Leading hospital wide change to improve care for patients with dementia and delirium

Frederick Graham
CNC Dementia & Delirium, BN

Cognitive Impairment in Acute Care

- Delirium
- Dementia
- Delirium superimposed on dementia (DsD)
- Intellectual impairment
- Brain injury
- Delirium or dementia superimposed on a psychiatric condition
- Mild Cognitive Impairment (MCI) - prodromal dementia

Dementia

- Dementia – neurodegenerative syndrome caused by over 100 different diseases which cause structural and chemical changes in the brain leading to brain tissue death. No cure and is usually irreversible.1,2,3
- Progressive decline in language, memory, perception, personality and cognitive skills1
- BPSD - Behavioural and Psychological Symptoms of Dementia 3
  - Wandering, vocalisations, aggression, agitation, repeated questioning
  - Depression, psychosis, anxiety, sleep disturbances

1 Banerjee (2009), 2 AIHW (2013), 3 IPA (2012),
Epidemic of Dementia

Ageing population:
- In Australia now 3,000,000 > 65yrs, (7,000,000 by 2050)¹
- Dementia: 35.6 million worldwide, (will double in 20 years)⁵

Dementia in Australia
- 289,000 now, (increasing to 900,000 by 2050)⁶
- 2⁴ leading cause of death⁵
- 2⁴ leading cause of disease burden & disability ($4.9 billion in 2009-2010)⁴
- Underdiagnosed in the community

Delirium

Acute confusional state manifested as:
- Acute disturbance of consciousness and cognition
- Decreased ability to focus, sustain or shift attention
- Changes in sleep/wake cycles
- ↑ or ↓ in psychomotor behaviours (agitated or quiet and drowsy)
- Several forms: hyperactive, hypoactive and mixed

Pathophysiology

- Poorly understood
- Many hypotheses exist
  1. Neurotransmitter imbalance/abnormalities⁸,¹⁰
  2. Inflammatory response with increased cytokines⁸,¹⁰,¹¹
  3. Changes in the blood-brain barrier permeability¹²
  4. Widespread reduction of cerebral oxidative metabolism¹⁴
  5. Increased activity of the hypothalamic-pituitary adrenal axis¹¹

Dementia in hospital

- Over half the patients in hospital are older people (53% > 65yrs)\(^{15,16}\)
- Prevalence of dementia in hospital is age dependent:
  - 20.7% > 70yrs increasing to 47.4% >90yrs (Qld)\(^{17}\)
  - 12% in 50-64yrs increasing to 25% >85yrs (NSW)\(^{18}\)

  Actual prevalence is likely to be higher as dementia is underdiagnosed and recognised in the community and hospitals

\(^{15}\) \(\text{Tadd et al} (2011)\), \(^{16}\) \(\text{AIWH} – \text{O l d e r P e o p l e i n H o s p i t a l s} (2007)\), \(^{17}\) \(\text{Travers et al} (2013)\), \(^{18}\) \(\text{Draper et al} (2011)\)

94% of admissions are for other health conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Likelihood of admission compared to people without dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constipation</td>
<td>1.33 x more likely</td>
</tr>
<tr>
<td>UTI</td>
<td>2.61 x more likely</td>
</tr>
<tr>
<td>LRTI</td>
<td>1.64 x more likely</td>
</tr>
<tr>
<td>MNOF</td>
<td>2.62 x more likely</td>
</tr>
<tr>
<td>TIA</td>
<td>1.18 x more likely</td>
</tr>
<tr>
<td>Head Injury</td>
<td>2.16 x more likely</td>
</tr>
<tr>
<td>Septic</td>
<td>2.14 x more likely</td>
</tr>
<tr>
<td>Alcohol</td>
<td>5.05 x more likely</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>4.47 x more likely</td>
</tr>
</tbody>
</table>

\(^{18}\) \(\text{Draper et al} (2011)\) – The hospital dementia services project
Delirium in hospital

- Up to 50% of hospitalised older people have delirium
- 8-17% of all older people in ED
- 40% of nursing home residents in ED
- 29-64% occurrence in medical and geriatric wards
- Up to 50% prevalence in surgical settings
- Only 1-2% prevalence in community (onset usually brings people to hospital)

Poor outcomes for cognitive impairment

- More likely to fall (OR 2.1, CI 1.7-2.7)
- Experience significant functional decline
- Pressure injuries (RR 1.61)
- Pneumonia (RR 1.37)
- Urinary tract infections (RR 1.75)
- LoS increased (16.5 days versus 8.9 days)
- 2-3 times more likely to die
- Up to five times risk of delirium in dementia

47% of people with an established diagnosis did not have dementia documented

Dementia & delirium complicate care

- Communication difficulties
- Increased agitation with sustained low and high stimulation activity in hospitals
- Delirium symptoms superimposed on dementia symptoms.
  (Dementia increases risk of delirium fivefold)
- BPSD
Current nursing approach to confused agitated patients:

