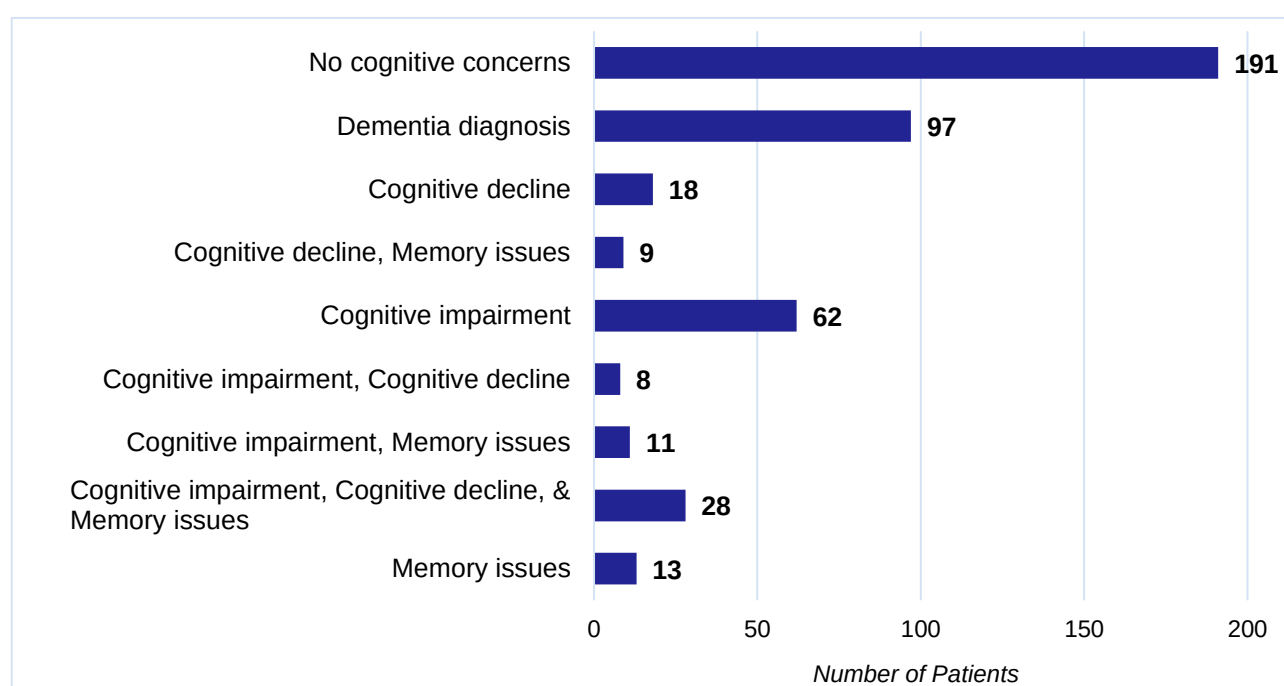
Figure 9. Presence of Sufficient Evidence to Support a Diagnosis of Dementia



4.2.4 Cognitive Concerns

Among the 341 patients without a formal diagnosis of dementia (78% of the sample), cognitive concerns were documented for 149 patients (44%), which included issues such as cognitive impairment, or memory problems (Figure 10). Fifty-six patients (16%) had a combination of cognitive concerns (e.g. cognitive decline and memory issues). Of those identified as having suspected or probable dementia ($n=91$), 96% had cognitive concerns documented. Only five patients with suspected or probable dementia had no recorded cognitive concerns, and five patients under the age of 50 years had cognitive concerns listed, with cognitive impairment the most common issue.

Figure 10. Identified Cognitive Concerns ($n=341$)



4.2.5 Co-existing Concerns Potentially Impacting Cognition and/or Behaviour

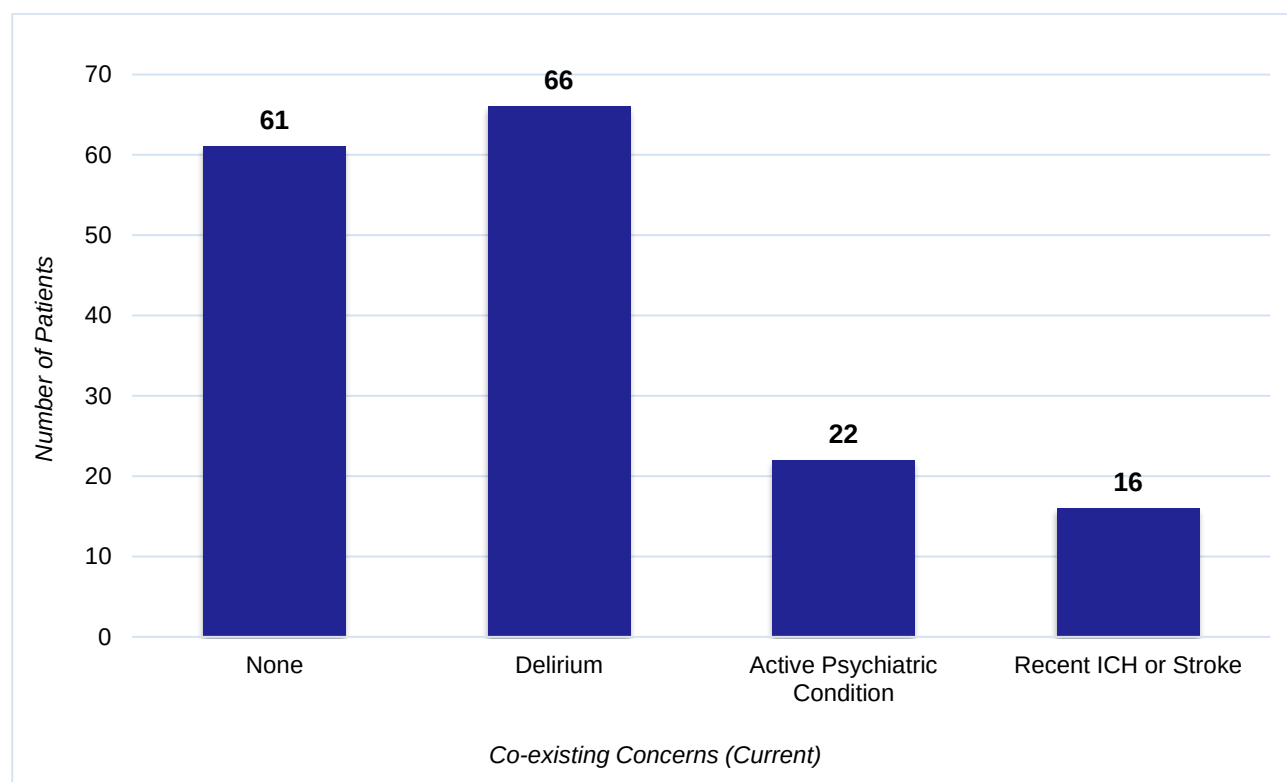
Data collectors were also asked to identify if patients with suspected, probable, diagnosed dementia had any additional documented co-existing conditions or concerns that may be impacting their current cognition and/or behaviour. Two health services did not answer this question, therefore their samples ($n=31$) were omitted from the analysis.

