

# Changed Behaviours

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Jingeri.

We acknowledge the Traditional Custodians of the land in which we work, live and grow, the Kombumerri, Wangerriburra, Bullongin, Minjungbal and Birinburra peoples, of the Yugambah Language speaking nation. We also pay our respects to Elders past, present and emerging. We also acknowledge other Aboriginal and Torres Strait Islander people present today.



# Diagnostic dilemma



# Mental Health Disorders

Anxiety  
Depression  
Personality Disorders  
Schizophrenia













# Delirium

- DSM V
  - Disturbance in **attention** and **awareness**
  - **Change in cognition** that is not better accounted for by a pre-existing, established, or evolving dementia.
  - The disturbance develops over a **short period** and tends to fluctuate during the course of the day.
  - There is evidence from the history, physical examination, or laboratory findings that the disturbance is **caused by a direct physiologic consequence** of a general medical condition, an intoxicating substance, medication use, or more than one cause.

# 4AT



Patient name: \_\_\_\_\_ (B De)

Date of birth: \_\_\_\_\_

Patient number: \_\_\_\_\_

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Date: \_\_\_\_\_ Time: \_\_\_\_\_

Tester: \_\_\_\_\_

**Assessment test for delirium & cognitive impairment**

**[1] ALERTNESS**

*This includes patients who may be markedly drowsy (eg. difficult to rouse and/or obviously sleepy during assessment) or agitated/hyperactive. Observe the patient. If a sleep, attempt to wake with speech or gentle touch on shoulder. Ask the patient to state their name and address to assist rasing.*

Normal (fully alert, but not agitated, throughout assessment)	0
Mild sleepiness for <10 seconds after waking, then normal	0
Clearly abnormal	4

**[2] AMT4**

*Age, date of birth, place (name of the hospital or building), current year.*

No mistakes	0
1 mistake	1
2 or more mistakes/untestable	2

**[3] ATTENTION**

*Ask the patient: "Please tell me the months of the year in backwards order, starting at December." To assist initial understanding one prompt of "what is the month before December?" is permitted.*

Months of the year backwards	Achieves 7 months or more correctly	0
	Starts but scores <7 months / refuses to start	1
	Unstable (cannot start because unwell, drowsy, inattentive)	2

**[4] ACUTE CHANGE OR FLUCTUATING COURSE**

*Evidence of significant change or fluctuation in: alertness, cognition, other mental function (eg. paranoia, hallucinations) arising over the last 2 weeks and still evident in last 24hrs*

No	0
Yes	4

4 or above: possible delirium +/- cognitive impairment  
 1-3: possible cognitive impairment  
 0: delirium or severe cognitive impairment unlikely (but delirium still possible if [4] information incomplete)

**4AT SCORE**

**GUIDANCE NOTES**

Version 1.2. Information and download: [www.the4at.com](http://www.the4at.com)  
 The 4AT is a screening instrument designed for rapid initial assessment of delirium and cognitive impairment. A score of 4 or more suggests delirium but is not diagnostic: more detailed assessment of mental status may be required to reach a diagnosis. A score of 1-3 suggests cognitive impairment and more detailed cognitive testing and informant history-taking are required. A score of 0 does not definitively exclude delirium or cognitive impairment: more detailed testing may be required depending on the clinical context. Items 1-3 are rated solely on observation of the patient at the time of assessment. Item 4 requires information from one or more source(s), eg. your own knowledge of the patient; other staff who know the patient (eg. ward nurses), GP letter, case notes, carers. The tester should take account of communication difficulties (hearing impairment, dysphasia, lack of common language) when carrying out the test and interpreting the score.  
**Alertness:** Altered level of alertness is very likely to be delirium in general hospital settings. If the patient shows significant altered alertness during the bedside assessment, score 4 for this item. **AMT4 (Abbreviated Mental Test - 4):** This score can be extracted from items in the AMT 10 if the latter is done immediately before. **Acute Change or Fluctuating Course:** Fluctuation can occur without delirium in some cases of dementia, but marked fluctuation usually indicates delirium. To help elicit any hallucinations and/or paranoid thoughts ask the patient questions such as, "Are you concerned about anything going on here?"; "Do you feel frightened by anything or anyone?"; "Have you been seeing or hearing anything unusual?"

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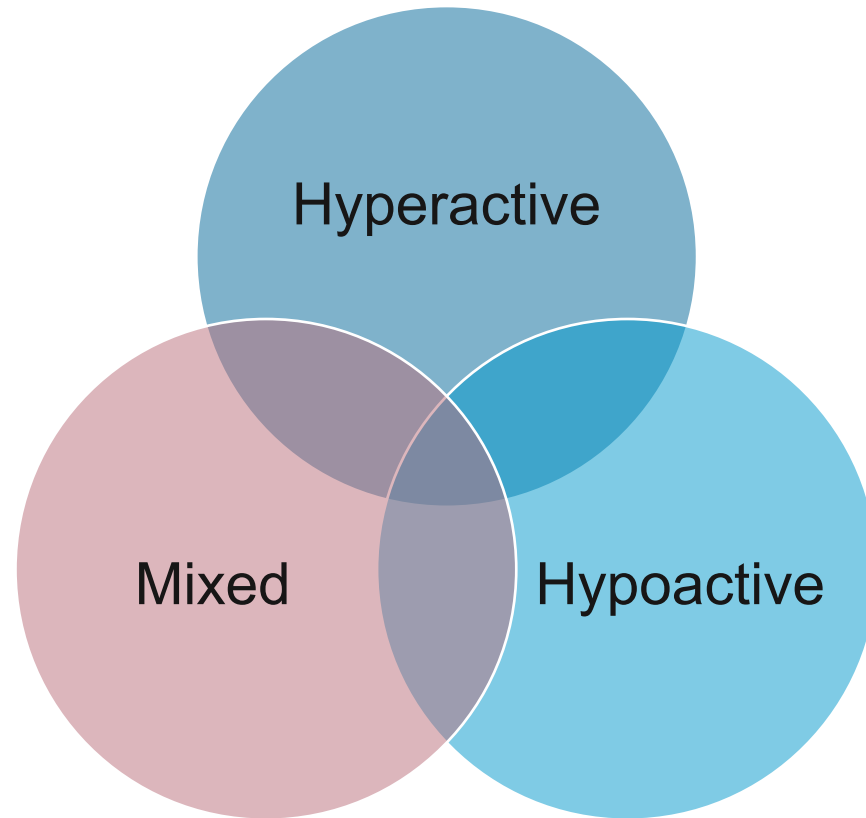
Alertness

