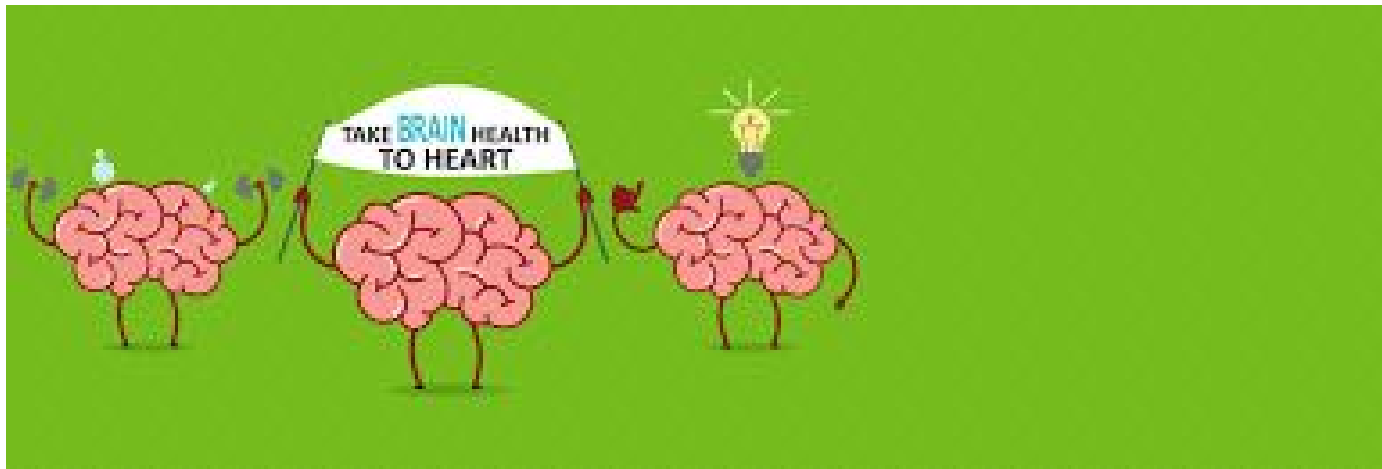


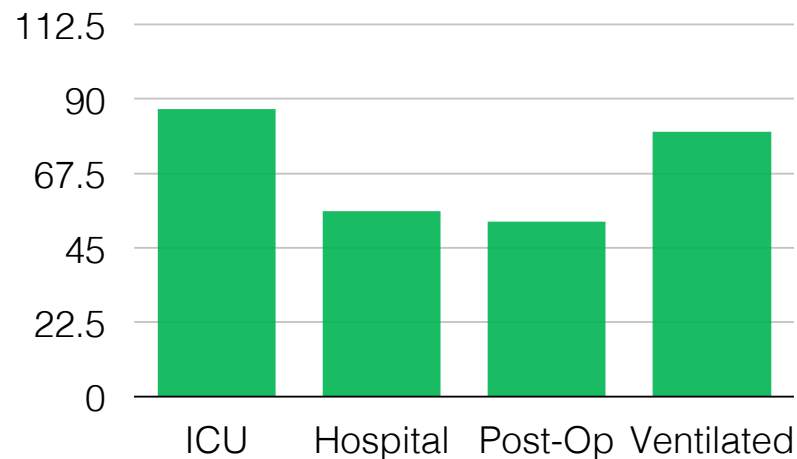
Prevention of Delirium: Acute Heart Failure

Bonnie L. Albert, DNP, ACNP-BC



Delirium: Hospital Complication

- Delirium: a disturbance of consciousness characterized by acute onset and fluctuating course of inattention accompanied by either a change in cognition or a perceptual disturbance, so that a patient's ability to receive, process, store, and recall information is impaired" (Ely, 2012)



- Incidence in Heart Failure: 16.7-28.8%
- Types of Delirium: Hyperactive, Hypoactive, Mixed

Outcomes of Delirium

- “downward spiral of functional decline, loss of independence, institutionalization, and ... death” (Fong et al., 2009, p. 210)
- Delirium can become chronic, with permanent sequela, affecting quality of life (Fong et al., 2009)
- Delirium is implicated in Post ICU Syndrome/Dementia (Makic, 2016)
- Increased morbidity and mortality (HF)
- Increased risk of 30/90 day readmission (HF)
- Increased risk new nursing home placement (HF)
- Increased 90 day all cause mortality (HF) (Uthamalingham, Gurm, Daley, Flynn, & Capodilupo, 2011)



