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

Frederick Graham
CNC Dementia & Delirium, BN

Presentation at Concurrent Session for
ANCC National Magnet Conference® 2015, Atlanta GA

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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) - *pre-**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 skills [1]
- 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) [4]
- Dementia: 35.6 million worldwide, (will double in 20 years)[5]

Dementia in Australia

- 289,000 now, (increasing to 900,000 by 2050)[5]
- 2nd leading cause of death[6]
- 2nd leading cause of disease burden & disability ($4.9 billion in 2009-2010)[4]
- Underdiagnosed in the community

[4] AIHW – *Dementia in Australia* (2012), [5] Alzheimer's Disease International (2009), [6]Australian Bureau of Statistics (2015)

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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

[7] American Psychiatric Association (2000),[8] Inouye et al (2014)

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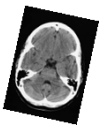
Pathophysiology



- Poorly understood
- Many hypotheses exist
  1. Neurotransmitter imbalance/abnormalities[8,9,10]
  2. Inflammatory response with increased cytokines [9,10,11]
  3. Changes in the blood-brain barrier permeability[12]
  4. Widespread reduction of cerebral oxidative metabolism[14]
  5. Increased activity of the hypothalamic-pituitary adrenal axis[11]

[8] Inouye et al (2014), [9] Krishnan et al 2013, [10] Hsheih et al (2008), [11] Cerejeira et al 2013, [12] Hughes et al 2012, [13] Adam et al 2013, [14] Bozza et al 2013,

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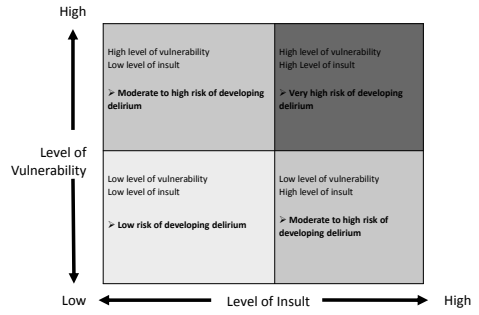
MULTI-FACTORIAL

The interrelationship between patient vulnerability and precipitating insult



Source: adapted from – *Clinical practice guidelines for the management of delirium in older people*. 2006. http://www.health.vic.gov.au/acute-agedcare/.

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] Tadd et al (2011), [16] AIWH – Older People in Hospitals (2007), [17] Travers et al (2013), [18] Draper et al (2011)

94% of admissions are for other health conditions

Condition	Likelihood of admission compared to people without dementia
Constipation	1.33 x more likely
UTI	2.61 x more likely
LRTI	1.64 x more likely
#NOF	2.62 x more likely
TIAs	1.19 x more likely
Head injury	2.16 x more likely
Septic	2.14 x more likely
Alcohol	5.05 x more likely
Epilepsy	4.47 x more likely

[18] Draper et al (2011) – The hospital dementia services project

Delirium in hospital

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

[8] Inouye et al (2014)

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Poor outcomes for cognitive impairment

- More likely to fall (OR 2.1, CI 1.7-2.7) [19]
- Experience significant functional decline [20]
- Pressure injuries (RR 1.61) [21-23]
- Pneumonia (RR 1.37) [22-23]
- Urinary tract infections (RR 1.79) [21-23]
- **LoS increased** (16.5 days versus 8.9 days) [18]
- 2-3 times more likely to die [24,8]
- **Up to five times risk of delirium in dementia** [18,25]

47% of people with an established diagnosis did not have dementia documented [26]

[19] Harlein et al (2011), [20] McCusker et al (2001), [21] Bail et al (2013), [22] Mukadam et al (2011),[23] Watkin et al (2012), [18] Draper et al (2011), [24] Margenoni et al (2013), [8] Inouye et al (2014), [25] Fick et al (2002), [26]AIHW - *Dementia care in hospitals* (2013)

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Dementia & delirium complicate care

