



# Delirium and dementia: The best of friends, the worst of enemies

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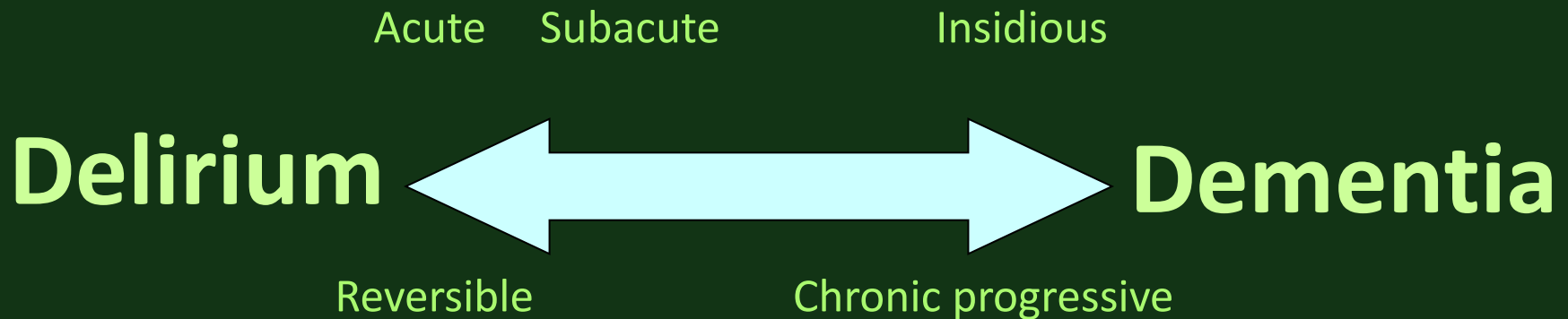
Professor of Psychiatry,  
UL Graduate-Entry Medical School



Two great heavyweights

# Generalised Cognitive Disorders

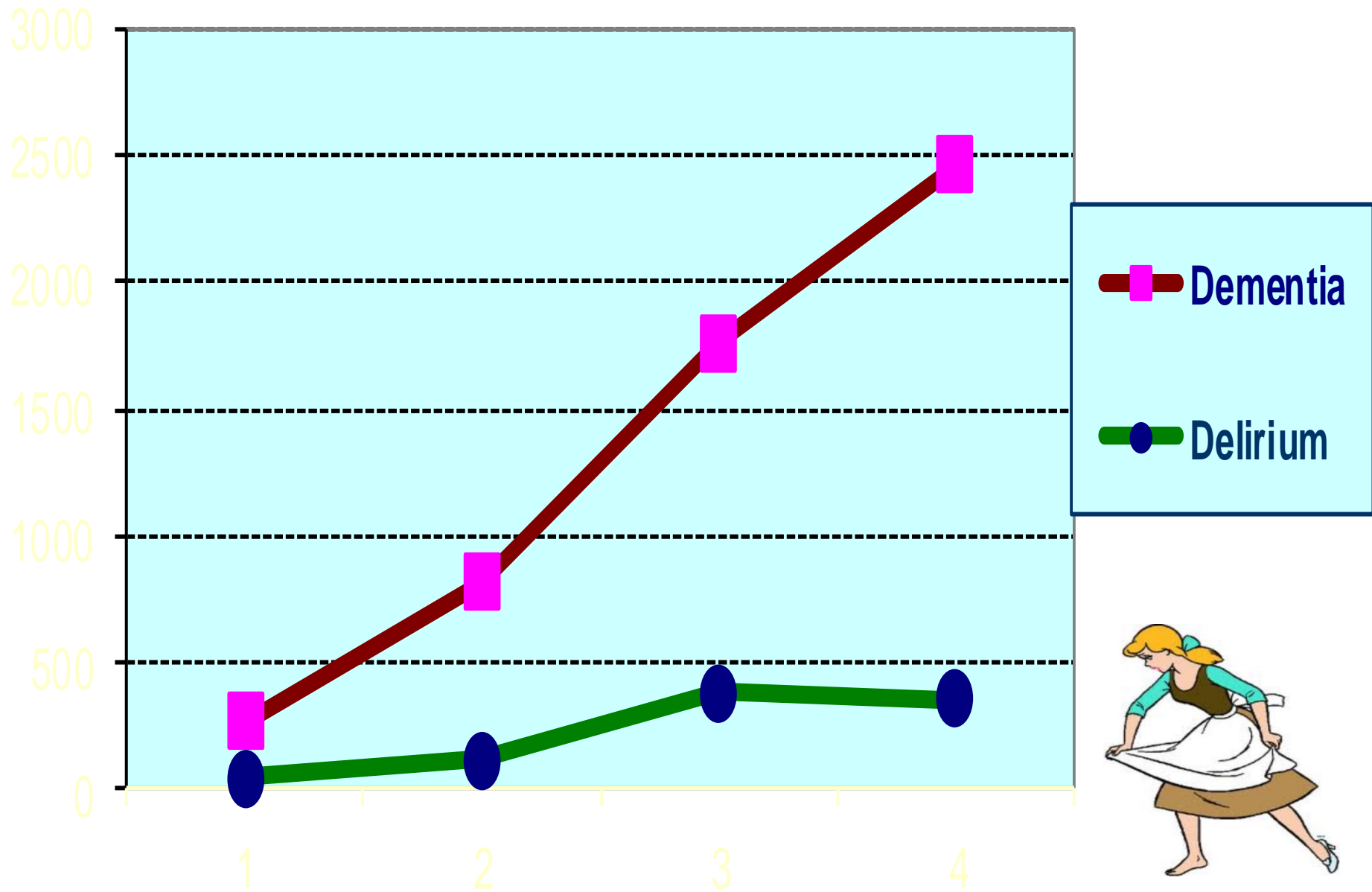
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- 1. Acute onset / fluctuating course
- 2. Prominent Inattention with reduced awareness
- 3. Generalised cognitive impairment
- 4. Underlying etiology