Of the 165 patients identified as having suspected, probably or diagnosed dementia (Figure 11):

- 61 patients (37%) had no co-existing conditions or concerns;
- 66 patients (40%) were identified as having current delirium relevant to this admission;
- 22 patients (13%) were identified as having current active psychiatric condition; and
- 16 patients (10%) had had a recent Intracerebral haemorrhage (ICH) or stroke.

Nine patients had two co-existing conditions potentially impacting cognition and/or behaviour – of these, four (4) were listed as having a recent ICH or stroke in addition to current delirium; four (4) were listed as having an active psychiatric condition in addition to current delirium, and one (1) was listed as having an active psychiatric condition alongside a recent ICH or stroke.

Figure 11. Co-existing Current Concerns for Patients with Diagnosed, Probable, or Suspected Dementia ($n=165$)



4.3 Documented Challenging Behaviours

As part of the point prevalence survey, data collectors were asked to use entries documented in the medical record to rate the severity of any observed symptoms of agitation in patients using the PAS¹ according to the four behavioural domains: aberrant vocalisation, motor agitation, aggressiveness, and resisting care. Following this, data collectors were then required to provide details of the documented responses implemented to manage patient behaviour.

This aspect of the point prevalence survey was only completed for patients who had either a diagnosis of dementia ($n=96$) or probable/suspected dementia ($n=91$), totalling 187 patients.

4.3.1 Aberrant Vocalisation

Almost half (44%, $n=82$) of patients with diagnosis of dementia or suspected/probable dementia demonstrated a form of aberrant vocalisation as per the PAS (Figure 12, Table 6). Of these, 57 (70%) demonstrated aberrant vocalisation that was disruptive to some extent, with approximately 5 (6%) demonstrating extreme aberrant vocalisation that was highly disruptive. Examples documented included “racial slurs” and “offensive comments”.

Table 6. Aberrant Vocalisation Observed during Current Admission ($n=187$)

Level of Aberrant Vocalisation	N	%
Not present	105	56.1%
Low volume, not disruptive, including crying (<i>least severe</i>)	25	13.4%
Louder than conversational, mildly disruptive, redirectable	22	11.8%
Loud, disruptive, difficult to redirect	30	16.0%
Extremely loud, highly disruptive, unable to redirect (<i>most severe</i>)	5	2.7%

4.3.2 Motor Agitation

Close to half (49%, $n=92$) of patients were also rated as exhibiting motor agitation as per the PAS (Figure 12, Table 7). Of these, 61 (66%) demonstrated motor agitation that was intrusive or disruptive to some extent, with 7 (8%) demonstrating intense movements and were unable to be redirected verbally. Examples given by data collectors included “ramming others with a 4WF”, “clapping” and “banging on bed rails”.

Table 7. Motor Agitation Observed during Current Admission ($n=187$)

Level of Motor Agitation	N	%
Not present	95	50.8%
Pacing or moving about in chair at normal rate (seeking comfort/looking for spouse/purposeless movements) (<i>least severe</i>)	31	16.6%
Increased rate of movements, mildly intrusive, easily redirectable	21	11.2%
Rapid movements, moderately intrusive or disruptive, difficult to redirect	33	17.6%
Intense movements, extremely intrusive or disruptive, not redirectable verbally (<i>most severe</i>)	7	3.7%