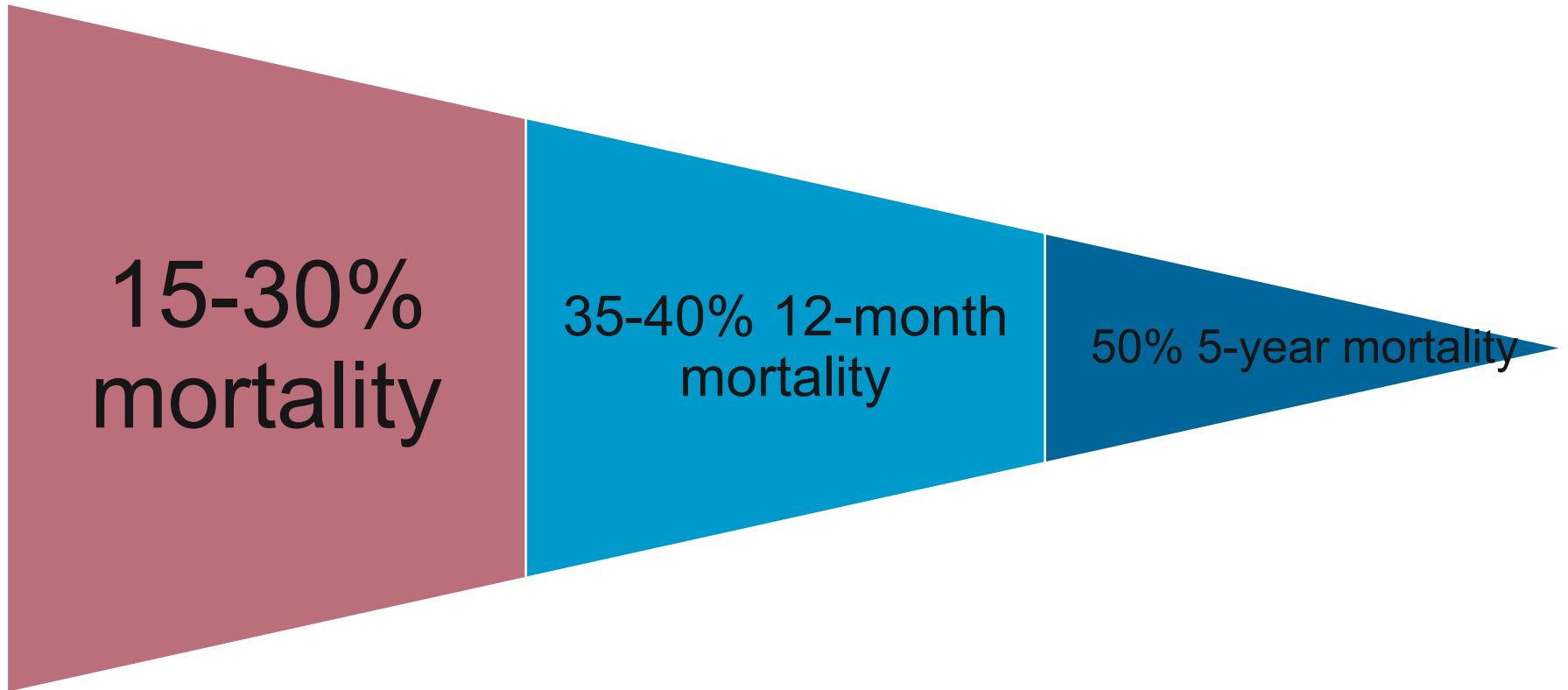
AMT4

Attention

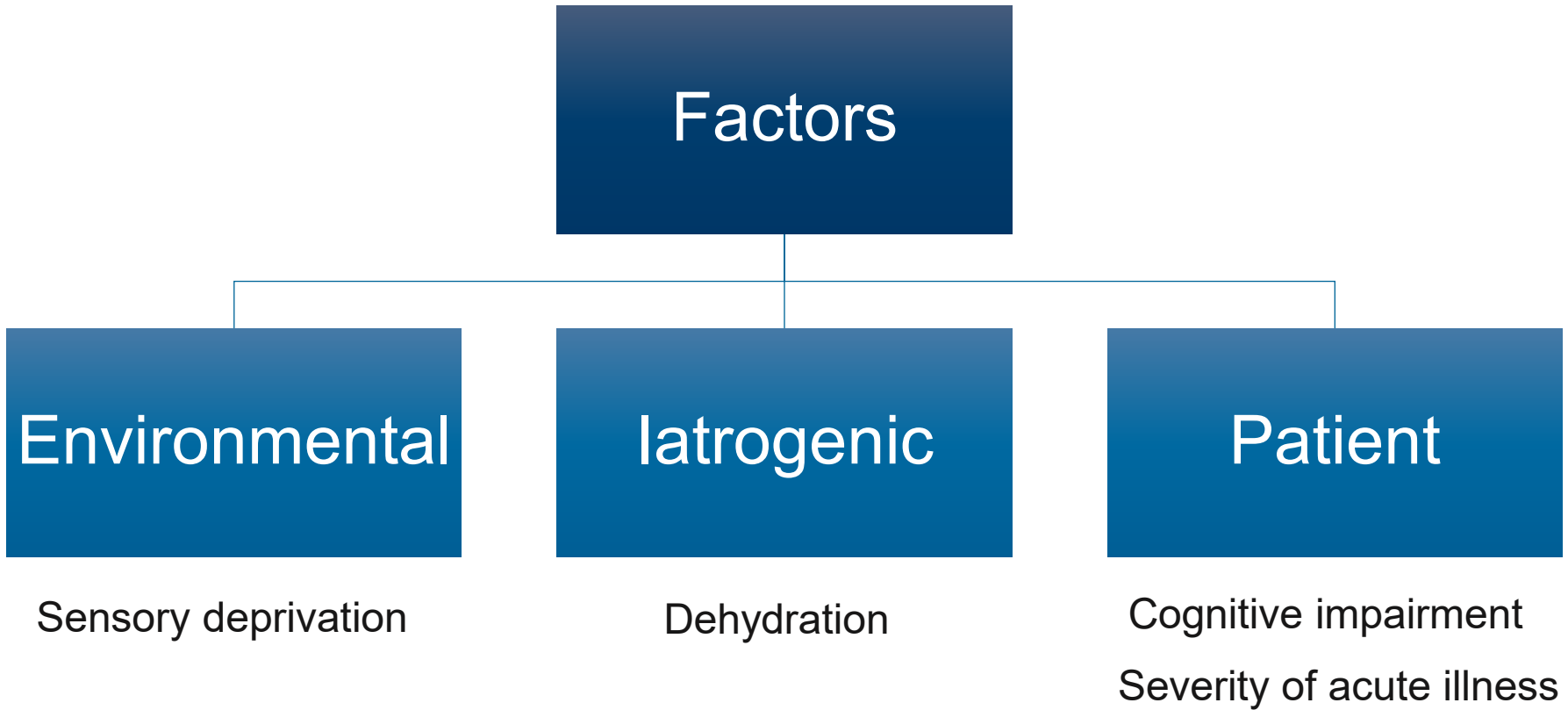
Acute or fluctuating course