? Overly simple

# Medline citations between 1980 and 2000

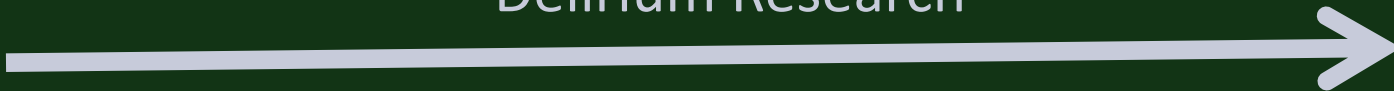


# ? Parallel Universes

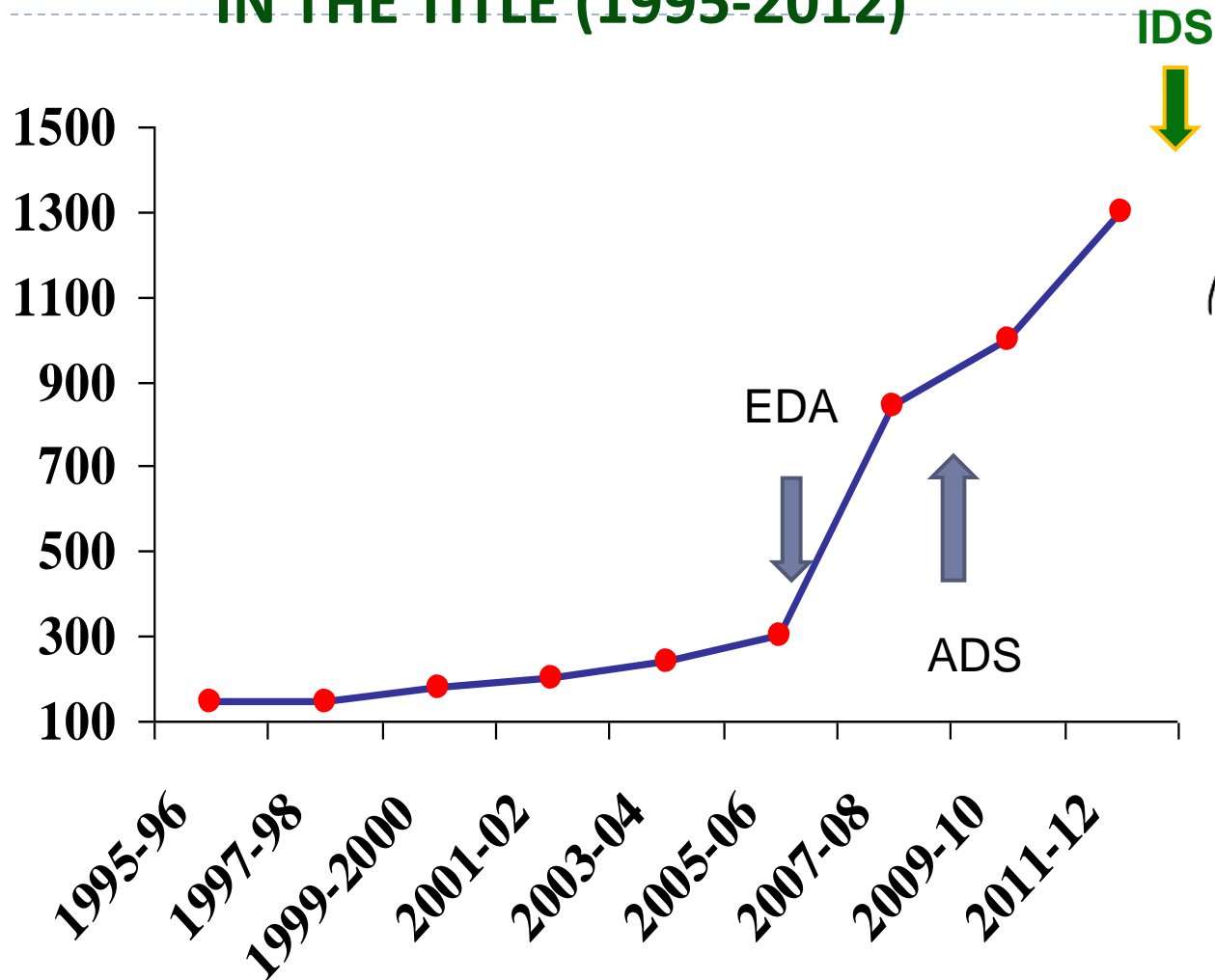
Dementia Research



Delirium Research



# MEDLINE CITATIONS WITH 'DELIRIUM' IN THE TITLE (1995-2012)



So what  
have we  
Learned and  
how is it  
relevant to  
dementia?



## Key Findings

# 1. Delirium is common (and common in dementia)



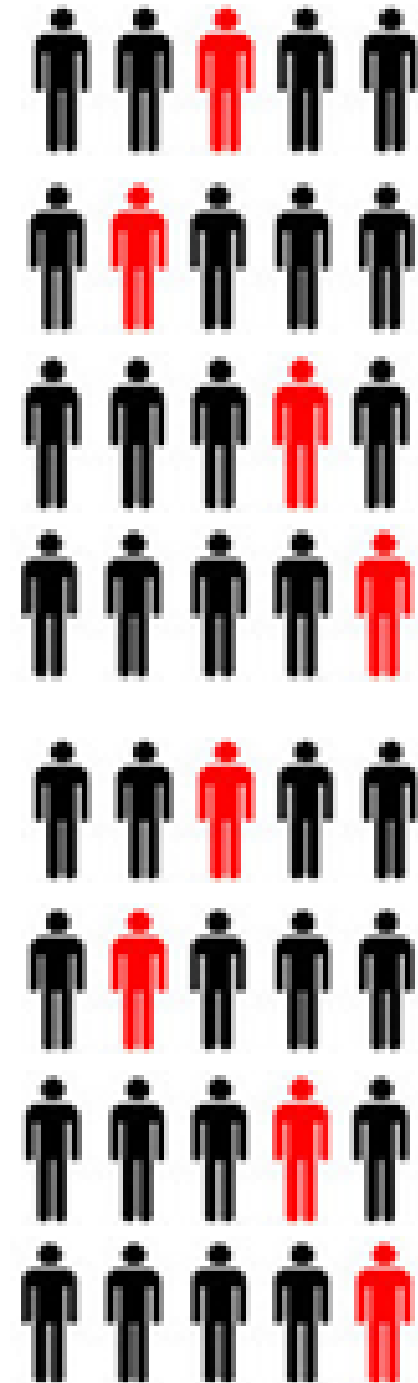
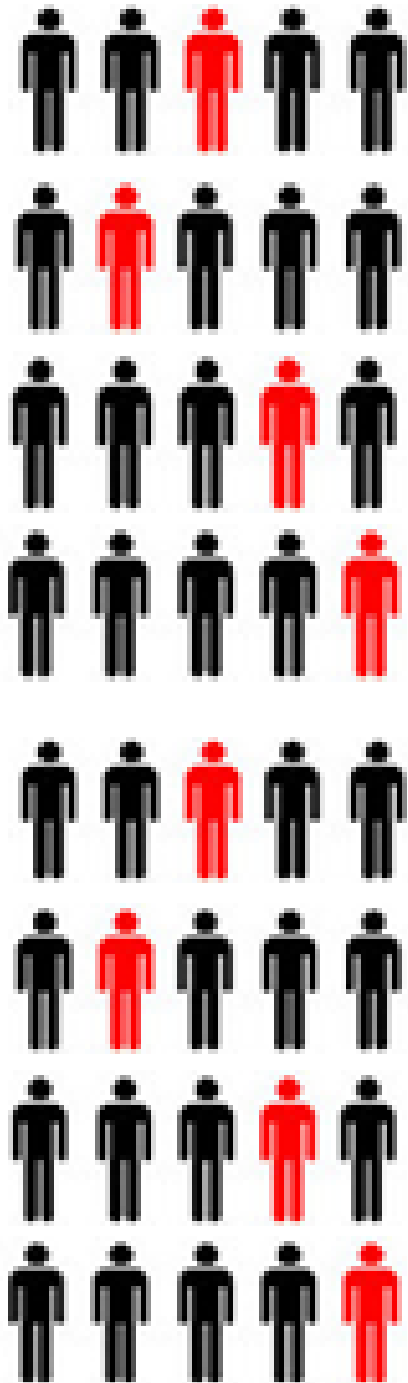
## Siddiqi (2005): SR 42 Studies