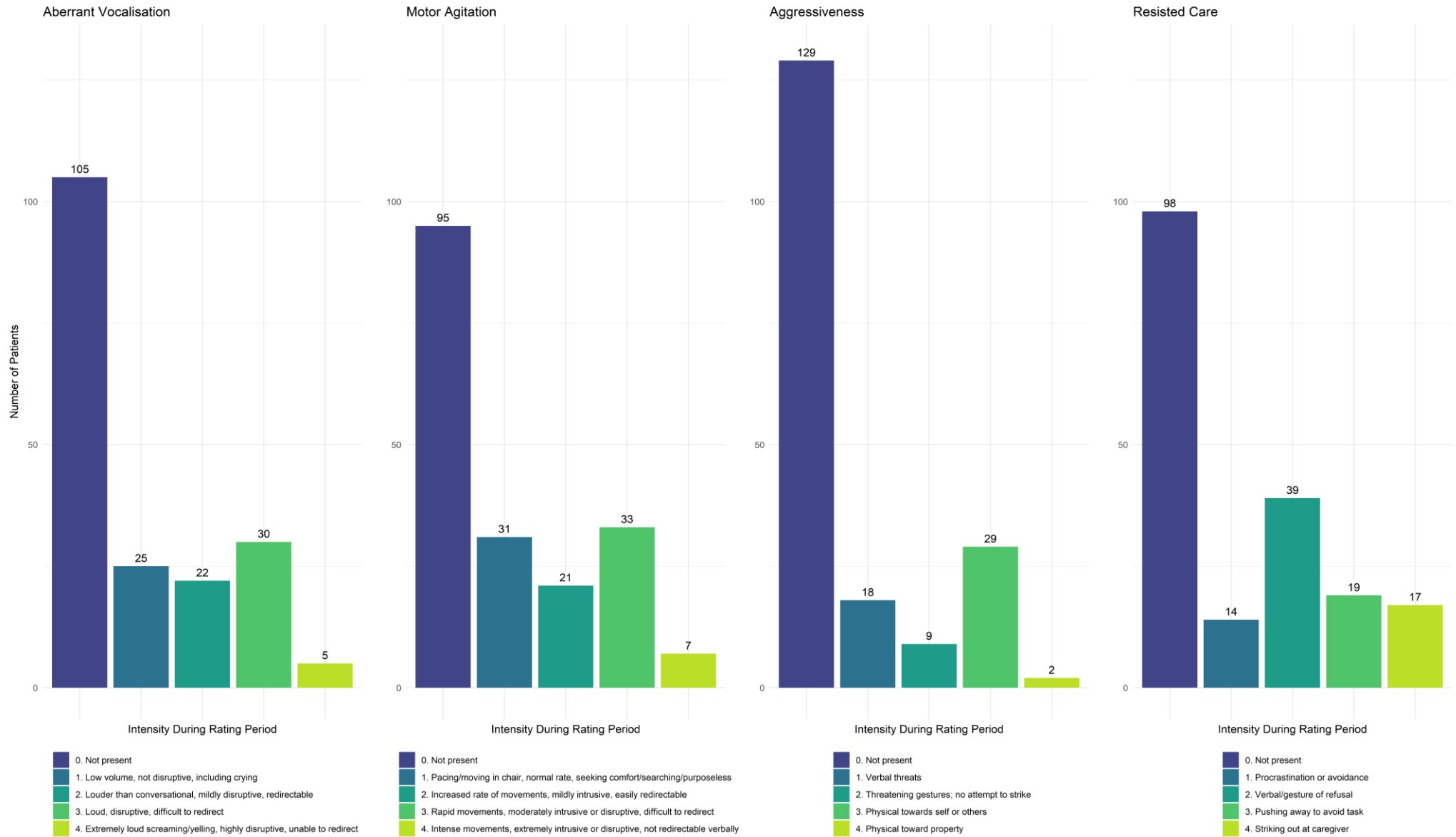
4.3.3 Aggression

Around one-third of patients (31%, $n=58$) had been aggressive in accordance with the PAS descriptions (Figure 12, Table 8). Of these, 31 (53%) of these demonstrated aggression that was physical, either towards property or an individual (self or others). Documented examples included patients “seeking out weapons”, “throwing objects”, “spitting”, and “pushing furniture”.

Table 8. Aggression Observed during Current Admission ($n=187$)

Level of Aggression	N	%
Not present	129	69.0%
Verbal threats (<i>least severe</i>)	18	9.6%
Threatening gestures; no attempt to strike	9	4.8%
Physical towards self or others	29	15.5%
Physical toward property (<i>most severe</i>)	2	1.1%

Figure 12. Pittsburgh Agitation Scale (PAS) Ratings, (n=187, sample with a either a diagnosis of dementia or suspected/probable dementia)



4.3.4 Resisting Care

Again, almost half of patients (48%, $n=89$) were rated as having resisted care based on the PAS (Figure 12, Table 9). Of these, 36 (40%) resisted care in a physical manner, either pushing away to avoid the task (10.2%, $n=19$), or striking out at a caregiver (9.1%, $n=17$). Examples documented included patients “pinching staff” and “throwing objects” in response to attempted care provision.

Table 9. Resistance to Care Observed during Current Admission ($n=187$)

Levels of Resisting Care	N	%
Not present	98	52.4%
Procrastination or avoidance (<i>least severe</i>)	14	7.5%
Verbal/gesture of refusal	39	20.9%
Pushing away to avoid task	19	10.2%
Striking out at caregiver (<i>most severe</i>)	17	9.1%

Care Activities Resisted during Current Admission

Of the 89 patients who resisted care, the most common resisted activities were washing (52.8%, $n=47$), and dressing (50.6%, $n=45$) (Table 10). Fifty-seven patients (64%) resisted more than one care activity.

Table 10. Care Activities Resisted during Current Admission ($n=89$)

Care Activity Resisted	N	%
Washing	47	52.8%
Dressing	45	50.6%
Eating	41	46.0%
Medication	36	40.4%
Other	26	29.2%

There were a wide range of care activities that were resisted by patients as listed by the data collectors under the “other” category. These included:

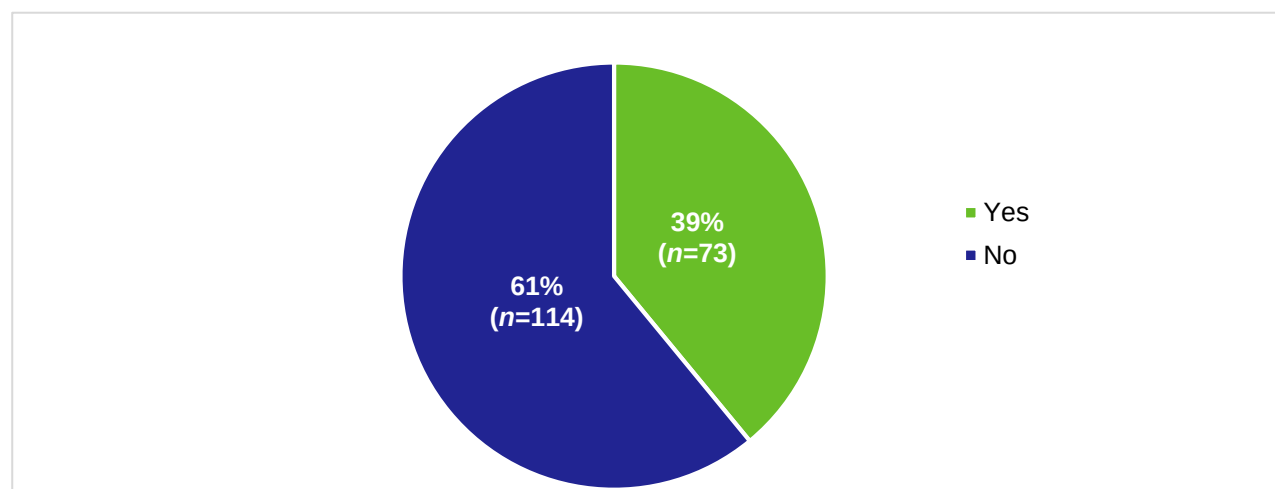
- Blood tests;
- Blood sugar level checks;
- Assessment of vital signs;
- Repositioning; and
- Wound dressing changes.

However, the most common category of care activity (outside of those listed in Table 10), related to continence care. There were ten examples (11% of the sample) of continence care that had been refused by patients, including refusal to wear incontinence pads.

4.4 Response to Challenging Behaviours

Of the 187 patients with diagnosed, probable, or suspected dementia, over a third (39%, $n=73$) required a deliberate response to challenging behaviours (Figure 13).

Figure 13. Response to Behaviour Required during Current Admission



4.4.1 Required Response/s

Within the 73 patients who required a response to challenging behaviours during their current admission to-date, 61 (83.6%, $n=61$) were administered PRN medication (Table 11). Over one-third of patients (38%, $n=28$) required multiple responses to challenging behaviour/s.