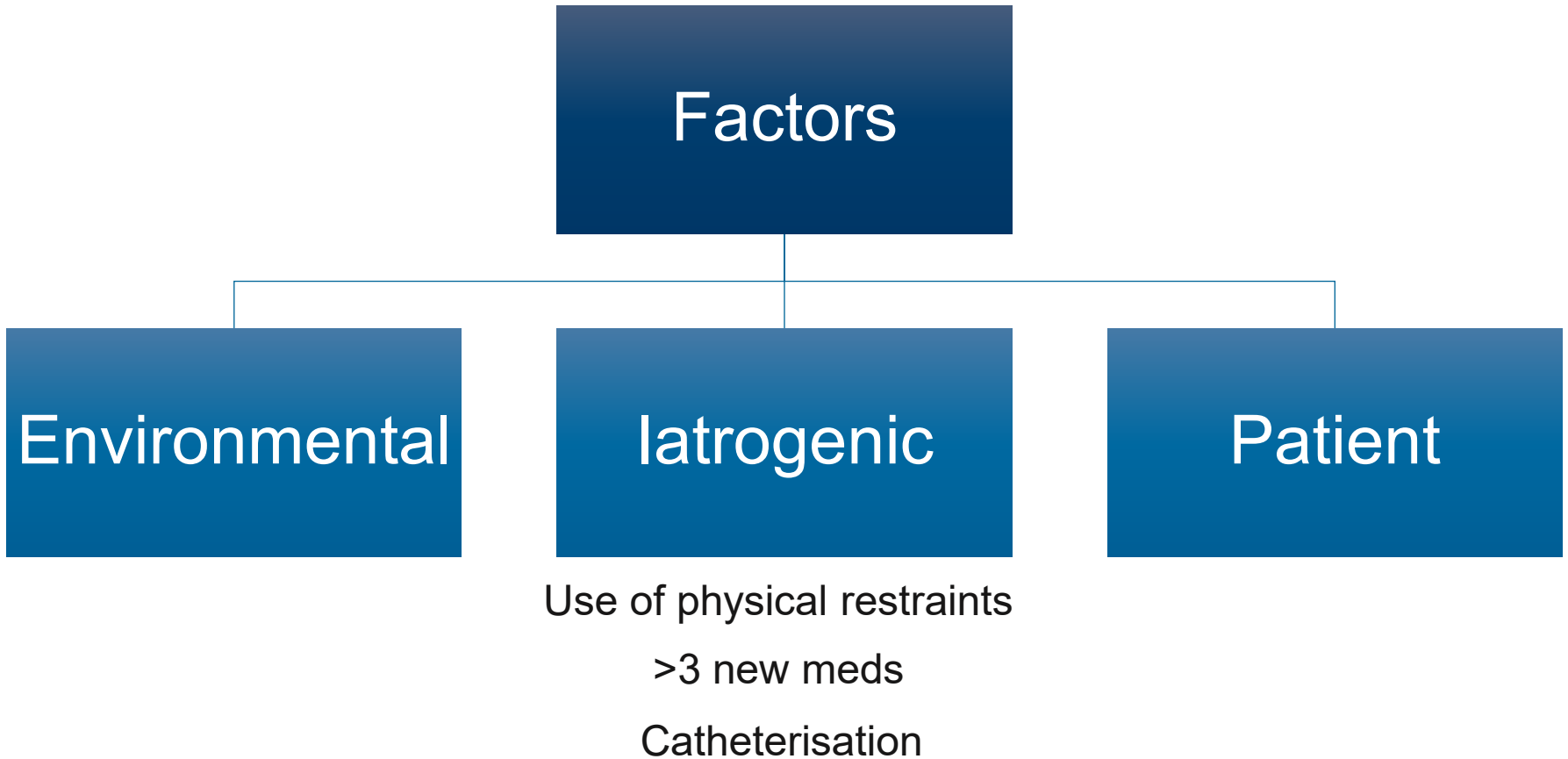


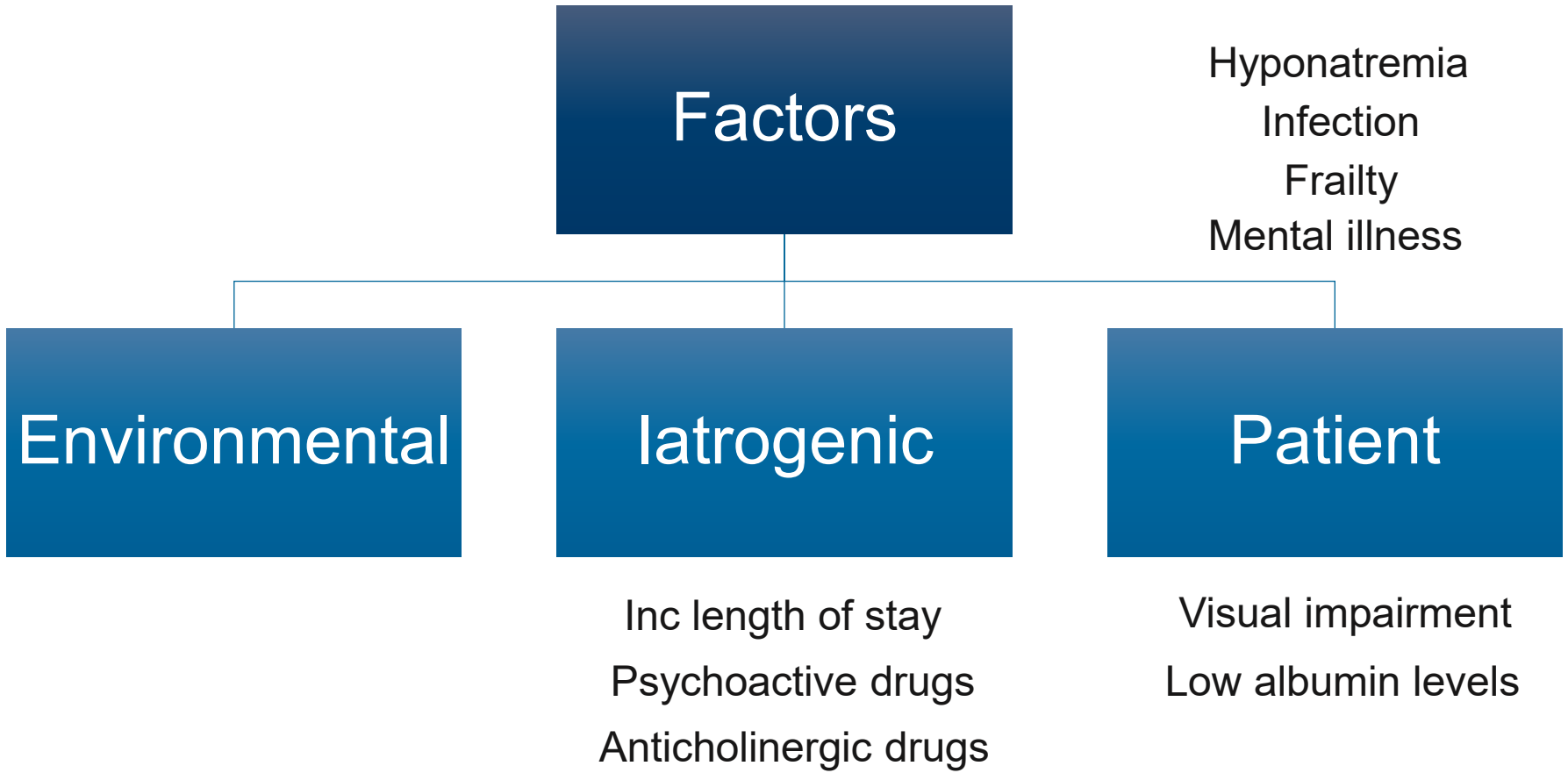






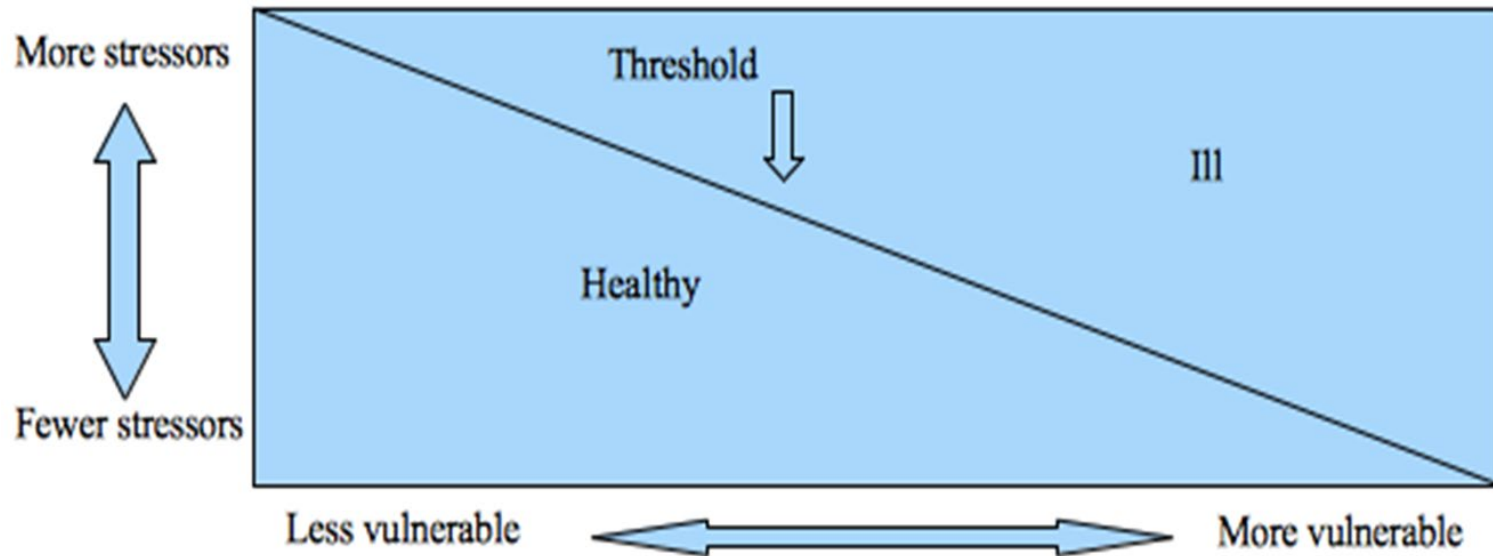