Post-Discharge Clinical Outcomes

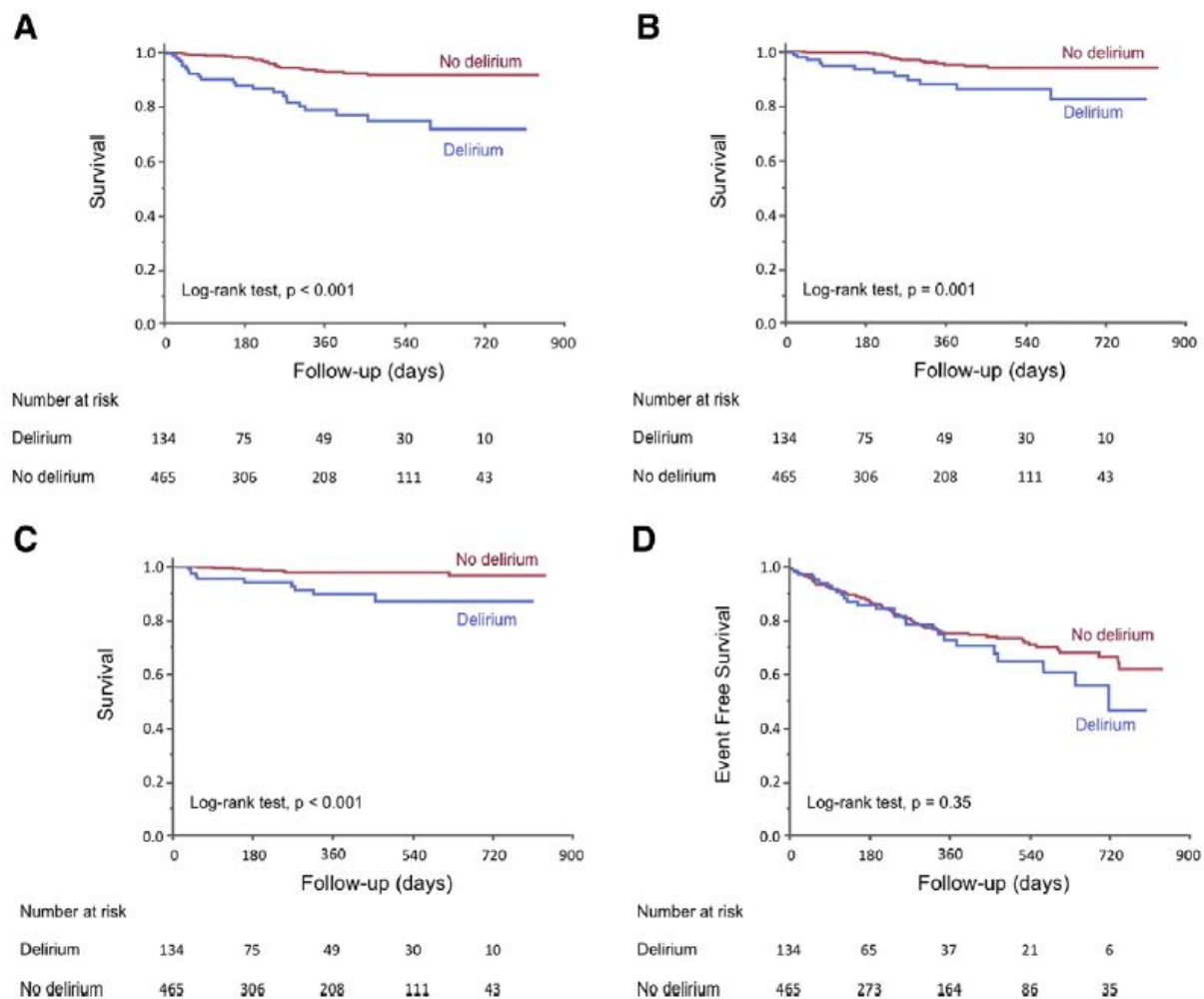


Fig. 1. Kaplan-Meier analyses of clinical outcomes after discharge in patients with or without delirium. A, all-cause death. B, cardiovascular death. C, non-cardiovascular death. D, worsening heart failure.