Table 11. Type of Response to Challenging Behaviours Required during Current Admission ($n=73$)

Type of Response to Challenging Behaviours	N	%
Restraint	4	5.5%
PRN Medication	61	83.6%
Seclusion	6	8.2%
Other	33	45.2%

Regarding “other” responses to challenging behaviours, data collectors listed several documented common alternatives including:

- Forms of behavioural support plans (including “basic” behavioural strategies); and
- 1:1 specialling (by either a nurse, security officer, or a volunteer).

In addition, music therapy, verbal reassurance and/or redirection, and code greys were listed as additional or alternative responses to challenging behaviour.

4.5 Brodaty Tiers

The final question of the survey asked data collectors to estimate from the documented information in the medical record (as best they could) the severity of BPSD for each patient based on the Brodaty Tiers (representing a 7-tiered model of management of BPSD). The purpose of this was to estimate the prevalence of different severities of BPSD.

Of the 187 patients that were classified as having suspected, probable, or a diagnosis of dementia, 33 (18%) were estimated as demonstrating dementia with severe, very severe or extreme BPSD, i.e. rated as Tier 5, 6 or 7 on the Brodaty Tiers (Figure 14, Table 12).

Figure 14. Estimation of Individual Patient BPSD Severity According to Brodaty Tiers (n=187)

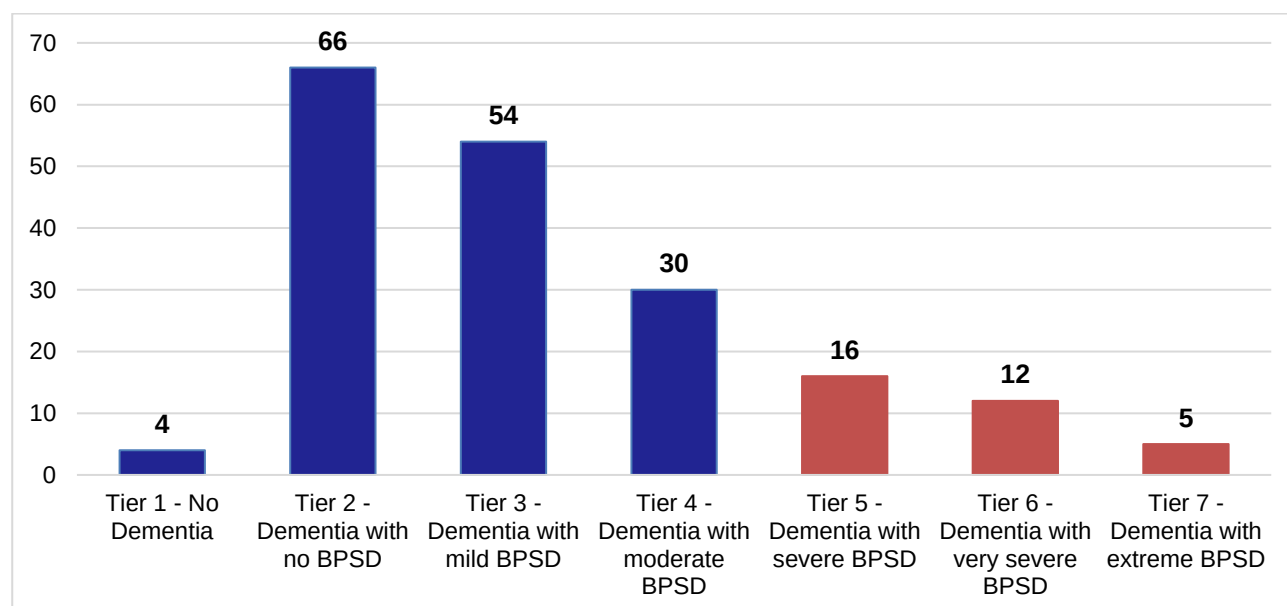


Table 12. Estimation of Individual Patient BPSD Severity According to Brodaty Tiers (n=187)

Brodaty Tier Level	N	%
Tier 7 – Dementia with extreme BPSD	5	2.7%
Tier 6 – Dementia with very severe BPSD	12	6.4%
Tier 5 – Dementia with severe BPSD	16	8.6%
Tier 4 – Dementia with moderate BPSD	30	16.0%
Tier 3 – Dementia with mild BPSD	54	28.9%
Tier 2 – Dementia with no BPSD	66	35.3%
Tier 1 – No Dementia	4	2.1%

Four patients were rated as having “no dementia” on the Brodaty Tiers. These patients were initially suggested by data collectors to have suspected or probable dementia, with their subsequent responses included within this sample cohort however, upon review of the Brodaty Tier descriptions, they were re-assessed as having “no dementia”.

Sub-acute (dementia) wards had the highest prevalence of patients estimated as ‘severe’, ‘very severe’ or ‘extreme’ BPSD, with over one-third (38%, n=15) of patients being rated at Brodaty Tier 5 or above. Smaller proportions of patients estimated as having severe’, ‘very severe’ or ‘extreme’ BPSD were also present in all other ward types.

Figure 15. Estimation of Individual Patient BPSD According to Brodaty Tiers in Acute Wards