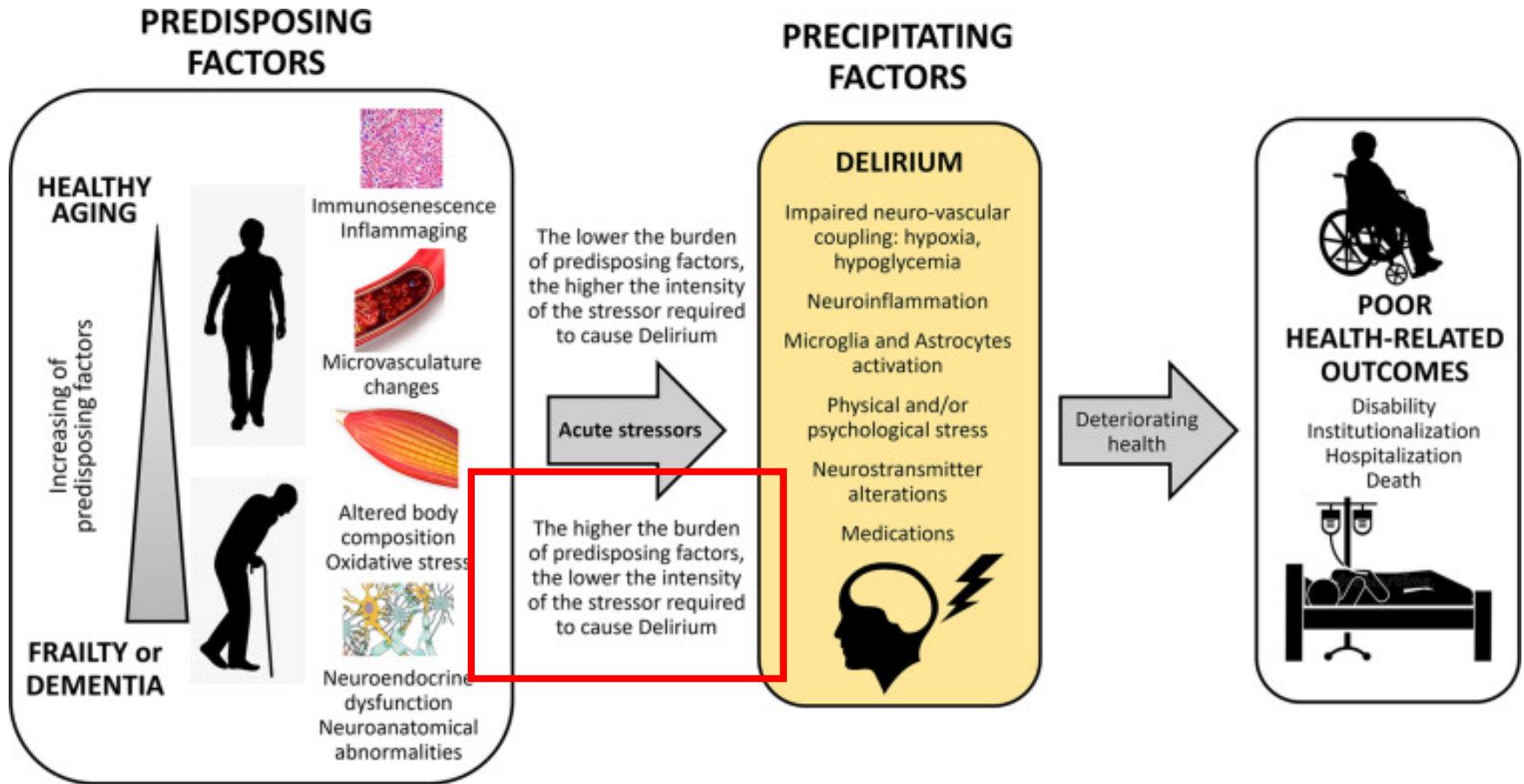




Pre-admission risk group	Rate of delirium (per 100 person-days)		
	Precipitating factors risk group		
	Low	Intermediate	High
Low	0	0	0
Intermediate	0.8	2.3	4.3
High	0	5.0	11.6