Costs of Delirium

- U.S. alone: \$4-16 billions dollars annually
- Increased cost of care estimated to be \$2500 per patient or 6.9 billion annually to Medicare
(O'Mahoney, Murthy, Akunne, & Young, 2011)
- Post discharge costs can be as much as \$64,421/patient (Leslie & Inouye, 2011)



Prevention Savings

NICE Clinical Guideline (2010, 2012, 2015)
Incremental net monetary benefit of 8180 and 2200 pounds



Hospital Elder Life Program (Leslie & Inouye, 2011)

- Estimated to have saved \$125 million per year on 704 patients
- Follow up Study: 7000 patients/6 units est. savings of \$6.9 million

Evidence for Prevention Protocols

Joanna Briggs Institute

- ◆ Level I Evidence that all adults admitted to non-ICU units should have non-pharmacological protocols
- ◆ 31% reduction in risk of developing delirium through multi-component interventions ($p < 0.0001$, 95% CI, 0.60-0.78)

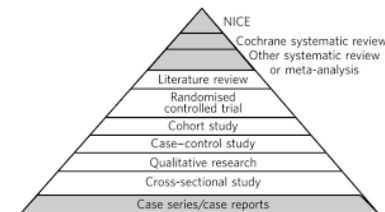
(Thomas, Smith, Forrester, Heider, & Holly, 2014)



NICE Clinical Guideline

- Prevention of delirium in hospitalized patients >18
- 13 recommendations to assess and modify factors:

cognitive impairment, disorientation, dehydration, constipation, hypoxia, infection, mobility, medications, pain, nutrition, sensory impairment, sleep disturbance