- Communication difficulties [18]
- Increased agitation with sustained low and high stimulation activity in hospitals [27]
- Delirium symptoms superimposed on dementia symptoms. (Dementia increases risk of delirium fivefold) [17,23, 28]
- BPSD [29]

[18] Draper et al (2011), [27] Kovach et al (2002), [23] Fick et al (2002), [17] Travers et al (2013), [28] Inouye (2006), [29] Sourial et al (2001)

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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)*

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Falls Sitters/specials

- ***Custodial gaze*** as opposed to a ***therapeutic gaze*** [30-32]
- Least knowledgeable person (AIN) for complex care needs[30,31]
- Lack of theoretical underpinning contributing to falls, chemical and physical restraint [30,32,]

[30] Moyle et al (2010), [31] Wilkes et al (2010), [32] Dewing (2013)

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Psychotropic's/sedative's for Behaviour

- Dementia
  - High-risk of serious harm weighed against, at best, modest benefits[1,33,34]
  - Antipsychotics – high risk of stroke, increased mortality & falls [34,35]
- Delirium
  - lack of evidence that antipsychotic medication should be used as a 1st line treatment or preventative treatment for delirium [8,34]
  - It is recommended that psychoactive drugs (sedatives, antipsychotics, hypnotics, anticholinergic and opioids) be reduced or removed [8]
  - For both dementia and delirium only use temporarily in extreme dsitrubances causing distress and harm[8,37]

[1] Banerjee (2009), [33] Kitching (2007), [34] Flaherty et al (2011),), [35] Richter et al (2012), [36] Armstrong-Ether et al (2008), [8] Inouye et al (2014), [37] Tropea et al (2009)

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

Nursing Reponses

Utilitarian 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

[45] Finfgeld-Connett, D. (2009). Management of aggression among demented or brain-injured patients. *Clinical Nursing Research, 18*(3), 272-287.

Therapeutic responses to aggression in dementia & brain injury

Nursing Reponses

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

[45] Finfgeld-Connett, D. (2009). Management of aggression among demented or brain-injured patients. *Clinical Nursing Research, 18*(3), 272-287.

Literature around nursing

- Inadequate knowledge about dementia and delirium [38,39,40,41]
- 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) [1,36]
- Poor knowledge about antipsychotic medication and dementia [1,36]
- Over-prioritisation of safety versus dignity [15,44]
- Nurses often feel helpless, stressed and frustrated leading to negative attitudes of staff [40,41,15]

[38] Meako et al (2011), [39] Smyth et al (2013), [40] Erickson & Saveman (2002), [41] Borbasi et al (2006), [42] Moyle et al (2008), [43] McCarthy (2003), [1] Banerjee (2009), [36] Armstrong-Ether et al (2008), [15] Tadd et (2011), [44] Goethals et al (2012)

Reconceptualising care

DEMENTIA

- Traditionally, a biomedical approach[46]
- Influence of psychosocial and physical environment [47,48,49]
- Valuing personhood – a person-centred approach [46,50]
- Interpreting BPSD as unmet needs [51]
- *Deliver care that identifies unmet needs, is person-centred, reduces environmental stressors and promotes activity, engagement and well-being.*[46,49,51,52,53,54]

[46] Penrod et al (2007), [47] Lawton & Nahemow (1973), [48] Lawton (1999), [49] Smith et al, (2004), [50] Kitwood and Bredin (1992), [51] Algase et al (1996), [52] Kovach et al (2004), [53] Kolanowski et al (2011), [54] Van Haitsma et al (2013)

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Multi-modal delirium prevention and management strategies [8,55,56]

- Mobilisation
- Sleep enhancement
- Orientation
- Hearing and visual aids
- Hydration
- Therapeutic activity
- Environmental modification

[8] Inouye et al (2014), [55] Hirsch et al (2015), [56] Hshieh et al (2015),

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Environment contributors to stress

Patient factors:

- Vision
- Hearing
- Cognition

Environmental factors

- Cluttered
- No cues
- Busy
- Noisy

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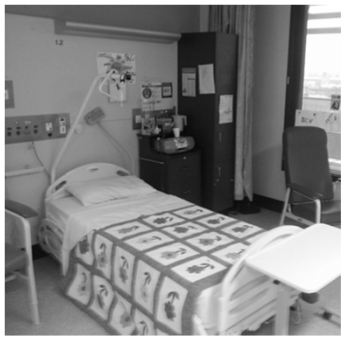

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Like a Square Peg in a Round Hole!