## Stress Vulnerability Model





Agitation

Disinhibition

Irritability

Euphoria

Delusions

Hallucinations

Night-time  
disturbances

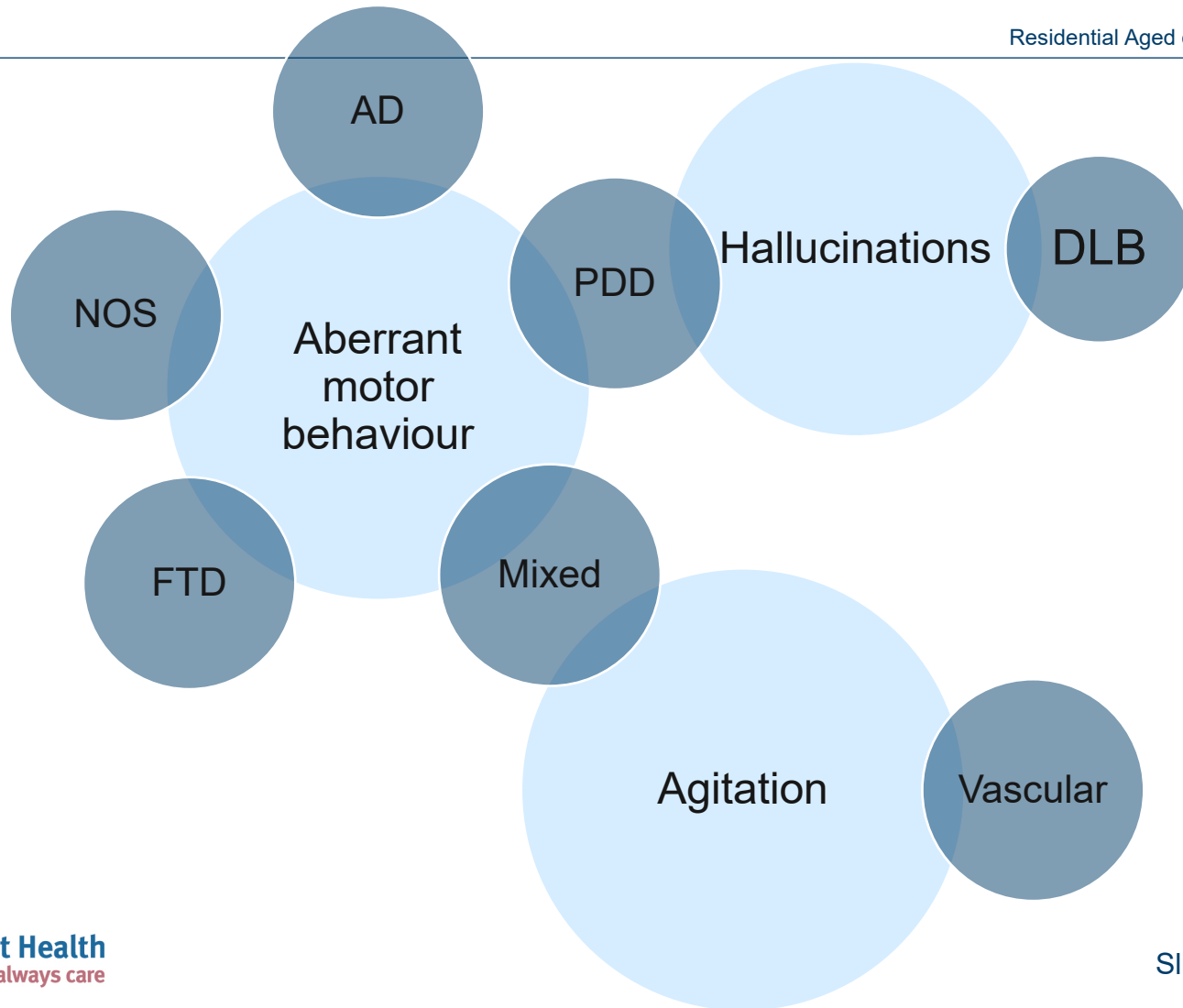
Aberrant  
motor  
behaviour

Depression

Anxiety

Apathy

Eating  
abnormalities



	<b>Mild</b>	<b>Moderate</b>	<b>Severe</b>
Apathy	47%	67%	92%
Agitation	47%	45%	85%
Aberrant motor	12%	53%	84%
Depression	12%	52%	62%
Anxiety	24%	49%	54%
Irritability	35%	35%	54%
Delusions	12%	37%	31%
Disinhibition	35%	22%	31%
Hallucinations	12%	24%	8%
Euphoria	18%	8%	8%