- Specials (AIN 1:1) – Falls sitters
- Psychotropic medication/sedation – often 1st line
- Physical restraint
- Falls Rooms (AIN with 4 pts)

- Do these reduce agitation?
- At what cost? Are we converting hyperactive delirium to hypoactive delirium (+ adverse outcomes) with medication
- Do they deliver quality care? (therapeutic not custodial care)

Falls Sitters/specials

- Custodial gaze as opposed to a therapeutic gaze
- Least knowledgeable person (AIN) for complex care needs
- Lack of theoretical underpinning contributing to falls, chemical and physical restraint

Psychotropic’s/sedative’s for Behaviour

- Dementia
  - High-risk of serious harm weighed against, at best, modest benefits
  - Antipsychotics – high risk of stroke, increased mortality & falls

- Delirium
  - lack of evidence that antipsychotic medication should be used as a 1st line treatment or preventative treatment for delirium
  - It is recommended that psychoactive drugs (sedatives, antipsychotics, hypnotics, anticholinergic and opioids) be reduced or removed
  - For both dementia and delirium only use temporarily in extreme disturbances causing distress and harm

References


Non-Therapeutic responses to aggressive behaviours in dementia or brain injured patients

**Nursing Responses**

- Urbitarian care:
  - Organised around throughput, processes, & procedures
  - Risk averse
  - Nurse focus - duty, responsibility, efficiency, being in-charge in time poor environments

**Nursing Responses**

- Mental health authentic engagement
  - Grounding interactions within reality
  - Setting contextually based limits

**Patient**

- Persistent aggression
- Negative physical outcomes

**Nurse**

- Negative physical, psychosocial, and professional consequences

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Therapeutic responses to aggression in dementia & brain injury

**Nursing Responses**

- Entering the patients world:
  - Normalization
  - Person-centred care
  - Nurse-patient mutuality
  - Downplaying negativity
  - Thoughtful creativity

**Patient**

- Decreased aggression
- Increased well-being

**Nurse**

- Increased nurse satisfaction

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Literature around nursing

- Inadequate knowledge about dementia and delirium, 36,38,40,41
- No models of nursing care validated for dementia in hospitals 42
- Nurses beliefs about memory & ageing affect clinical decision making 43
- Overuse of chemical and physical restraint with little regard to the serious-side effects (poor knowledge of antipsychotic medication) 1,10
- Poor knowledge about antipsychotic medication and dementia 1,10
- Over-prioritisation of safety versus dignity 31,40
- Nurses often feel helpless, stressed and frustrated leading to negative attitudes of staff 30,32,33

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Reconceptualising care

**DEMENTIA**

- Traditionally, a biomedical approach
- Influence of psychosocial and physical environment
- Valuing personhood – a person-centred approach
- Interpreting BPSD as unmet needs
- Deliver care that identifies unmet needs, is person-centred, reduces environmental stressors and promotes activity, engagement and wellbeing.

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Multi-modal delirium prevention and management strategies

- Mobilisation
- Sleep enhancement
- Orientation
- Hearing and visual aids
- Hydration
- Therapeutic activity
- Environmental modification
Environment contributors to stress

Patient factors:
• Vision
• Hearing
• Cognition

Environmental factors
• Cluttered
• No cues
• Busy
• Noisy

Like a Square Peg in a Round Hole!

Interventions that address:
• Environmental precipitants
• Physical precipitants
• Psychological precipitants

HOW DO WE DO THIS IN ACUTE-CARE SETTINGS?
Princess Alexandra Hospital

- Brisbane, Australia
- Large metropolitan hospital
- Approx. 800 beds
- 3rd Magnet ® designation

High Dependency Unit (2008 – 2015)

- 8 beds servicing 3 medical wards (76 beds)
- Glazed Glass doors (not locked)
- Increased staff ratio (4 x AM; 4 x PM, 2 x ND)
- Staff training
- Recreational resources and specialised clinical tools
- Adoption of evidence-based theoretical approach (PLST, NDB)

ENVIRONMENT

- Geographically located to least busy area with fewest exits
- Located within medical unit facilitates timely access to treating teams
- Double glazed doors to offer quieter environment

W5A
- Acute Medical (4 & 5)
- High risk patients
- Hypertension

W5B
- Acute Medical (1 & 2)
- Eye surgical ward
- Immunology & rheumatology

W5C
- Acute Medical (3 & 5)
- Endocrine
- SD overflow (nephrol)

Lifts
Wanderer Alarms
Glass doors
People with dementia are up to eight times more likely to be continent when they can see the toilet.

