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ISSUES FACING FRAIL OLDER PEOPLE IN THE ACUTE HOSPITAL SETTING

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Study Aims



- To determine the incidence and prevalence of dementia among patients admitted to acute public hospitals in and around Brisbane, Australia.
- What happens to patients with dementia when they are admitted?
- Do their outcomes differ from same-aged patients without dementia?

In addition:

- How well do hospitals respond to the needs of patients with dementia?
- How well do carers consider their relative's needs were met?



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Method



493 patients aged 70 years and older, consecutively admitted to one of four Brisbane acute public hospitals recruited into the study.

Recruitment commenced in November 2008 – May 2010.

Inclusion criteria

>70 years, admitted to an acute care ward for an expected admission of at least 48 hours or more,
Recruitment occurred Monday – Friday due to Assessor availability,
Patients were assessed within 24 hours of their admission.



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Measures included:



- InterRAI Acute Care (AC)
- Mini Mental Status Examination (MMSE)
- Confusion Assessment Method (CAM)
- Vulnerable Elders Survey – 13
- Delirium Rating Scale – Revised (DRS-R98)
- Geriatric Depression Scale – 5
- Informant Questionnaire for Cognitive Decline in the Elderly (IQCODE)
- Neuropsychiatric Inventory at baseline, Day 7 and every subsequent 7 days
- Adverse events assessed daily – pain, falls, continence,
- 28 day telephone follow-up – re-admission, death



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Geriatrician Review



To determine dementia and delirium, a preliminary decision was made using the patients test scores:

- Likely pre-morbid dementia
- No likely pre-morbid dementia, or
- Uncertain

To assess the reliability of this initial classification, a subset of cases were independently reviewed by two geriatricians.

Similarly, the geriatrician determined whether the patient had a delirium at admission, or subsequently

- Likely delirium
- Delirium not likely



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Results



Total Participants = 493

Females = 290 (58.8%); Males = 203 (41.2%)

Average age = 80.4 years (SD = 6.5)
(range = 70 - 99 years)


MMSE Average = 24.73 (SD = 4.9) range = 0 – 30;
Unable to complete = 22

Likely pre-morbid dementia = 98 (19.8%)
Pre-morbid dementia not likely = 395 (80%)



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Results




	Likely Pre-morbid Dementia (n = 96)	Pre-morbid Dementia not likely (n = 397)
Age (average)	84.6 (SD = 5.9)	79.4 yrs (SD = 6.2); p = 0.000**
Gender	F = 64 (65.3%); M = 34 (34.7%)	F = 225 (57%), M = 170 (43%). n.s.
Marital status	Married n = 38 (39.2%) Widowed n = 47 (48.5%) Never married n = 6 (6.2%) Sig other n = 0 Sep/Divorced n = 6 (6.2%)	Married n = 172 (43.9%) Widowed n = 136 (34.7%) Never married n = 36 (9.2%) Sig other n = 7 (1.8%) Sep/Divorced n = 38 (9.7%); n.s.
Level of education	Primary level n = 16 (20.5%) Secondary level n = 49 (62.8%) Certificate/Trade n = 11 (14.1%) Tertiary n = 2 (2.6%)	Nil formal n = 2 (0.5%) Primary level n = 34 (9.3%) Secondary level n = 246 (67.2%) Certificate/Trade n = 63 (17.2%) Tertiary n = 21 (5.7%); p = 0.05

p < 0.05; *p < 0.001

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Results




Measure	Likely Pre-morbid dementia (n = 96)	Pre-morbid dementia not likely (n = 397)
Primary language = English	English n = 90 (92.8%) Other n = 7 (7.2%)	English n = 364 (92.6%) Other n = 29 (7.4%); n.s.
MMSE (average)	17.6 (SD = 6.3)	26.3 (SD = 2.9); p = 0.000**
Geriatric Depression Scale-5	1.3 (SD = 1.3)	0.81 (SD = 1.2); p = 0.002*
Vulnerable Elders Survey-13	7.6 (SD = 2.6)	4.7 (SD = 3.2); p = 0.000**
Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE)	4.2 (SD = 0.7) n = 44	3.3 (SD = 0.6); p = 0.000* n = 127
Neuropsychiatric Questionnaire - Premorbid	7.2 (SD = 5.6) n = 45	2.9 (SD = 4.1); p = 0.000** n = 166