# Alzheimer Disease and Behavioural Changes

Stage

**Mild**

**Moderate**

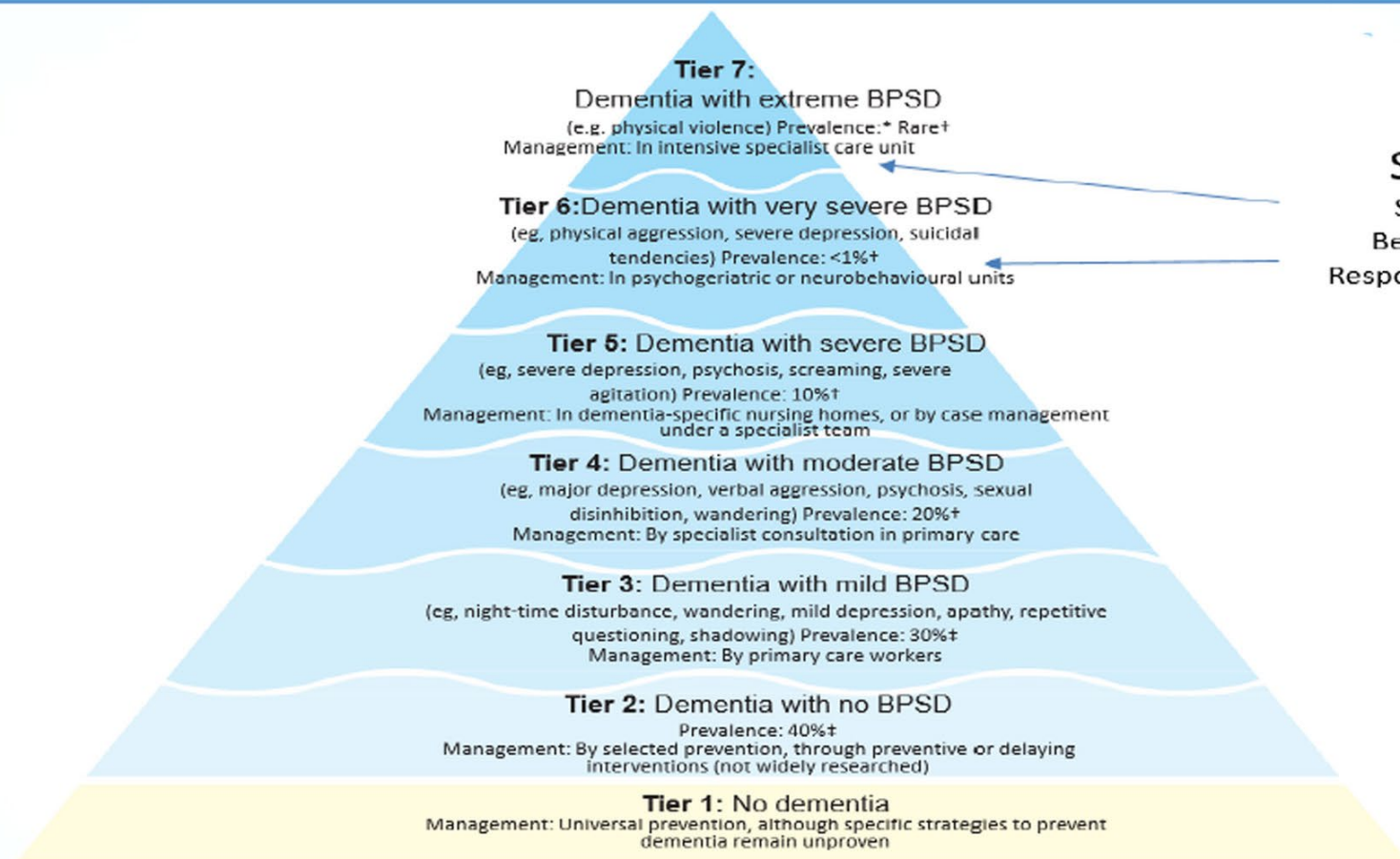
**Severe**

Symptoms

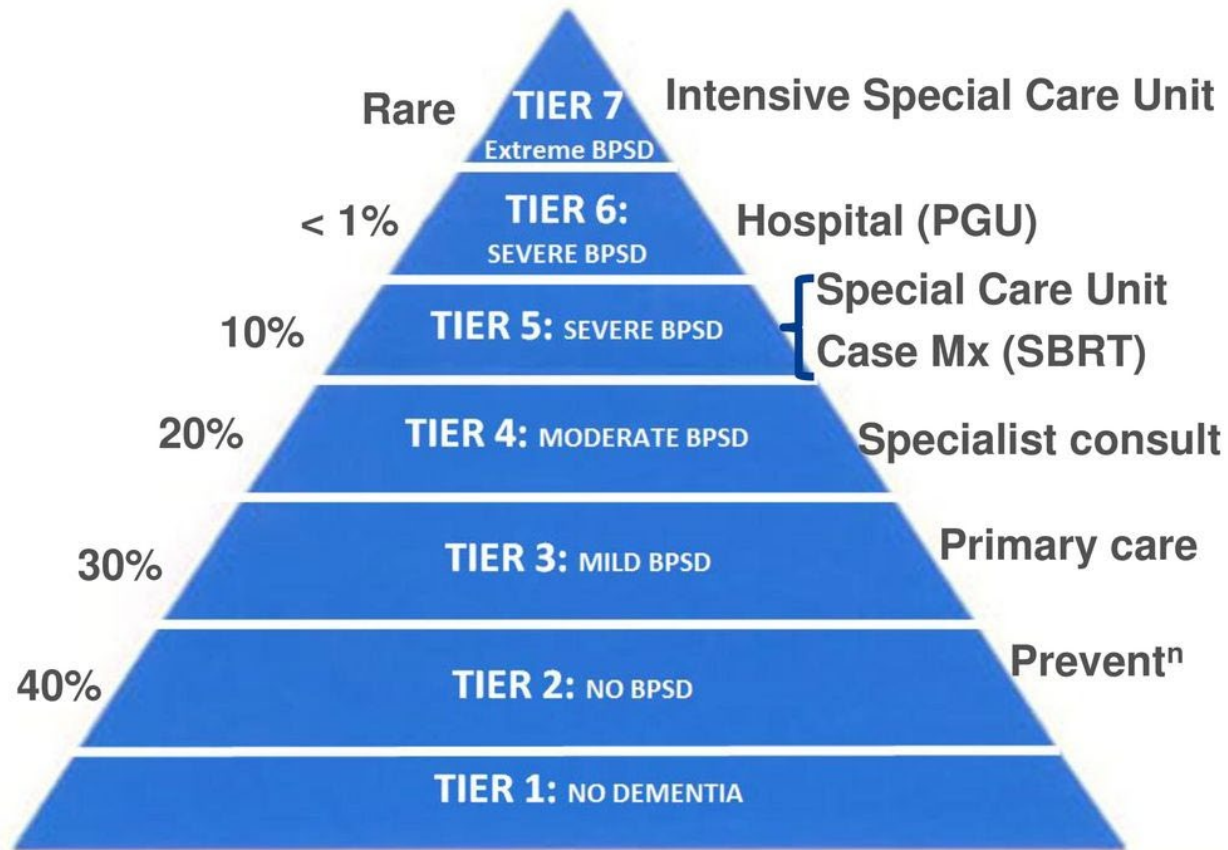
- Memory Loss
- Aphasia
- Mood Swings
- Personality Changes
- Problems with Executive Functions & Judgement

- Behaviour & Personality Changes
- Unable to learn/recall new info [LTM]
- Wandering
- Agitation
- Aggression
- Confusion
- Needs assistance with ADL

- Incontinence
- Gait & Motor disturbances
- Bedridden
- Unable to perform ADL
- Resistant to care
- Consider Placement in LTC