Interventions that address:

- Environmental precipitants
- Physical precipitants
- Psychological precipitants

HOW DO WE DO THIS IN ACUTE-CARE SETTINGS?

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Princess Alexandra Hospital

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

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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)

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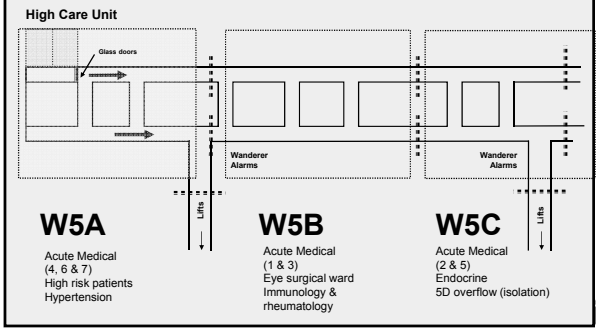
ENVIRONMENT

- 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



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People with dementia are up to eight times more likely to be continent when they can see the toilet

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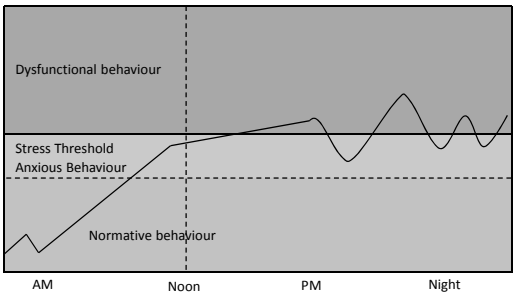
Environmental demands (internal & external) exceed a persons ability to cope. Stressors accumulate during the day and patient can cycle between anxious and dysfunctional states.



Smith, M., Gerdner, L. A., Hall, G. R., & Buckwalter, K. C. (2004)

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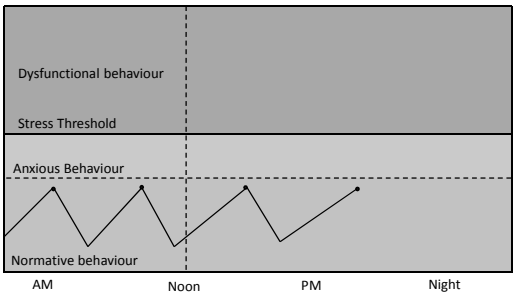
Reduction of stress (through intervention) diminishes anxious behaviour and prevent onset of dysfunctional behaviour



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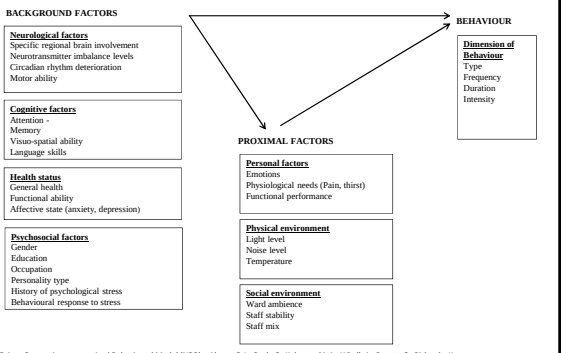

Needs Driven Dementia-compromised Behavioural Model (NDB) - Algase, D.L., Beck, C., Kolanowski, A., Whall, A., Berent, S., Richards, K. and Beattie, E.R (1996)

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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]

[58] Niam, et al (2009), [59] Zieschang, et al (2010) ,[60] Soto, M. E., et al. (2008) , [61] Flaherty, J. H., et al (2010).