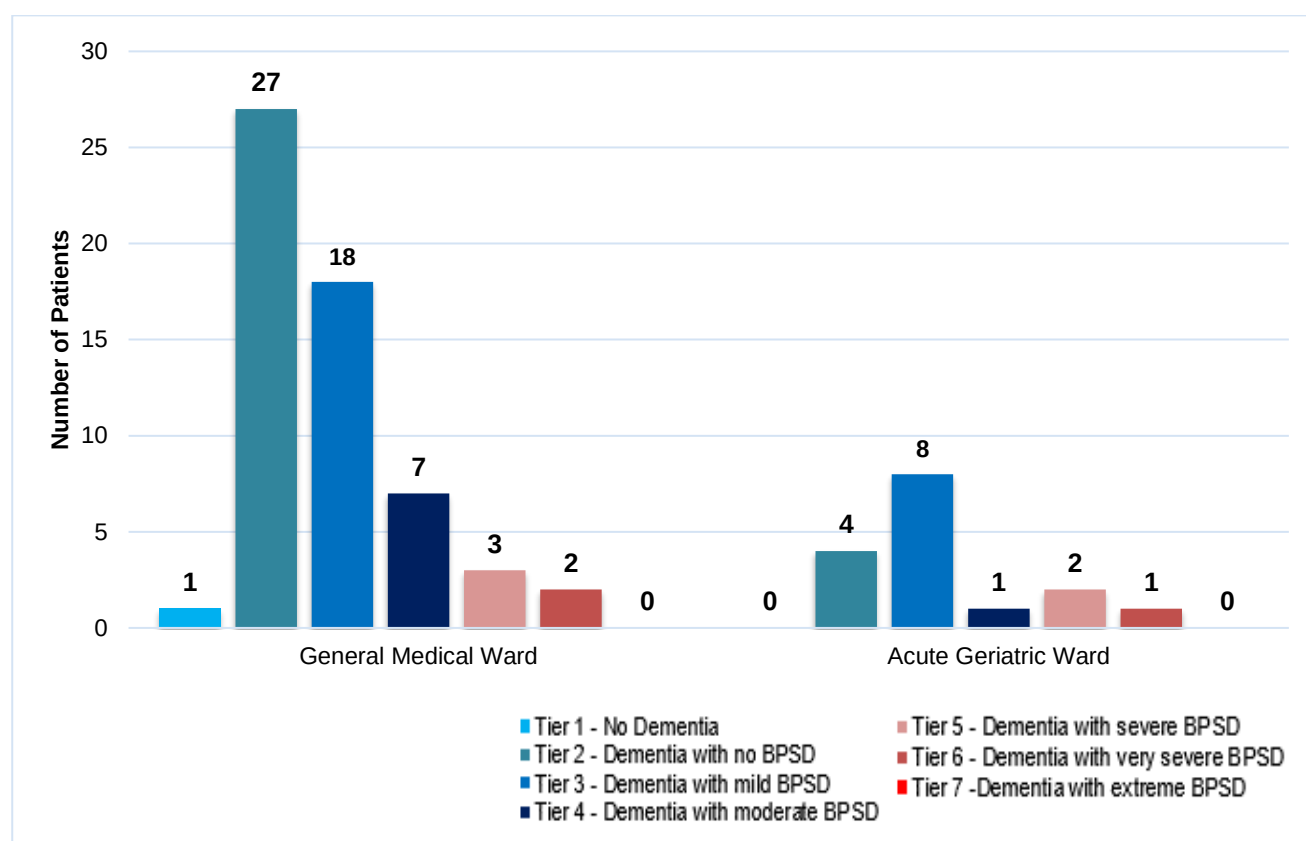
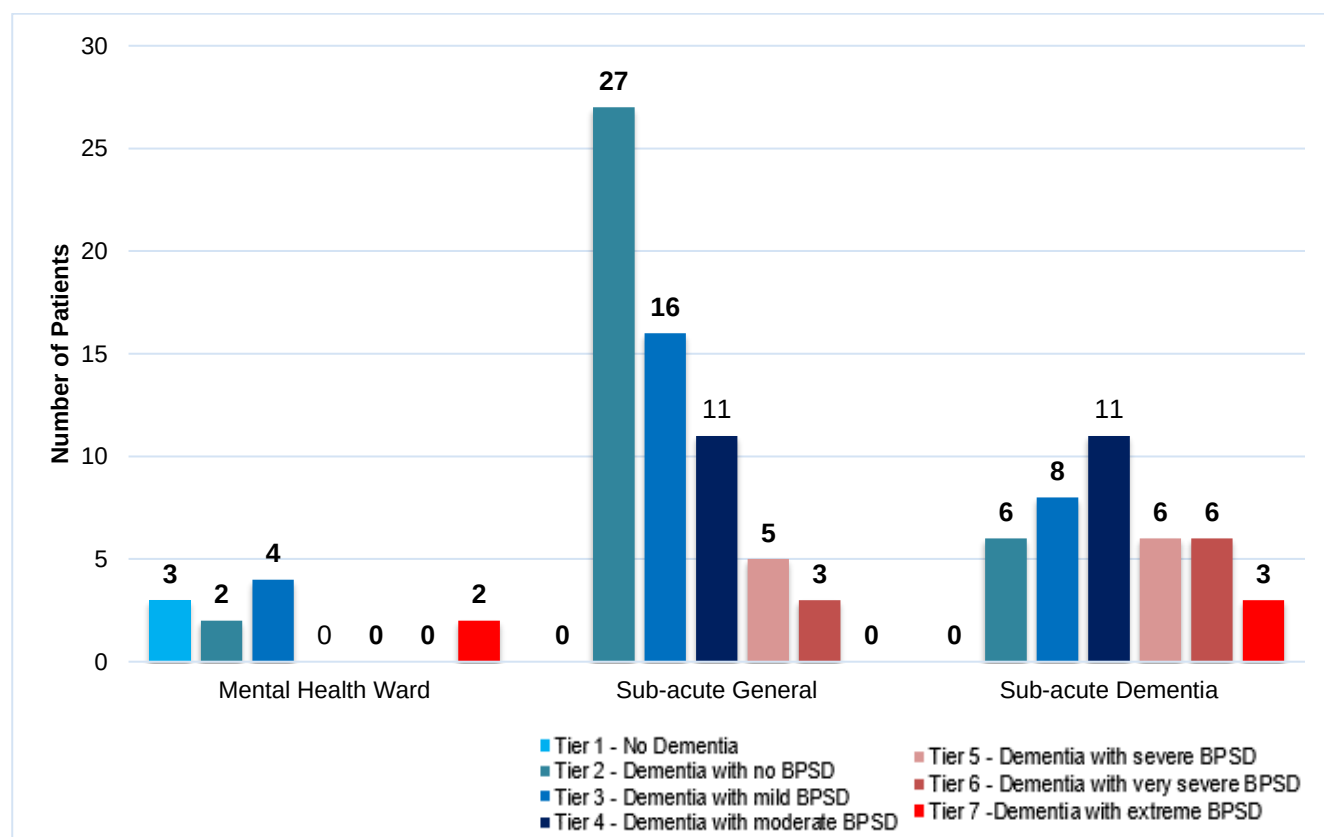


Figure 16. Estimation of Individual Patient BPSD According to Brodaty Tiers in Sub-acute Wards



5. DISCUSSION

This study of nine health services is the first time that collective information regarding the prevalence of inpatients with dementia and symptoms of agitation have been documented in Victoria. The findings include information about the prevalence of dementia, and dementia with BPSD, in 16 selected wards across the nine participating health services. Of the sample of 437 patients (which had a mean age of 78 years and was 56% female), 22% had dementia listed as their primary diagnosis on admission. In addition to those who had a diagnosis of dementia, there were 91 patients (21%) across hospital wards and/or units with sufficient evidence to support a diagnosis of dementia. Whilst health service representatives self-selected wards and/or units which were of particular interest to them, the findings did identify a substantial number (187 patients, 43% of the sample) of individuals with diagnosed, suspected or probable dementia across a variety of ward settings and clinical unit types. These patients were admitted to both acute and sub-acute wards.