Prevalence at admission 10-31%

Incidence during admission 3-29%

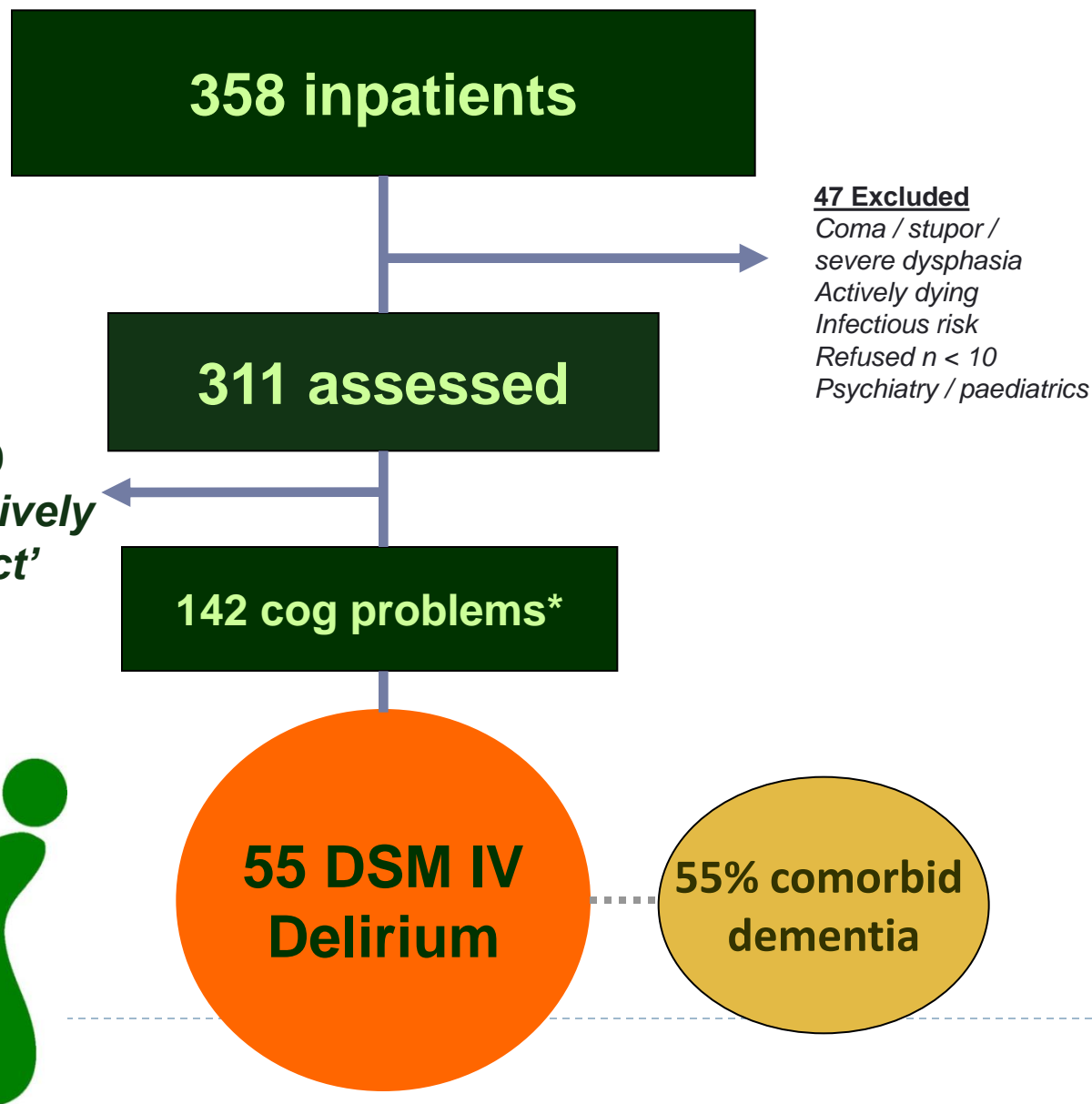
Overall freq per admission 11-42%

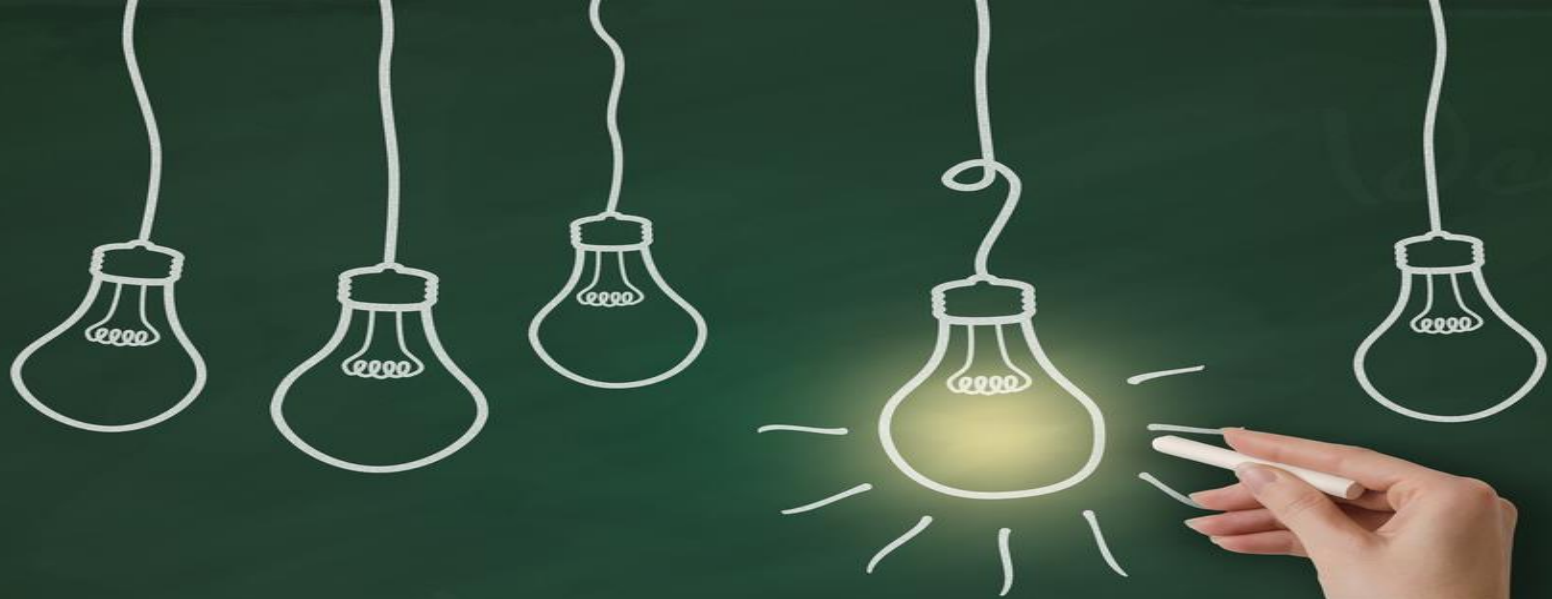
One  
in  
five





# CUH 36 hour point prevalence





## Key Findings

**2. Delirium is prognostically bad**



# Delirium linked to poor outcomes....

**LOS: Doubled**

**Costs of care: Doubled**

**Reduced subsequent  
functional status**

3x less likely to return 'home'