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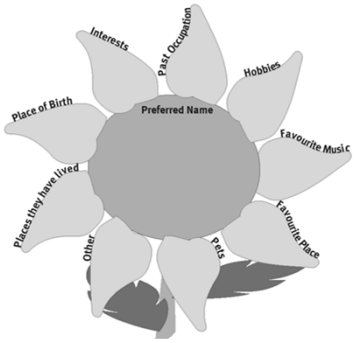

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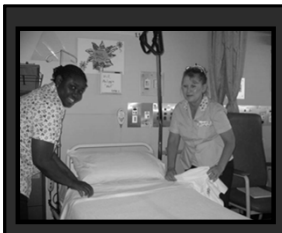
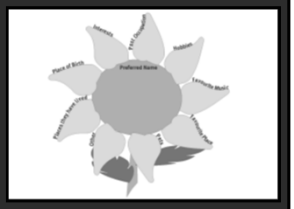
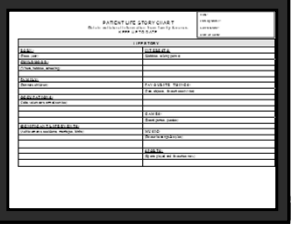
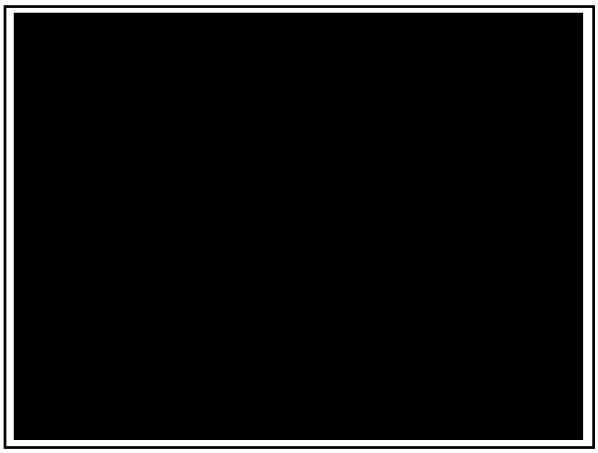






MODEL OF CARE
- Increased staffing
- Constant Supervision for high falls risk
- Person Centred Care (Kitwood, 1997)
  - biography, creativity, flexibility, choice
- Communication
- Emotional support


Activities relevant to past occupations or personality

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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

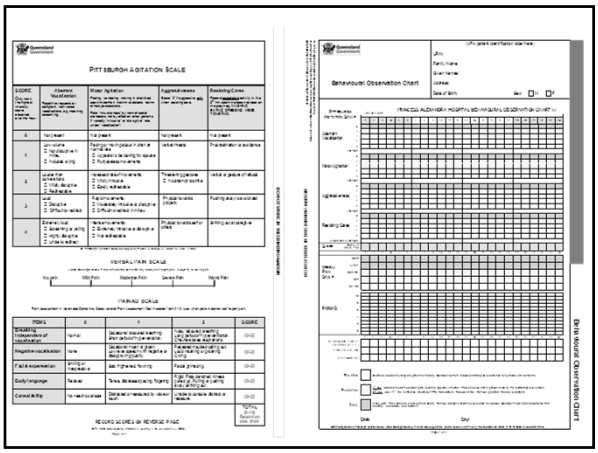
- Pain remains dementia and delirium is under-recognised and undertreated in all settings[62,63,64]
- Behaviour is often the only indicator of pain[62,65]
- Behaviours are often interpreted as BPSD and not as pain related[62,66]
- Pain is associated with BPSD [62] and behavioural symptoms in delirium[67,]
- There is no behavioural observation tool for pain in delirium[66]
- Best practice: Triangulate info from a variety of sources and undertake an analgesic trial to evaluate [68, 69, 70]