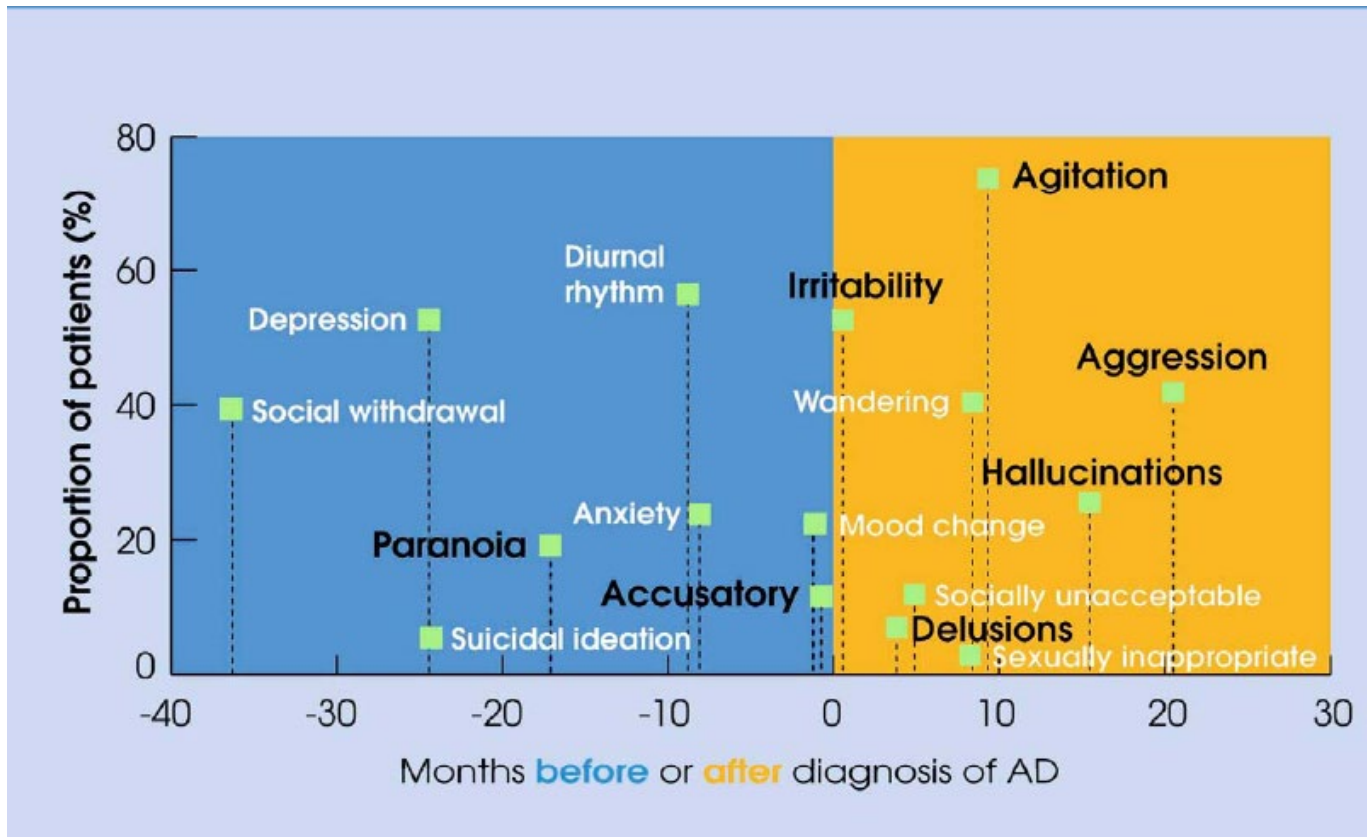


**Seven-tiered model of management of behavioural and psychological symptoms of dementia:** Brodaty, Draper and Low (2003)



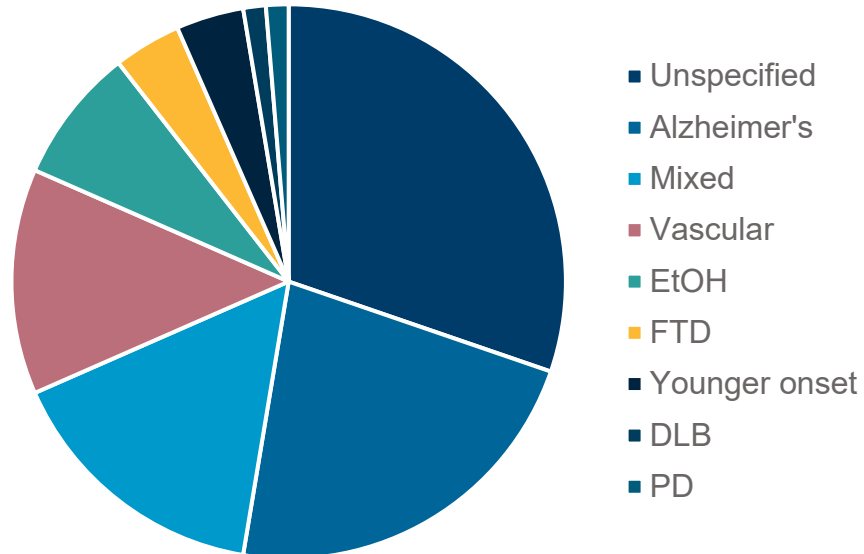
Brodaty, Draper & Low (2003) Behavioural and psychological symptoms of dementia: A seven-tiered model of service delivery. MJA; 178: 231–234





	n	%	Mean (SD)	Range
Demographic characteristics				
Aged at entry (years)	79 (1 missing)		72.25 (8.21)	56-88
# of males	54	70.2%		
LoS at SDCP	73	433.9 (382.78)	7-2088	

[Specialist residential dementia care for people with severe and persistent behaviours: A ten-year retrospective review](#)



	n	Admission mean (SD)	Admission median	Discharge mean (SD)	Discharge median	W	p
Regular antipsychotics ( <i>mg chlorpromazine</i> )	44	195.5 (165.2)	162.5	109.7 (120.6)	100.0	527.0	<0.001
PRN antipsychotics ( <i>mg chlorpromazine</i> )	18	100.0 (67.0)	100.0	34.7 (41.5)	25.0	76.5	0.004
Regular anxiolytics ( <i>mg diazepam</i> )	17	20.4 (46.8)	5.0	4.5 (4.3)	5.0	87.0	0.03
PRN anxiolytics ( <i>mg diazepam</i> )	10	25.3 (22.7)	13.75	12.8 (25.0)	0.0	36.0	0.01
Regular opiates ( <i>mg oral morphine</i> )	4	50.9 (67.9)	23.75	11.6 (19.2)	3.1	3.0	0.4
PRN opiates ( <i>mg oral morphine</i> )	3	2.7 (0.6)	3.0	1.7 (1.6)	2.1	1.0	1.0
Paracetamol ( <i>mg</i> )	16	3125.0 (806.2)	3000.0	2811.9 (1249.1)	3000.0	41.0	0.03

# Take home messages

- Many things can look like changed behaviours
- Delirium has a cause
- Responsive changes in dementia are part of the disease process and can fluctuate with the disease process