**'New' LTCI**

c30%%

**Increased subsequent  
'new' dementia Diagnosis**

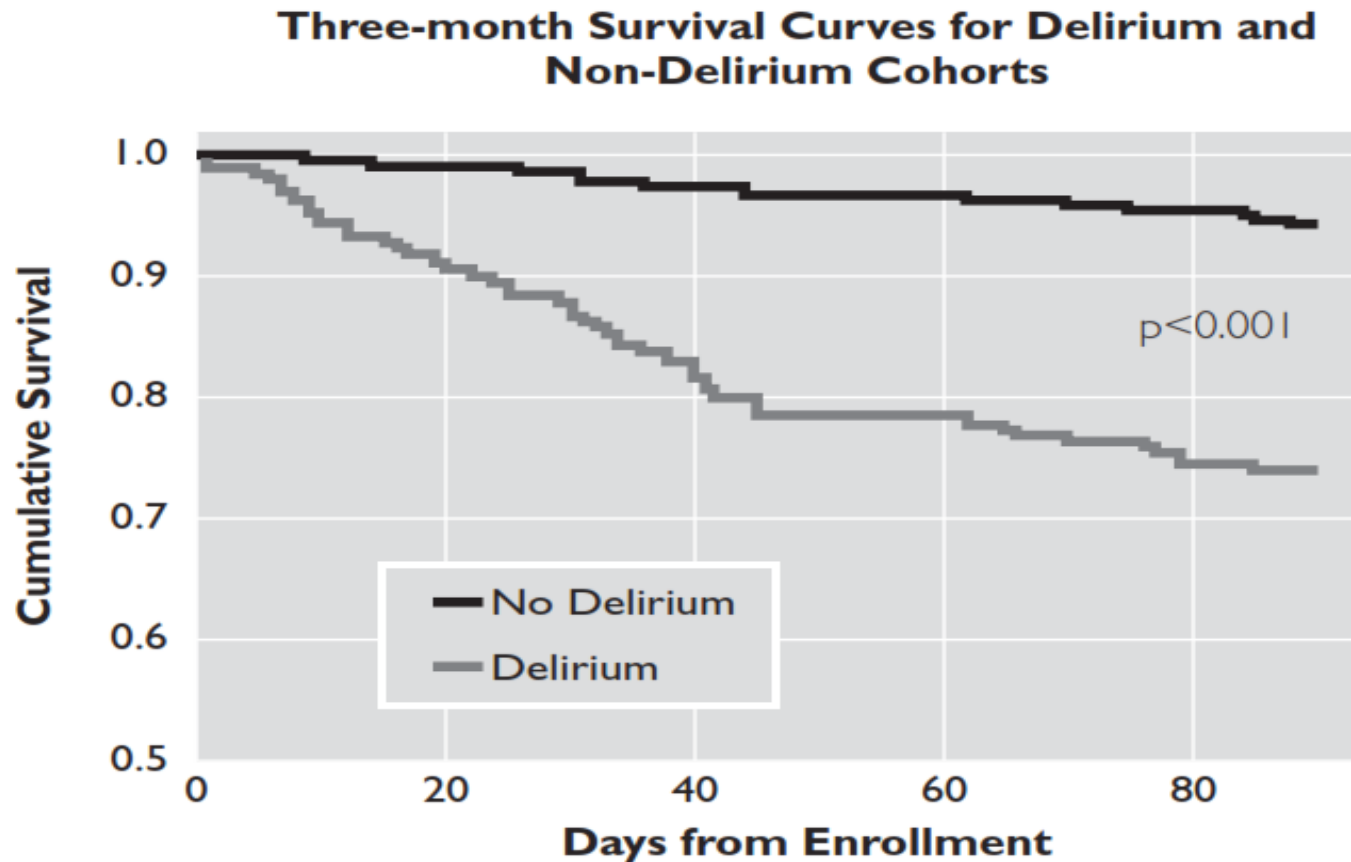
3x increase in following year

**Mortality**



# AND DON'T FORGET...

**FIGURE 1. Kaplan-Meier 3-Month Survival Curves for Delirium and Non-Delirium Cohorts**



Mortality Increased by 11 % for every additional 48 hours of delirium

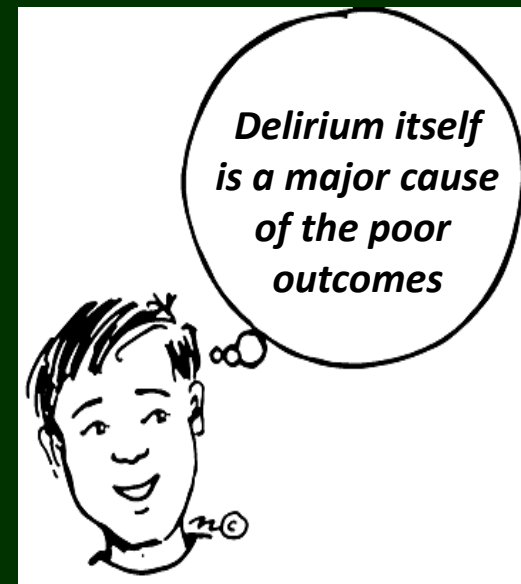
# Poor outcomes

Delirium impacts independent of

- Age
- Frailty
- Comorbidity severity
- **Dementia status**

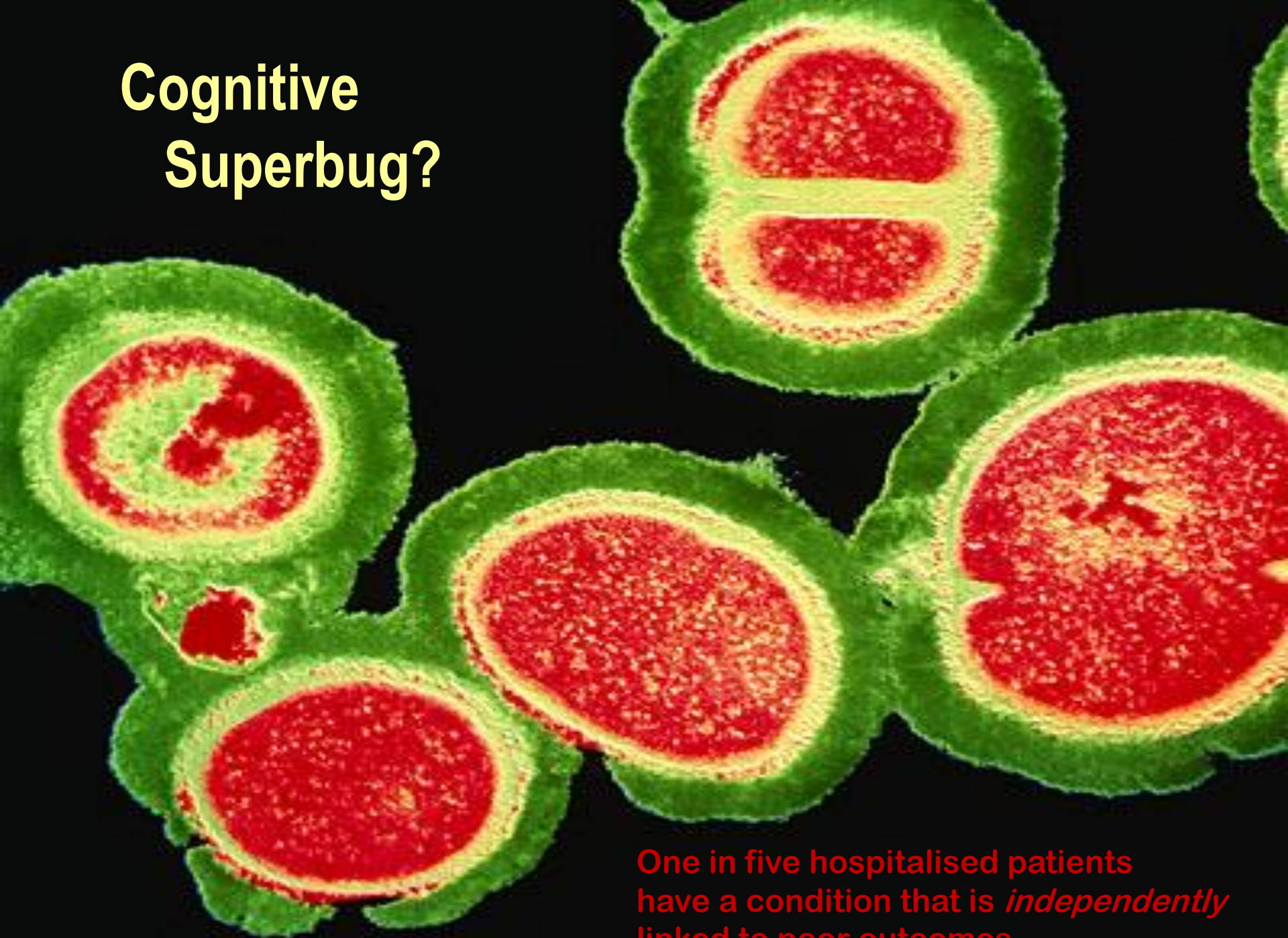
And predicted by

- severity of delirium symptoms
- complications of uncontrolled delirium

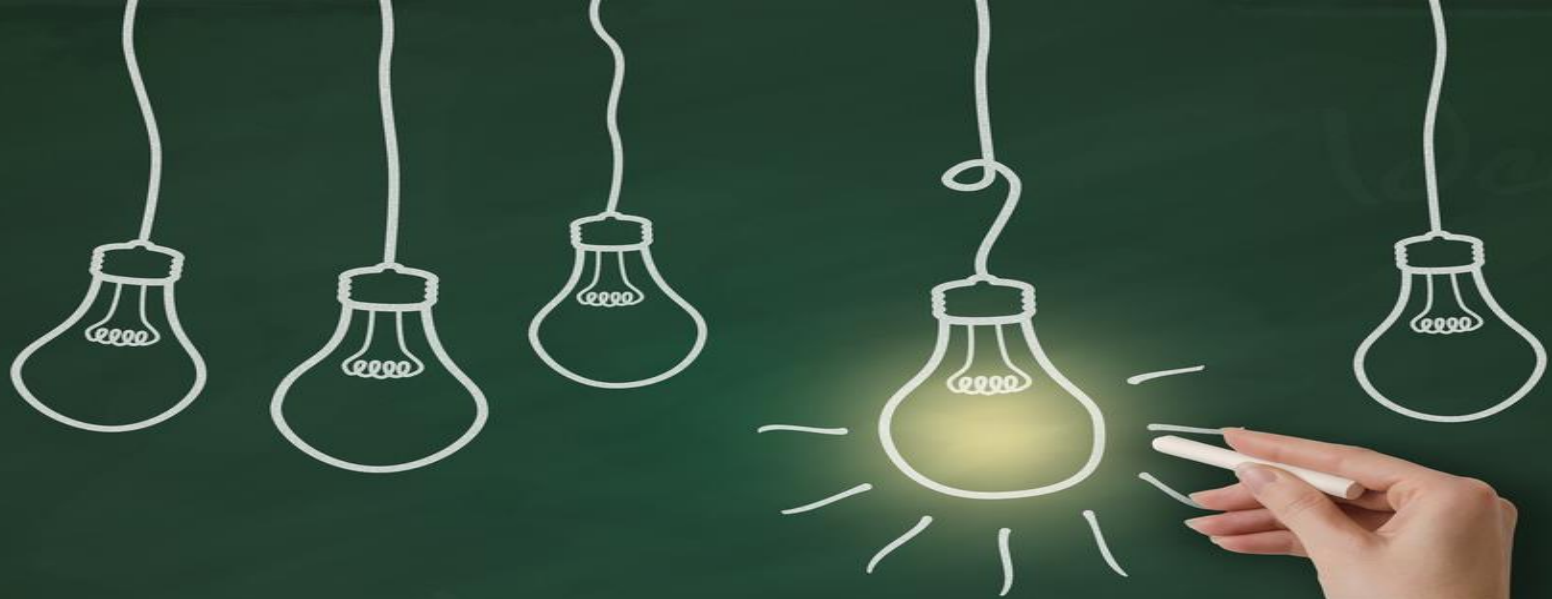