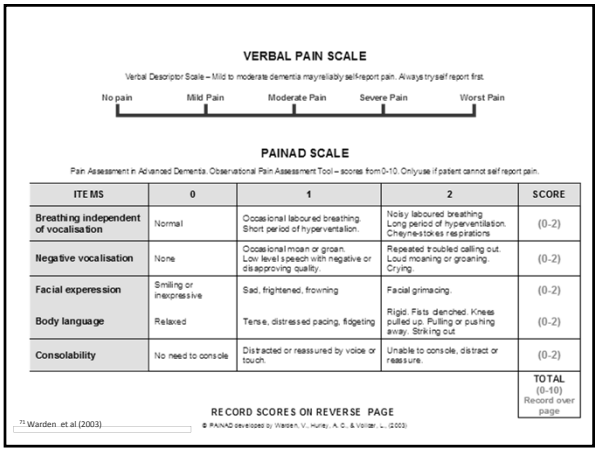
[62] Pieper et al (2013), [63] Miu et al (2014), [64] Morrison & Siu (2000), [65]AGS (2002), [66] Hadjistavropolous et al (2008), [62] Pieper et al (2013), [67] Morrison et al (2003), [68] Kassalaiinen (2007), [69] Kovach et al (2006), [70] Herr et al (2006)

Guiding principles for Assessing Pain in Cognitive Impairment

- Self report
- Painful conditions or treatments
- Observe behaviours
- Surrogate reporting
- Analgesic trial

[70] Herr, K., Coyne, P. J., Key, T., Manworren, R., McCaffery, M., Merkel, S., . . . Wild, L. (2006). Pain assessment in the nonverbal patient: Position statement with clinical practice. *Pain Management Nursing, 7*(2), 44-52.





VERBAL PAIN SCALE

Verbal Descriptor Scale – Mild to moderate dementia may reliably self-report pain. Always try self report first.

No pain | Mild Pain | Moderate Pain | Severe Pain | Worst Pain

PAINAD SCALE

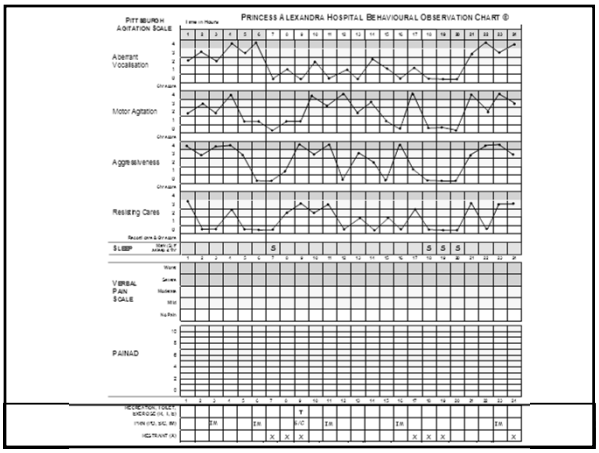
Pain Assessment in Advanced Dementia. Observational Pain Assessment Tool – scores from 0-10. Only use if patient cannot self report pain.

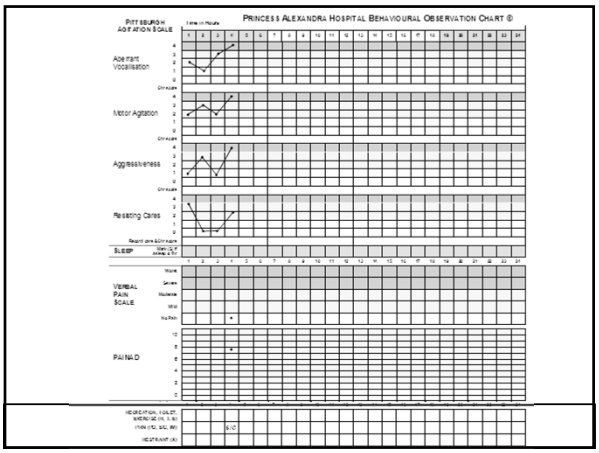
ITEMS	0	1	2	SCORE
Breathing independent of vocalisation	Normal	Occasional laboured breathing. Short period of hyperventilation.	Noisy laboured breathing. Long period of hyperventilation. Cheyne-stokes respirations	(0-2)
Negative vocalisation	None	Occasional moan or groan. Low level speech with negative or disapproving quality.	Repeated troubled calling out. Loud moaning or groaning. Crying.	(0-2)
Facial experession	Smiling or inexpressive	Sad, frightened, frowning	Facial grimacing.	(0-2)
Body language	Relaxed	Tense, distressed pacing, fidgeting	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out	(0-2)
Consolability	No need to console	Distracted or reassured by voice or touch.	Unable to console, distract or reassure.	(0-2)
				TOTAL (0-10) Record over page