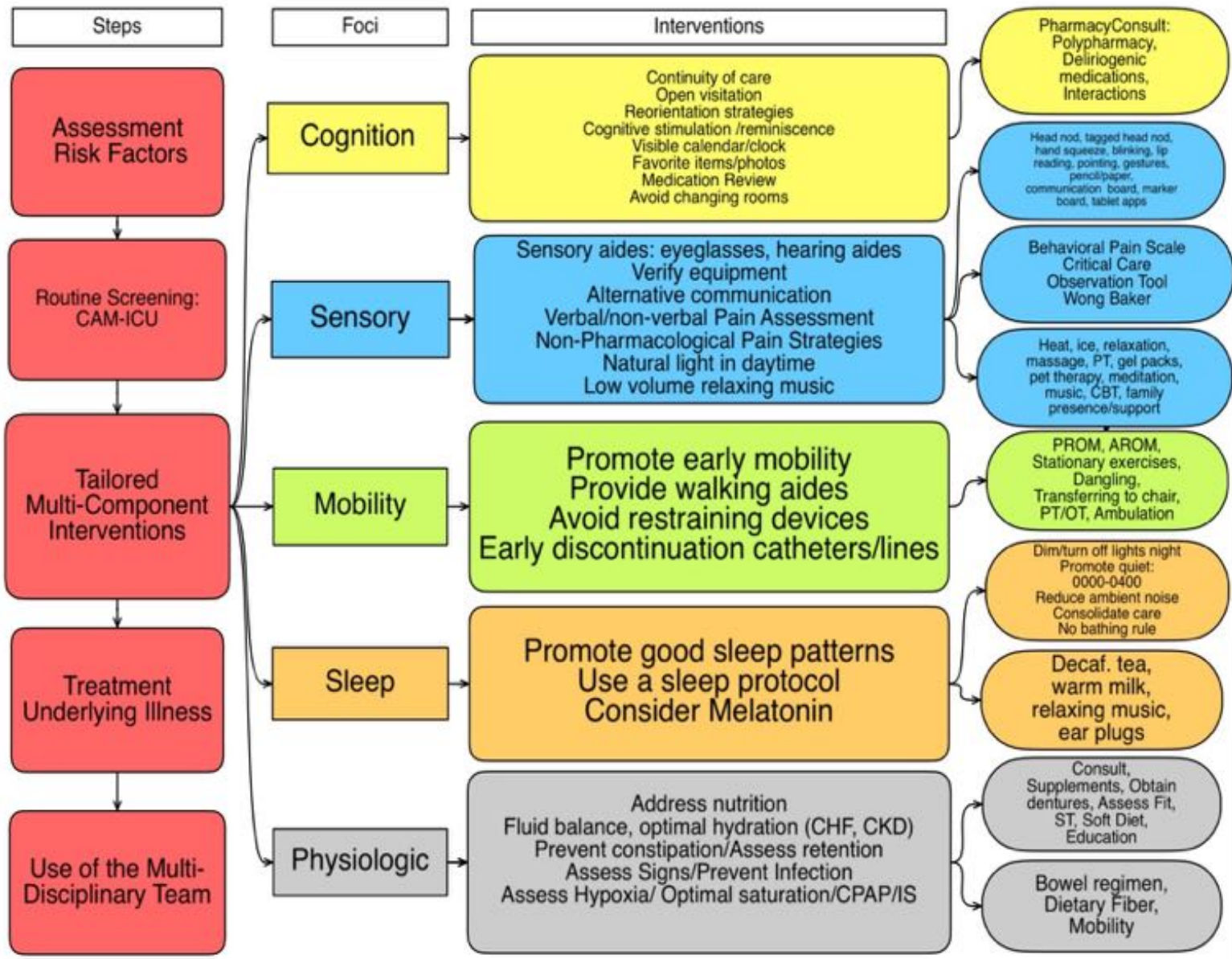


ICU Evidence



78% reduction in the risk of delirium (OR 0.22, $p = 0.001$) (Smith & Grami, 2017)

Delirium Prevention Protocol

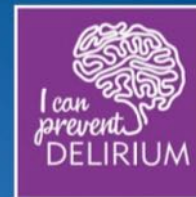


Delirium Education



Prevention as Intervention: Reducing Incident Delirium in Acute Heart Failure

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Problem

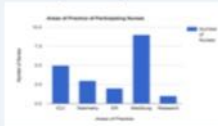
- Potentially preventable health problem with severe outcomes and high costs
- Estimated incidence from 16.7% - 28.5% of heart failure patients
- Level I evidence 31% lower risk of developing delirium with use of multicomponent interventions ($p < 0.0001$)
- Paucity of delirium prevention education

Purpose

- Assess the effectiveness of a one-hour educational program using lecture and PowerPoint on nurses' knowledge of delirium prevention.

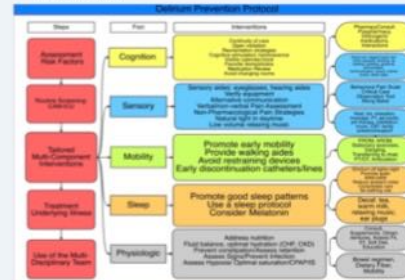
EBP Project Design

- Setting: Annual nursing symposium
- Intervention: One-hour educational program with lecture and PPT
- Sample: 21 participants of 35 attendees



Recommendations

- Pre- and Post-Assessment of Delirium Knowledge and Prevention Protocol



Outcomes

- Paired Samples t-test of Pre- and Post-Assessment Scores ($n = 20$)
 $t(19) = 5.29, p < .001$
- McNemar's Test Results

Ques.	p	#/% Imp.	Ques.	p	#/% Imp.
No. 1	.001	11/1100%	No. 6	.070	6/46.2%
No. 2	1.00	1/5.90%	No. 7	.500	2/11.8%
No. 3	.031	6/50.0%	No. 8	.125	4/25.0%
No. 4	1.00	1/ 7.10%	No. 9	.727	2/33.3%
No. 5	.250	3/18.8%	No. 10	.125	4/25.0%

Evaluation

- Acknowledge educational as well as statistical improvements in knowledge
- Repeat the educational intervention with larger sample size and use power analysis
- Consider alternative interactive educational strategies for prevention strategies

- ✓ Case Studies
- ✓ Simulation
- ✓ Problem Solving
- ✓ Collaboration

Conclusions

- Mandatory and annual delirium prevention education is a priority for all nurses
- Delirium prevention education should include all healthcare professionals and interdisciplinary specialties.
- Delirium prevention protocols should become embedded in routine care and standard practice

Major References

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