# Cognitive Superbug?



One in five hospitalised patients  
have a condition that is *independently*  
linked to poor outcomes



## Key Findings

**3. Delirium and dementia have a complex bidirectional relationship**



# What do we know about the relationship between delirium and dementia?

- ▶ **High co-morbidity** (50% delirium also dementia; >50% dementia sufferers experience delirium if hospitalised) **AND a bad combination** (dementia patients who develop delirium have 25% more within 30 days)
- ▶ **Misdiagnosis common**
- ▶ **Increased risk of subsequent dementia** (x3 in year after episode; eight-fold in older patients)
- ▶ **? Harbinger vs accelerant or even causal**
- ▶ **Persistent cognitive impairment (LTCl)**





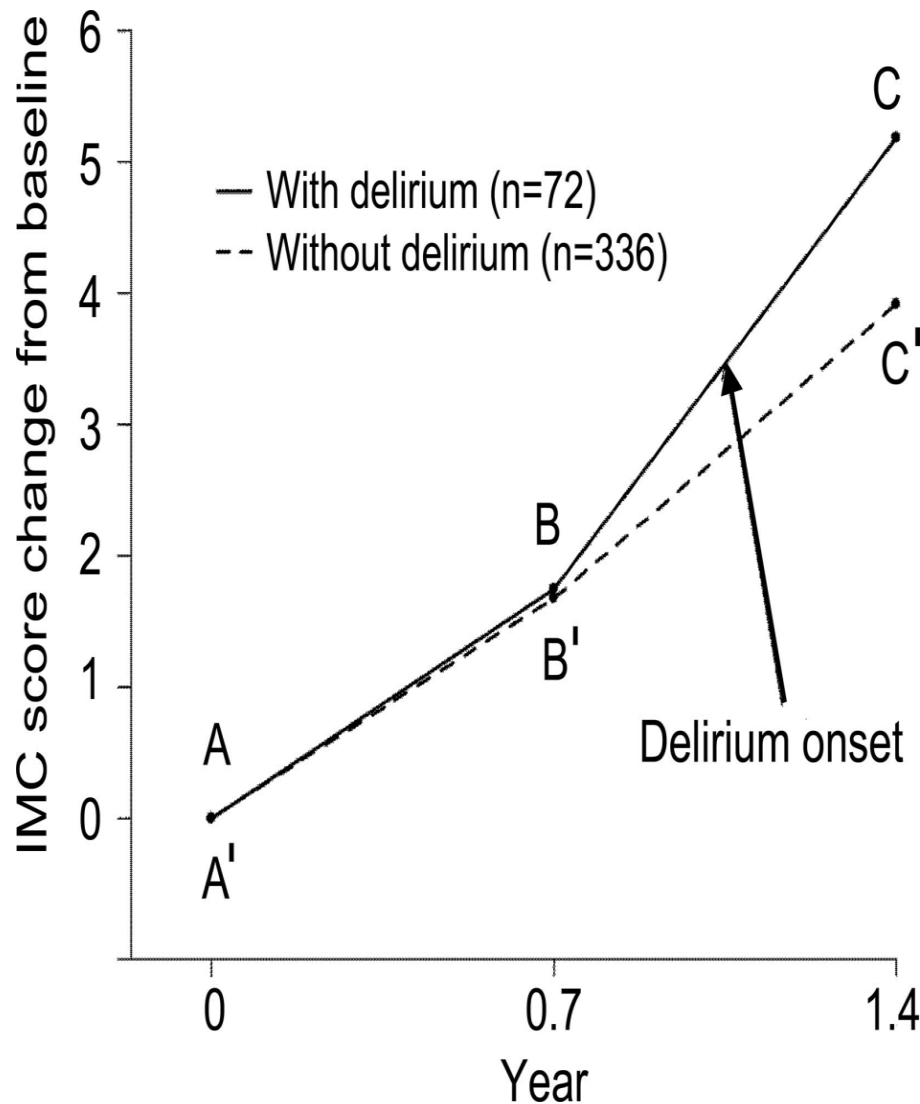
# Jackson et al (2004) & MacLulich et al (2009)

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- ▶ 18 studies of LTCI post delirium with c 4000 patients
- ▶ Clear link between delirium and LTCI  
(30% of older patients)

**LTCI occurs in patients deemed  
cognitively intact pre-delirium**

# Fong et al (2009)



**Information-Memory-Concentration (IMC) :  
decline before (2.5 pts / yr)  
vs after (4.9 points / year)**

**i.e. Doubling of rate of  
progression**

# Persistent Cognitive Deficits Following Delirium Episode: Possible Mechanisms

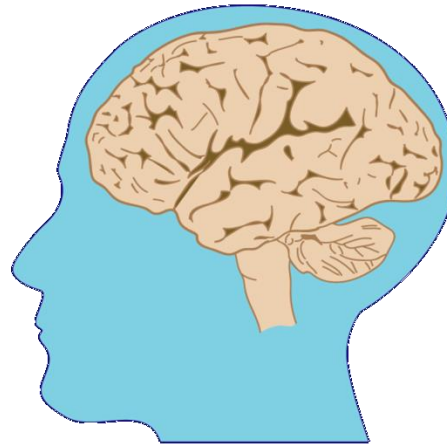
**Neurotoxicity of underlying etiologies**