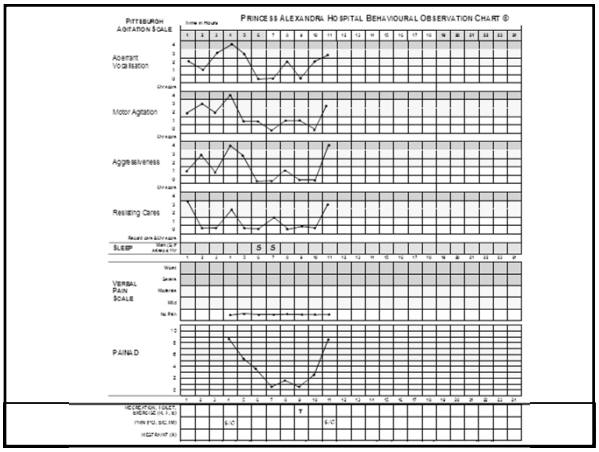
RECORD SCORES ON REVERSE PAGE

© PAINAD developed by Warden, V., Hurley, A. C., & Volicer, L., (2003)

[71] Warden. et al (2003)




PITTSBURGH AGITATION SCALE
PRINCESS ALEXANDRA HOSPITAL BEHAVIOURAL OBSERVATION CHART ©
Time in Hours
Aberrant Vocalisation
Motor Agitation
Aggressiveness
Resisting Cares
SLEEP
VERBAL PAIN SCALE
PAINAD
S/C