This significant number of patients presenting with dementia, or symptoms indicating a suspected/probable diagnosis of dementia, supports the ongoing hospital-wide concern in Victorian health services about the need for improving models of care and organisation-wide management strategies for patients with dementia and those presenting with behavioural and psychological symptoms, particularly agitation and aggression.

5.1 Patient Population

The majority of the wards that were self-selected by health services for inclusion in the point prevalence study were either general medical ($n=4$) or sub-acute (general) wards ($n=5$). Given that this activity was as part of a wider project aimed at improving the management of patients with severe BPSD in hospitals, this provides a rare opportunity to identify and analyse the prevalence of dementia and BPSD across the inpatient journey including acute and sub-acute care. These wards may have different models of care regarding the management of people with dementia and BPSD compared other Victorian health services and dementia or aged mental health specific wards. This will be explored further in future research activities as part of the wider project, including a state-wide benchmarking survey.

5.1.1 Age and Gender

Regarding the age of patients included in the sample, the self-selection by health service representatives of particular wards or units may have skewed the mean age of the sample (78 years, s.d. 12.3). However, the Australian Institute of Health and Welfare (AIHW) reports that the number of hospitalisations for older adults due to dementia (2020-2021) typically increase with age up to 80-84 years.⁶ The proportion of patients with a diagnosis of dementia may be slightly higher in our sample than the hospital population generally.

There was a greater proportion of female patients (56%) present on the nominated wards/units during point prevalence data collection. This is consistent with the higher number of women in older age cohorts in Australia with the AIHW reporting that, in 2020, over half (53%) of older Australians (aged 65 and over) were women.⁷

5.1.2 Ward Type vs. Clinical Unit

The variation in clinical units identified within the acute care wards surveyed (general medicine = 11 wards and acute geriatrics = 6 wards) also reinforces anecdotal reports regarding the high frequency of “outliers” or “boarders” in hospital acute inpatient settings across Victoria. For example, of the 181 patients admitted to a general medical ward on the day of data collection, 33 patients (18%) were under clinical units other than general medicine. The practice of placing patients on wards that are not specifically designated or designed to provide the type of care that they require is increasing, often driven by hospital pressures and targets as opposed to clinical need. Research has shown that outlying patients experience longer LOS, which is frequently associated with increased adverse events and higher healthcare costs,⁸ compared with patients who are treated in appropriate speciality wards. The AIHW reported that the average length of stay for older adults hospitalised due to dementia was 13 days (five times higher than the average LOS for all hospitalisations), which is far less than the average of 30 days found by this point prevalence study.⁹

Fragmented care delivery and moving patients between wards (e.g. from the 'outlier' to the 'home' ward when a suitable bed becomes available) promotes the development of delirium and increases the risk of inadequate or inappropriate quality care which is of particular concern for older patients with dementia.¹⁰

5.2 Dementia Prevalence

People with dementia and BPSD in hospital present with complex symptoms that are frequently exacerbated by an unfamiliar and distressing environment,¹¹ acute medical illness and the potential co-morbidity of delirium.¹² While these patients are familiar in sub-acute service settings, dementia-specific services commonly available in GEM and/or dementia-specific GEM wards, the findings from this study demonstrate that these patients receive care across numerous ward types including acute service units in Victorian health services. The proportion of patients with a formal diagnosis of dementia in the acute wards identified within the point prevalence data (general medical 13% and acute geriatrics 17%) may dispel this myth.

5.2.1 Diagnosed, Probable or Suspected

The percentage of patients with a dementia diagnosis across the self-nominated wards audited was 22% however, when considering those assessed as having probable or suspected dementia by data collectors who have clinical expertise in screening and assessment of dementia, this proportion rose to 43% ($n=187$). The high proportion of patients identified as having suspected or probable dementia, without a formal diagnosis, is a strong indicator of an opportunity for hospital staff to screen for, assess and diagnose dementia when older adults are admitted to hospital, particularly those who present with cognitive concerns. It also suggests that organisation-wide models of care which support the care of patients with dementia, including staff education and training, are critical.

5.2.2 Presence of BPSD

Presence and severity of BPSD for hospital inpatients with suspected, probable, or a diagnosis of dementia included in the sample was estimated by data collectors using Brodaty's Seven-tiered Model of Management of BPSD.² The model divides people into seven tiers in ascending order of symptom severity and decreasing levels of prevalence — from people with no dementia (Tier 1) to patients with dementia and extreme BPSD who may require an intensive specialised care unit (Tier 7).²

Although the Brodaty Tiers was initially designed to provide the basis for comprehensive planning of service delivery, the prevalence estimates associated with each tier are considered representative of the different severities of BPSD that exist across the general population of people with dementia.² Within the current study, however, the prevalence of people with dementia in hospital who were identified as demonstrating 'very severe BPSD' (Tier 6) and 'extreme BPSD' (Tier 7) was much higher than that outlined in the theoretical model (Tier 6: 6.4% point prevalence study vs. <1%; Tier 7: 2.7% point prevalence study vs. 'rare').

5.2.3 Co-existing Delirium

While it has been well documented that BPSD in hospital inpatients is frequently exacerbated by acute medical illness and the impact of the unfamiliar and potentially distressing hospital environment,¹² another possible explanation for this is the associated presence of delirium. Delirium is a temporary syndrome of acute brain dysfunction characterized by inattention and other mental status impairments that is associated with significant adverse physical, cognitive and psychological outcomes and increased costs to healthcare services.^{11,13} Reported to affect at least 20% of older inpatients, delirium has well-documented adverse outcomes including increased mortality, LOS and institutionalisation.^{11,13} In addition, research has shown that delirium in the presence of the pathologic processes of dementia is associated with accelerated cognitive decline beyond that expected for delirium or the pathologic process itself.¹¹ Of the patients identified as having suspected, probably or diagnosed dementia within the current study, over one third (40%) were identified as having a co-existing delirium relevant to this admission.