p < 0.05; *p < 0.001

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Results



Measure	Likely Pre-morbid dementia (n = 96)	Pre-morbid dementia not likely (n = 397)
Activities of Daily Living Scale		
0 Independent	n = 39 (39.8%)	n = 318 (81.3%)
1 Supervision required	n = 9 (9.2%)	n = 18 (4.6%)
2 Limited impairment	n = 14 (14.3%)	n = 27 (6.9%)
3 Extensive assistance required '1'	n = 15 (15.3%)	n = 11 (2.8%)
4 Extensive assistance required '2'	n = 8 (8.2%)	n = 3 (0.8%)
5 Dependence	n = 12 (12.2%)	n = 14 (3.6%)
6 Total dependence	n = 1 (1.0%)	n = 0; p = 0.000**
InterRAI IADL-Performance Scale	29.5 (SD = 15.8)	14.5 (SD = 13.3); p = 0.000**
IADL - Capacity	34.0 (SD = 14.7) n = 74	16.6 (SD = 14.5); p = 0.000** n = 330

**p < 0.000

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Results

Adverse Event	Likely Pre-morbid dementia (n = 96)	Pre-morbid dementia not likely (n = 397)
Admitted from: Private accommodation RAC Low Care RAC high Care Other	n = 71 (72.4%) n = 5 (5.1%) n = 19 (19.4%) n = 3 (3%)	n = 360 (91.1%) n = 17 (4.3%) n = 7 (1.8%) n = 11 (2.9%); p = 0.000**
Delirium at admission	n = 18 (18.4%)	n = 19 (4.8%); p = 0.000**
Pressure ulcer at admission	n = 6 (6.5%)	n = 12 (3.1%); n.s.
Premorbid bladder incontinence Frequently Sometimes	n = 30 (30.6%) n = 17 (17.3%)	n = 28 (7.1%) n = 43 (10.8%); p = 0.000**
Bladder incontinence at admission Frequently Sometimes	n = 19 (19.4%) n = 13 (13.3%)	n = 28 (7.1%) n = 39 (9.9%); p = 0.000*

p < .05; *p < 0.001

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Adverse Events in Hospital



	Likely Pre-morbid dementia (n = 96)	Pre-morbid dementia not likely (n = 397)
Delirium during admission	n = 16 (16.3%)	n = 13 (3.3%); p = 0.000**
No change in functional status admission to discharge	n = 60 (61.2%)	n = 272 (68.9%)
Decline in functional status	n = 5 (5.1%)	n = 7 (1.8%)
Improvement in functional status	n = 33 (33.7%)	n = 116 (29.4%); n.s.
Falls during admission	n = 8 (8.2%)	n = 14 (3.5%); p = 0.05

p < .05; *p < 0.001

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Discharge

	Likely Pre-morbid dementia (n = 96)	Pre-morbid dementia not likely (n = 397)
Length of stay (days)	13.9 (SD = 13.4) (range 1-68 days)	9.8 (SD = 9.7); (range 1-79 days); p = 0.000*
Discharged to same level of care a higher level of care	64 (67.4%) 11 (11.6%)	310 (80.7%) 14 (3.6%); p = 0.002*
28 days post discharge		
Readmitted to hosp within 28 days	n = 12 (12.2%)	n = 52 (13.2%)
Deceased	n = 1 (1.0%)	n = 5 (1.3%) n.s.

**p < 0.001

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Factors predicting adverse outcomes

Adverse event	Significant predictors
Incident delirium	Diagnosis of dementia; $p = 0.001^*$; OR = 4.6
Death in hospital	Functional ability; $p = 0.003^*$; OR = 1.6
Death at 28 days following discharge	GDS depression score; $p = 0.002^*$; OR = 3.3
Readmission to hospital within 28 days following discharge	No variables significant
Falls in hospital	MMSE; $p = 0.007^*$; OR = 0.9 Female gender; $p = 0.03$; OR = 0.33

^{*} $p < 0.05$; ^{**} $p < 0.001$



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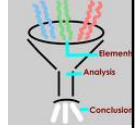
Conclusions

Around 20% of patients were considered to have dementia.
An additional 6% of patients had delirium at admission or developed delirium.

Thus, 26% of patients had cognitive impairment.

Patients with likely pre-morbid dementia were:

- more likely to have a delirium at admission and to develop a delirium during the hospital admission,
- were more likely to fall in hospital,
- had longer lengths of hospital stays, and
- were more likely to be discharged to a higher level of care.



There was no difference in outcomes at 28 days following discharge.



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Any Questions?



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