PITTSBURGH AGITATION SCALE
PRINCESS ALEXANDRA HOSPITAL BEHAVIOURAL OBSERVATION CHART ©
Time in Hours
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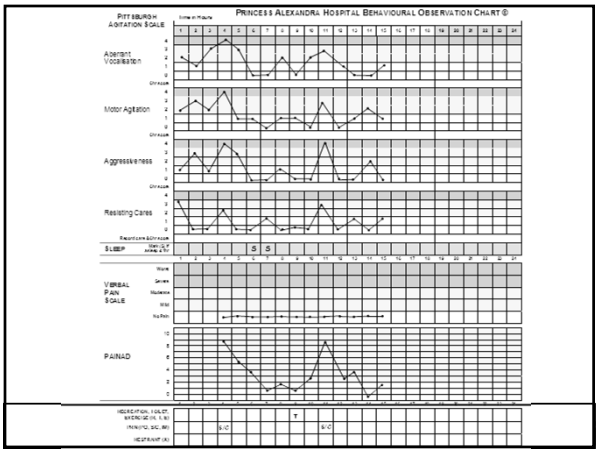
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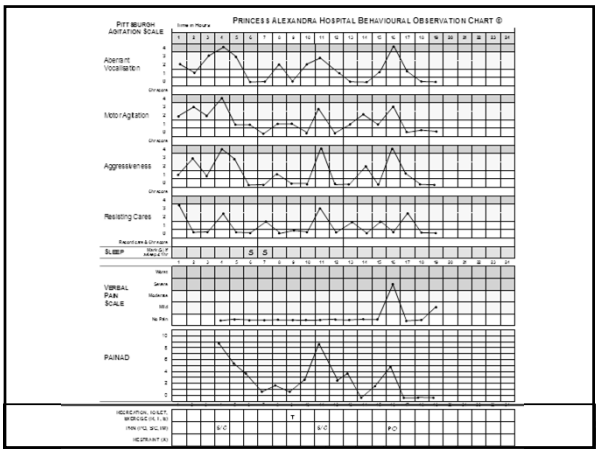
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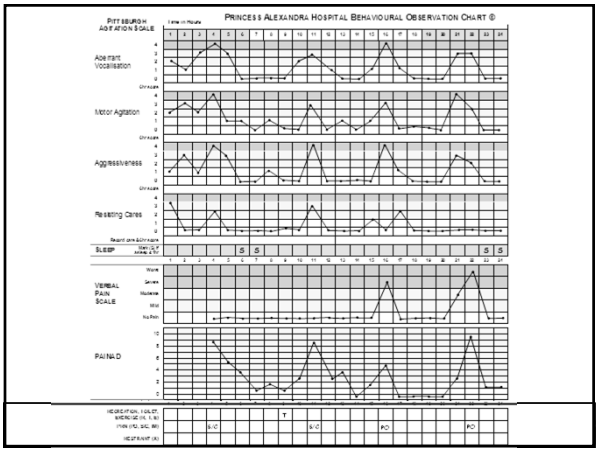
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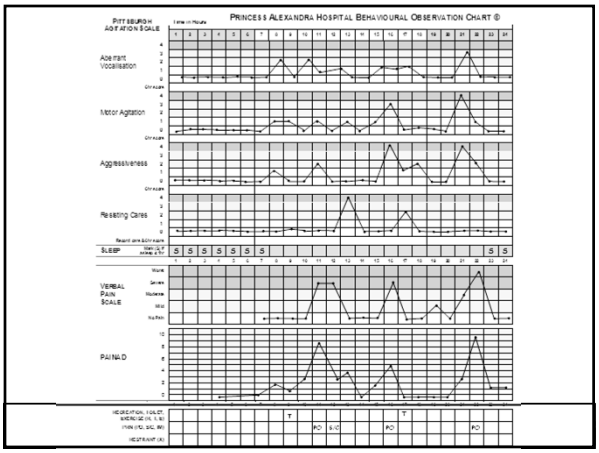
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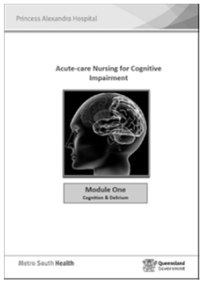
CNC Dementia and delirium

(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

[72] Inouye S. K et al (1990) Clarifying confusion: The Confusion assessment method. A new method for detection of delirium. *Ann. Intern. Med* 113, 941-8

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Cognition Champions

Recruited through education rollout:

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

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Cognition Champions

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Cognition Corners

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Box of Activities

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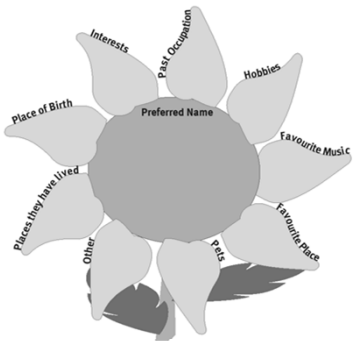

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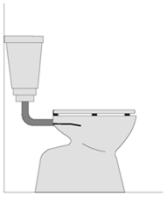
Shower



Toilet

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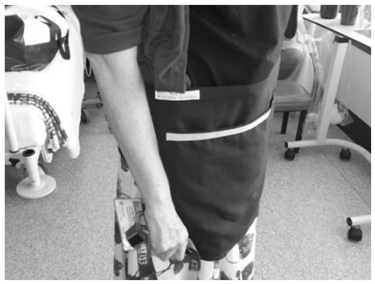

IDC decoy

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Bedside Table Fiddle Blankets

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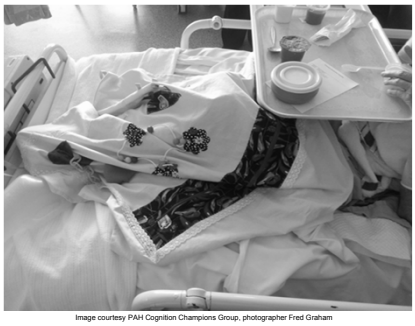
Fiddle Blanket



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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

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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

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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
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Princess Alexandra Hospital

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

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