5.3 Aggressive, Abusive or Threatening Behaviours

This study also aimed to determine the percentage of patients on the self-nominated wards with dementia showing aggressive, abusive, or threatening behaviour. Using the PAS, data collectors were asked to assess and rate the documented challenging behaviours of patients with suspected, probable or diagnosed dementia during their admission to-date. Within this patient population, it was identified that 44% of patients had demonstrated aberrant vocalisation, while 49% had displayed motor agitation, 48% had resisted care in some form and 31% had been aggressive.

Physical aggression is an identified feature of Tier 5 ('severe' BPSD), Tier 6 ('very severe' BPSD) and Tier 7 ('extreme' BPSD) levels in the Brodaty Model. Within our sample, 15.5% of patients with suspected, probable or diagnosed dementia demonstrated physical aggression that was directed at others or at themselves and 1.1% involved aggression towards property. Compounding this is that 19% of patients who were reported to have resisted care did so physically (either pushing away to avoid task or striking out at caregiver). Aggression generally occurs in the later stages of dementia (particularly as the person's ability to communicate and influence their environment diminishes¹⁴) however, as discussed by Brodaty, the most extreme behaviours are generally seen in men under 70 years of age who are very strong and have been so violent that they have harmed other patients/residents or staff.² Incidents of aggression in patients with BPSD are often unpredictable and unprovoked, making them very difficult to manage. They can have a significant impact on safety in the inpatient hospital setting, presenting a high risk to other patients, staff, carers and the people with dementia themselves.^{3,12} For hospital staff, research has shown a link between violence at work and depression, secondary traumatic stress, burnout and compassion fatigue which can also have a negative impact on patient care.³ Other threatening behaviours observed in this point prevalence study that were rated as 'severe' according to the PAS included: 3% of patients demonstrating extremely loud, highly disruptive aberrant vocalisation (unable to be redirected) and 4% of patients displaying intense movements that were extremely intrusive or disruptive and not redirectable verbally. These align with Tier 5 ('severe' BPSD) in the Brodaty Model of Management.

Over one-third of patients (39%) with suspected, probable or diagnosed dementia in this study sample required a response to their challenging behaviours. The most common response reported was administering PRN medication, which occurred in over 80% of these patients. This response was employed more than twice as often as other non-pharmacological responses (e.g. behavioural support plans).

5.4 Impact of Co-morbidities

Dementia is known to have a complex inter-relationship with a number of specific medical conditions that commonly present in older people who require hospitalisation. As outlined previously, not only has delirium been associated with an acceleration in cognitive decline in individuals with dementia, but dementia itself is an independent risk factor for developing delirium.¹⁵ Evidence reveals that people with dementia who develop delirium have longer lengths of hospital stays, greater cognitive and functional decline, and a higher risk of institutionalisation and mortality than people with dementia who are hospitalised and do not develop delirium.¹⁶

In addition to the current study finding of 40% of patients with suspected, probable, or diagnosed dementia identified as having co-existing delirium, the presence of other co-morbidities that may have impacted an individual patients' cognition and/or behaviour included: active psychiatric conditions (13%) and a recent ICH or stroke (10%). This is supported by research which has shown an increased risk of stroke in people with AD, with 16 - 29% people with dementia having already experienced a stroke.¹⁷

While the specific details associated with these co-morbidities were not explored as part of this project activity, multiple co-morbidities were also reported to be present in 5% of patients – 2% of patients had experienced a recent ICH or stroke in addition to current delirium; 2% were listed as having an active psychological condition in addition to current delirium, and 1% had an active psychiatric condition alongside a recent ICH or stroke.

5.5 Limitations

The methodology used for the point prevalence study involved data collection on one nominated day (a “point” in time) from inpatient acute and sub-acute wards that were self-selected by the data collectors. Although it is preferable for a point prevalence study to have all sites collect data for the same nominated time, delays due to both COVID pandemic related issues and research governance issues meant that each health service collected data on different nominated days.

There are also some limitations associated with the survey methodology that may potentially impact the accuracy and interpretation of the information obtained:

1. **Self-reporting Bias:** The findings presented in this report were obtained via self-report. This type of methodology introduces a number of biases which may affect the accuracy of the data, including social desirability bias where the data collectors involved in data collection provide certain responses in order to make a good impression rather than reporting accurate information.
2. **Self-selection Bias:** The wards/patients audited as part of the point prevalence survey were self-selected by the data collectors who were experienced clinicians within their respective health services. It is therefore possible that these wards were selected due to prior knowledge/experience that a high percentage of patients had dementia and/or exhibited challenging behaviours. This may have resulted in an increased prevalence of patients with diagnosed, probable or suspected dementia compared with the overall inpatient hospital setting.
3. **Non-response Bias:** Given that data collectors had full control over who was included in the point prevalence survey, and which questions were completed, situations may have occurred in which data collectors chose not to include certain responses. In addition, responses may not have been provided due to difficulty in finding the required information in the patient’s medical record.
4. **Question Bias:** Despite careful and considered survey design, involving collaboration with the Victorian Sub-acute Executive Peak Body, some questions may have unintentionally been leading, ambiguous and/or open to (mis)interpretation by survey respondents. In addition, anecdotally, a number of data collectors reported that they had no knowledge or experience regarding use of the Brodaty Model and yet were asked to determine the tier as part of the data collection process.

Other possible limitations of the study that should be considered include:

- Background/experience of data collectors and the impact of their previous relationships with patients i.e. if they were familiar with a patient who was included in the audit, how much did this influence their responses as opposed to a patient who they were unfamiliar with, and therefore needed to rely purely on the information contained within their medical record.
- Data collectors’ estimation of suspected/probable dementia i.e. basis of estimation
- Some patients may be very early into their admission therefore they hadn’t been fully screened and/or assessed and/or hadn’t had enough time to demonstrate signs and symptoms of dementia and/or challenging behaviours.
- Difficulty attributing aggressive, abusive or threatening behaviours to dementia alone i.e. what was the impact of other co-morbidities including delirium etc.
- No or minimal representation from ED, specialty medicine and general/specialty surgical wards in the dataset (although some patients from these clinical units/specialties were ‘outliers’ on the wards which were included in the point prevalence activity).
- No data collected regarding primary language spoken and the potential impact this additional communication barrier has on challenging behaviours.