**Neurotoxicity of medications**



**Neurotoxic effects of delirium complications**



**Unresolved, prolonged, or recurrent delirium**



**Progression or acceleration of preexisting cognitive decline**



**Direct toxic effect of delirious state**



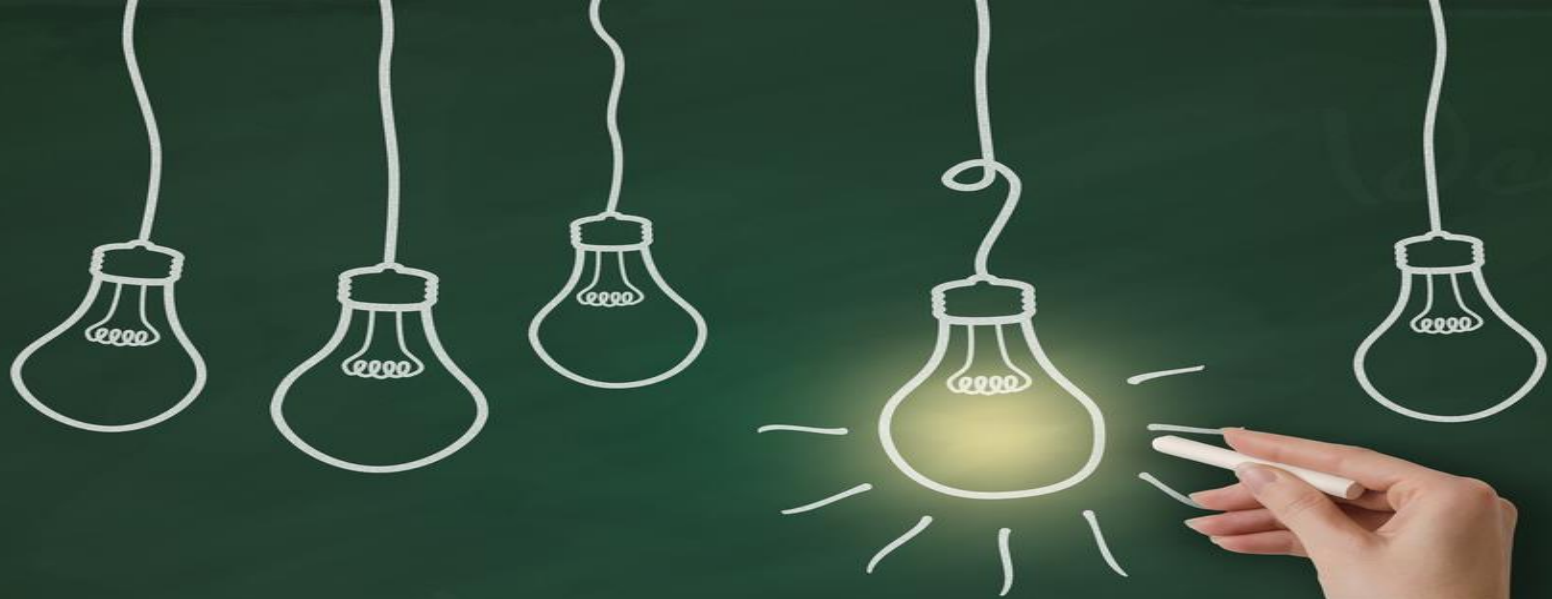
Dysregulation of stress and inflammatory responses

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# **Is delirium the most preventable known risk factor for dementia?**

**Either way – better delirium care = better dementia outcomes**





## Key Findings

**4. Delirium is poorly identified and inconsistently managed**



**Delirium is one of the worst  
managed common conditions in  
modern healthcare systems**

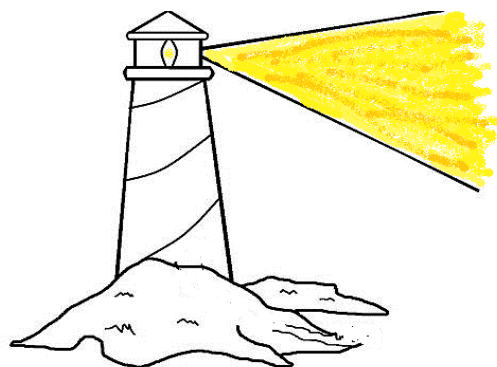


# Missed, misdiagnosed, diagnosed late...

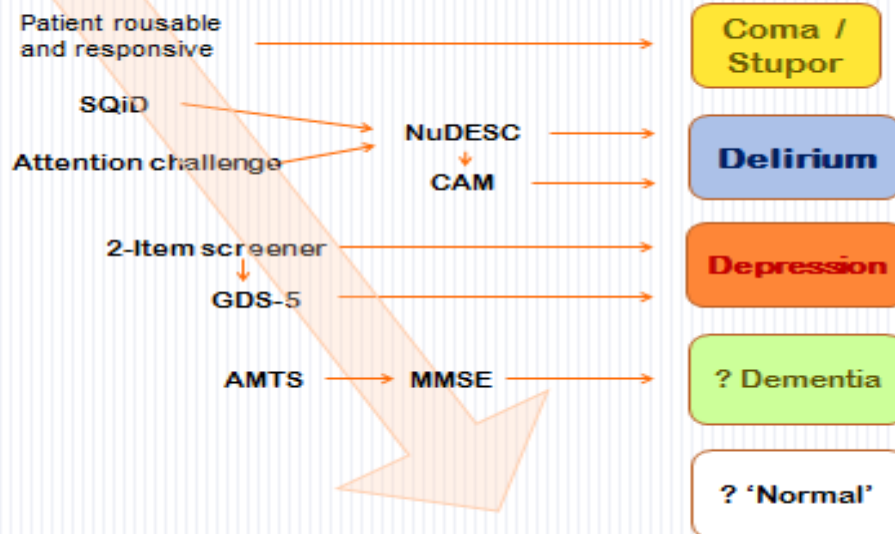
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- ▶ Elie et al (2000) Elderly ER attenders: 65% missed
- ▶ Kishi et al (2007) Gen hosp Psych referrals: 46% missed
- ▶ Han et al (2009) Elderly ER attenders: 76% missed
- ▶ Collins et al (2010) elderly med admission : 72% missed
- ▶ Fang et al (2008) Pall care patients: 55% missed
- ▶ Ryan et al (2013) Gen hosp point prevalence: 56% missed