Environmental demands (internal & external) exceed a person's ability to cope. Stressors accumulate during the day and patient can cycle between anxious and dysfunctional states.
Reduction of stress (through intervention) diminishes anxious behaviour and prevent onset of dysfunctional behaviour

Outcomes

- Reduced falls by 30%
- Increased staff retention
- Increased staff morale, improved BPA workplace culture
- Reduced workforce costs due to reduced external & internal casual staff use
  - 62.7% reduction in 1:1 special use
  - Less staff leave & vacancy due to improved workplace
Literature has since reported benefits:

- Several projects suggest specific environmental adjustments and models of care for delirium management for older people [58-60]
- An observational study has reported LoS equal to cognitively intact people and no greater incidence of adverse events [61]

MODEL OF CARE
- Increased staffing
- Constant Supervision for high falls risk
- Person Centred Care (Kitwood, 1997)
  - biography, creativity, flexibility, choice
- Communication
- Emotional support
Recreational Activities

Aims:
- Provide distraction & interest
- Relieve boredom
- Involve family in care

Activities relevant to past occupations or personality

Themed Fiddle Boxes

Aims:
- Reminiscence
- Explore stories with familiar items
- Textural exploration
Video Engagement in meaningful activity October 7–9, 2015 Atlanta GA

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Frederick Graham (CNC Dementia and Delirium) presentation at ANCC National Magnet Conference®

Image courtesy PAH Cognition Champions Group, photographer Fred Graham
Develop a Behavioural Chart

- Hourly assessment of frequency, duration and intensity of behaviour
- Critical thinking tool for causes of behaviour
- Include pain assessment tools
- Provide a way to evaluate interventions

Pain, Behaviour and Cognitive Impairment

- Pain remains dementia and delirium is under-recognised and undertreated in all settings62,63,64
- Behaviour is often the only indicator of pain62,66
- Behaviours are often interpreted as BPSD and not as pain related62,66
- Pain is associated with BPSD62 and behavioural symptoms in delirium67.
- There is no behavioural observation tool for pain in delirium66
- Best practice: Triangulate info from a variety of sources and undertake an analgesic trial to evaluate68,69,70

Guiding principles for Assessing Pain in Cognitive Impairment

- Self report
- Painful conditions or treatments
- Observe behaviours
- Surrogate reporting
- Analgesic trial
CNC Dementia and delirium (2009 - 2015)

- Specialised patient assessment and care
- Role model best practice
- Promote organisational awareness and change
- Provide appropriate education and training to prepare workforce
- Introduce evidence based clinical tools

Education (3 modules & 2hr workshop)

- **Module One**
  - Physiology & Cognition
  - Delirium
- **Module Two**
  - Dementia
  - Models of Dementia Care
- **Module Three**
  - Behavioural Observation
  - Pain in Dementia
  - Pharmacological Management of BPSD
  - Patients with High-risk Behaviours

Education

- Over 800 nurses attended workshops
- Overwhelmingly positive feedback
- All graduate starting nurses expected to complete
- Mandated 80% completion in all medical units
CAM – Confusion Assessment Method

1. Acute onset and fluctuating course
2. Inattention
3. Disorganised thinking
4. Altered level of consciousness

Positive screen = 1 + 2 and 3 or 4

Semi-formal interview with Mini-Cog + digit span

Recruited through education rollout:

• 120 passionate nurses
• Meet monthly
• Develop resources for wards
• Educate staff locally
• Roll model best-practice
Cognition Corners

Box of Activities
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Bedside Table Fiddle Blankets

Fiddle Blanket
Cognition Champions Outcomes

- Provision of resources to wards
- Raised visibility and awareness
- Policy & procedure
- May have improved individual care practices, but not consistent as yet
- Need a robust study to measure outcomes

CogChamps Research Project

Can a knowledge translation intervention involving cognition champions improve care practices toward people with cognitive impairment?

- 2 year study (2015 – 2017) (Funded by Department of Social Services, Australian Government)
- Quasi Experimental design
- 6 intervention wards - 4 medical & 2 surgical
- 2 Control wards - 1 medical & 1 surgical
- Data collection – 3 month pre; immediately post, 3 month post, 6 month post

Principle Investigators: Dr C. Travers (QUT), Mr F. Graham (PAH), Prof. A. Henderson (PAH), Prof. E Beattie (QUT), Dr J McCrow

Intervention

- Knowledge translation intervention
- Training of Cognition Champions on identification of delirium and best practice care
- Ward cultural levers
  - Recognition and reward
  - Strong ward leadership support
  - Teachable moments
- Use of existing clinical and recreational resources

Principle Investigators: Dr C. Travers (QUT), Mr F. Graham (PAH), Prof. A. Henderson (PAH), Prof. E Beattie (QUT), Dr J McCrow
Understanding how hospital nurses make decisions about care for people with cognitive impairment?

- Frederick Graham (PhD candidate, Queensland University of Technology, QUT)
- Supervisors:
  - Professor Elizabeth Beattie (QUT)
  - Associate Professor Carol Windsor (QUT)
  - DR Elaine Fielding (QUT)
  - Associate Professor Dian Tron

References

References