6. CONCLUSION

Dementia is recognised as a significant and growing health and aged care issue in Australia. Although hospitals are known to be challenging places for people with dementia, in particular those with BPSD, there is limited information available about the prevalence of this patient population in inpatient hospital settings. The current point prevalence study aimed to identify the prevalence of patients with dementia who exhibit aggressive, abusive or threatening behaviour in participating Victorian health service wards/units. It is part of a wider project focusing on the management of dementia and severe BPSD in hospital settings that will help inform service delivery and the development of a best practice model of care for these patients in Victorian public hospitals.

Within the current study sample of 437 hospital inpatients representing acute and sub-acute wards across nine metropolitan and regional Victorian health services, approximately 22% were reported as having a formal diagnosis of dementia. In addition, a further 21% of patients were assessed as having probable or suspected dementia, taking the total percentage of patients with diagnosed, probable or suspected dementia in the study sample to 43%. Of these patients, 18% were estimated to have 'severe' (Tier 5), 'very severe' (Tier 6) or 'extreme' (Tier 7) BPSD according to the Brodaty Seven-tiered Model of Management of BPSD.² The most severe behaviours of agitation observed according to the PAS¹ in this patient population included: severe aberrant vocalisation (2.7% of patients), severe motor agitation (3.7% of patients), severe aggression (1.1% of patients) and severe resisting care (9.1% of patients). Despite this, there were a number of factors that may have influenced these findings including the presence of co-existing delirium (40% of patients with suspected, probable or diagnosed dementia) and other co-morbidities, the background/experience of the data collectors and limitations regarding the methodology used.

The findings from this study suggest that the prevalence of patients with dementia who exhibit aggressive, abusive or threatening behaviour in participating Victorian health service wards is significantly higher than the proportion identified through previous population analysis of state-wide hospital administrative datasets. In addition, given the presence of patients with diagnosed, probable or suspected dementia and BPSD across a wide range of inpatient hospital wards/units, the assessment and management of this patient population should be considered a significant organisation-wide concern for Victorian health services.

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APPENDIX 1: Health Service Survey Questions: Point Prevalence

Demographics
1. Age of Patient _____
2. Sex of Patient _____
3. Type of Usual Accommodation Prior to Admission ☐ Private Residence – Alone ☐ Private Residence—With Others ☐ Residential Aged Care Facility ☐ Other _____
4. Current Clinical Unit _____
5. Current Total Length of Stay ☐ If less than 24 hours since admission, how many hours _____ ☐ If more than 24 hours since admission, how many days _____
Medical Condition
1. Patient's Primary Diagnosis for this Admission _____
2. Has the Patient ever been formally diagnosed with dementia? Y / N
2a. If yes, is a Dementia sub-type documented? ☐ Alzheimer's Disease ☐ Vascular ☐ Frontotemporal ☐ Lewy Body ☐ Parkinson's Disease ☐ Unknown ☐ None Documented ☐ Other _____
2b. If no, does the patient have any of the following Cognitive Concerns documented? ☐ Cognitive Impairment ☐ Cognitive Decline ☐ Memory Issues ☐ None
2c. Is there sufficient evidence to support a diagnosis of dementia? ☐ Yes – diagnosed dementia ☐ Yes – probable dementia ☐ Yes – suspected dementia ☐ No (END SURVEY HERE)

3. Does the patient have any additional documented co-existing concerns/conditions that may be impacting their cognition and/or behaviour relevant to this admission?
- None applicable
 - Recent Intracerebral Haemorrhage (ICH) or Stroke
 - Active Psychiatric Condition (includes active/current depression/anxiety)
 - Delirium

Documented Behaviours

Select Circle only the highest intensity score for each behaviour grouping observed during this rating period. Use the anchor points as a guide to choose a suitable level of severity. (Not all anchor points need be present. Choose the more severe level when in doubt). THIS RATING PERIOD IS THE ADMISSION TO DATE.

- 1) Has the patient demonstrated Aberrant Vocalisation during this admission?
E.g., repetitive requests or complaints, nonverbal vocalisations/moaning/screaming

- 0. Not present
- 1. Low volume, not disruptive in milieu, including crying
- 2. Louder than conversational, mildly disruptive, redirectable
- 3. Loud, disruptive, difficult to redirect
- 4. Extremely loud screaming or yelling, highly disruptive, unable to redirect

- 2) Has the patient demonstrated Motor Agitation during this admission?
E.g., pacing, wandering, moving in chair, picking at objects, disrobing, banging on chair, taking others' possessions. Rate "intrusiveness" by normal social standards, not by effect on other patients in milieu. If "intrusive" or "disruptive" due to noise, rate under "Vocalization.")

- 0. Not present
- 1. Pacing/moving about in chair at normal rate (seeking comfort, looking for spouse, purposeless movements)
- 2. Increased rate of movements, mildly intrusive, easily redirectable
- 3. Rapid movements, moderately intrusive or disruptive, difficult to redirect
- 4. Intense movements extremely intrusive or disruptive, not redirectable verbally

- 3) Has the patient demonstrated Aggressiveness during this admission?
(score '0' if aggressive only when resisting care)

- 0. Not present
- 1. Verbal threats
- 2. Threatening gestures; no attempt to strike
- 3. Physical toward property
- 4. Physical toward self or others

- 4) Has the patient resisted care during this admission?

- 0. Not present
- 1. Procrastination or avoidance
- 2. Verbal gesture of refusal
- 3. Pushing away to avoid task
- 4. Striking out at caregiver

- 4a) If the patient resisted care, with which activity was this associated?

- Washing
- Dressing
- Eating
- Medication
- Other _____

5) Were any of the following used during this rating period because of behaviour problems?

- ☐ Seclusion
- ☐ PRN Meds (specify)
- ☐ Restraint
- ☐ Other interventions _____

6) Please list any other challenging behaviours during this admission: _____

7) While this study is primarily concerned with identifying the prevalence of dementia and associated behavioural disturbances such as agitation, aggression, and violence, it also aims to classify the range and severity of these.

Please estimate (as best you can) the severity and prevalence of BPSD for this patient based on the 'Brodaty Tiers' (representing a 7-tiered model of management of BPSD):

- ☐ Tier 7—Dementia with extreme BPSD
- ☐ Tier 6—Dementia with very severe BPSD
- ☐ Tier 5—Dementia with severe BPSD
- ☐ Tier 4—Dementia with moderate BPSD
- ☐ Tier 3—Dementia with mild BPSD
- ☐ Tier 2—Dementia with no BPSD
- ☐ Tier 1—No Dementia