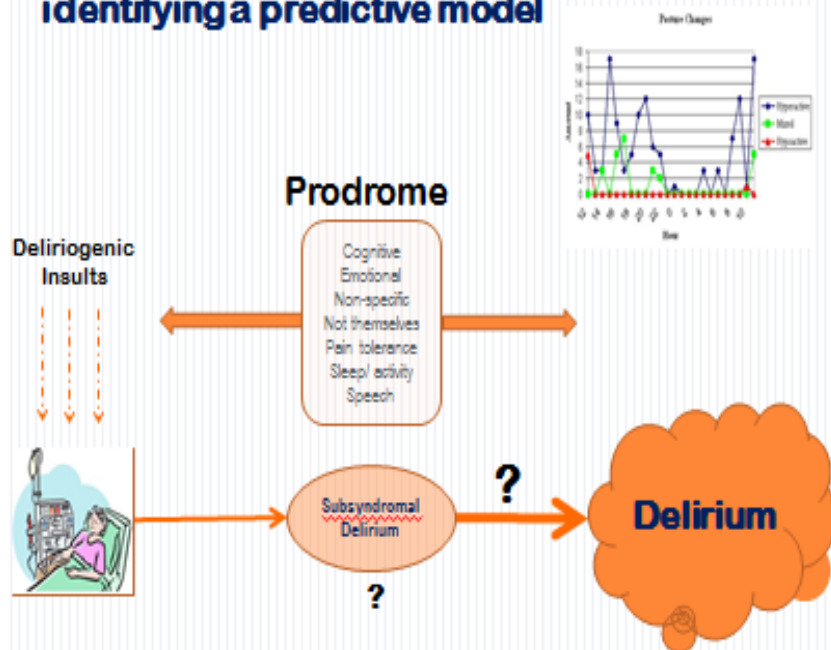




## Decision Support: 3D-COP



## Early detection...(pre) delirium: identifying a predictive model





# Non-pharmacological management of delirium

Educate patient and family/carer on delirium and prognosis

Involve family/carer in hospital care routine

Reorientation and reassurance strategies

Normalise sleep patterns

Prevent complications- e.g. falls, constipation

Ensure adequate hydration

Ensure pain relief is adequate

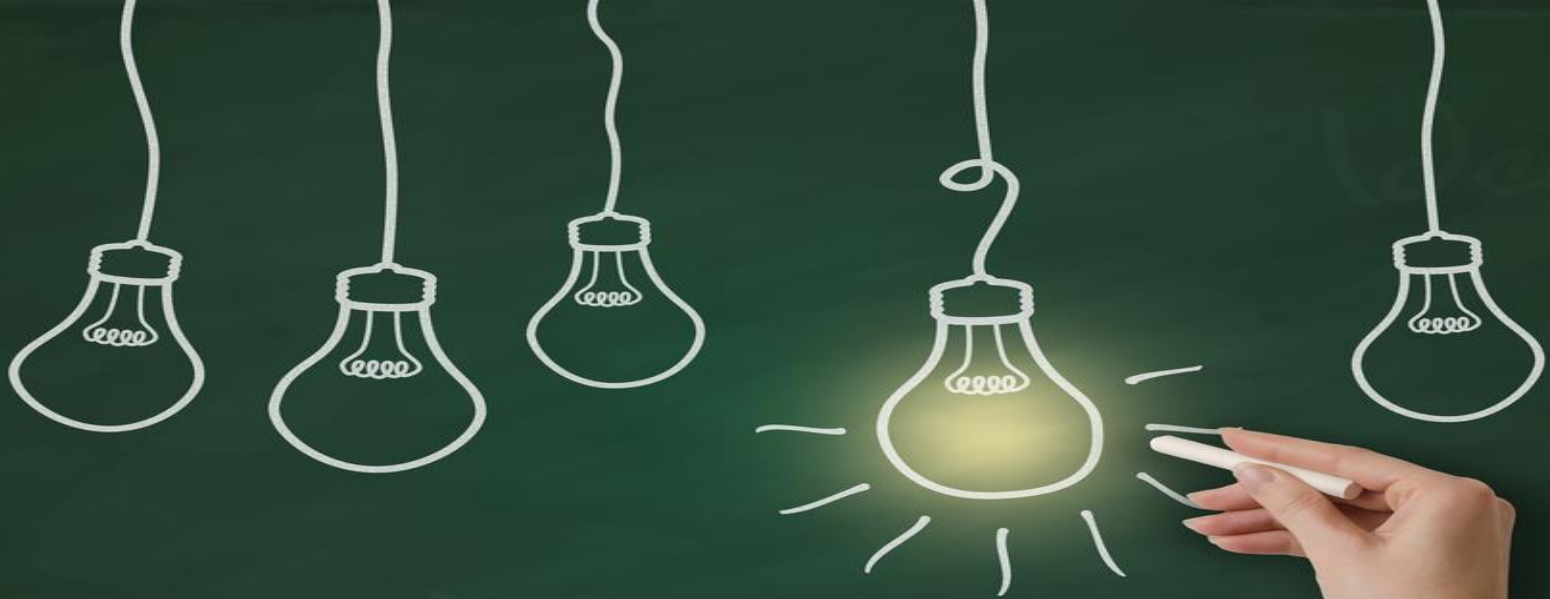
Encourage activity- mobility and ADLs

Use visual/ hearing aids to facilitate communication

Nurse with familiar staff in relaxed environment

# Treatment

- ▶ **Modest evidence for both pharmacological and environmental approaches to both prevention and treatment.....NICE guidelines (2010)**
- ▶ Guidelines vary in their emphasis – inconsistent application
  - reflecting perceived risk-benefit balance in different populations: pall care / ICU versus elderly medicine
- ▶ Pharmacological evidence mainly for APs: 32 prospective studies but only 2 placebo-controlled- 2/3 patients respond within a week (Meagher et al, 2013)
- ▶ Response to pharmacological and non-pharmacological interventions is diminished if comorbid dementia – coupled with increased risk of Adverse effects.....?net value



## Key Findings

**5. Complex problems rarely respond to simple solutions**



## Simple (e.g. Educational) interventions don't endure



*"Too bad we're not going to remember this."*

**Education and  
Awareness**

**Efficient Detection  
Tools**



**Effective  
Interventions**

**Penetration of policy,  
guidelines and real world  
protocols & procedures**

# European Delirium Association

9<sup>th</sup> Annual Meeting.

[www.europeandeliriumassociation.com](http://www.europeandeliriumassociation.com)



NOVEMBER 6<sup>th</sup>·7<sup>th</sup>·8<sup>th</sup>  
**CREMONA**  
I T A L Y



2014  
EUROPEANDELIRIUMASSOCIATION

*Save the date*

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