

D-Day: A Prevalence Study for Delirium in Acute Care Hospitalized Patients

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Objectives

- Discuss the value of a nursing research consortium to mentor and facilitate research at a regional level
- Describe the impact of delirium on hospitalized patients
- Describe how a CNS facilitated a point prevalence study to identify delirium 6 acute care hospitals
- Discuss results from a regional wide delirium prevalence study

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Nursing Research Consortium



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Nursing Research Consortium

Mission Statement:

We are a nurse-driven consortium from higher education and diverse clinical settings. We are dedicated to empower nurses to conduct and use research that leads to generating new knowledge aimed to improve health outcomes in our communities. We want: "To generate and disseminate interprofessional research."

The Nursing Research Consortium is adopted within the structure of the Community Patient Safety Coalition of Southwestern Indiana/Kentucky, Inc. (CPSC). The Coalition provides a collaborative opportunity between hospitals, academic institutions, interdisciplinary health providers and community organizations. CPSC positions the Consortium for external funding under their 501c3 status. This innovative partnership and strategy to garner resources across hospitals to perform multi-centered collaborative research is imperative to have nursing research performed and disseminated by clinical nurses.

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Hospital Induced Delirium...



...One of the largest health problems the public doesn't know about

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Definition

Delirium is defined as an acute state of confusion characterized by rapid onset, fluctuating course, inattention, altered level of consciousness, and disorganized thinking.



Delirium = Brain Failure

"Delirium is basically inattention and confusion that represents the brain temporarily failing. A person who is delirious is unable to think clearly and can't make sense of what is going on around him."

"It's an organ failing. This is the brain failing. There is so much human suffering. This is a massive, massive public health problem."



Background and significance

- Delirium is one of the most common hospital complications in the older adult population, affecting ~2.3 million patients annually
 - In 2012, 43.1 million people in the United States was >= 65 years of age.
 - In 2050, this population will increase to 83.7 million!
- Estimated hospital occurrence rates range from 14-56% and vary depending on the reason for hospitalization
- The financial impact of delirium is staggering, with annual estimated costs of \$38-\$152 billion
 - Daily costs were more than 2.5 times higher for patients with delirium than for those without it
- Delirium is responsible for an additional 17.5 million additional hospital days in the United States each year



Background and significance

Research shows that delirium is associated with:

- increased mortality
- increased LOS
- loss of baseline function
- Hospital Acquired Conditions (Falls/ Pressure Ulcers)
- development of PTSD and long-term cognitive deficits



Background and significance

Delirium results in more

- nursing hours per patient
- increased workload
- Increased stress
- caregiver burnout
- compassion fatigue



Background and Significance

- Delirium is under-recognized by all healthcare providers
 - Clinical presentation varies from patient to patient
 - Causes are numerous and multifactorial
 - Screening for delirium is not universally performed

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Purpose of the Study

- The purpose of this study is to determine the prevalence of delirium in 6 acute care hospitals at one point in time.
- Secondary Aim:
 - Identify clinical factors that contribute to positive delirium assessment

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Study Procedures

- Prior to implementing the Delirium Prevalence Study, participants from each facility attended a 6 hour training session at the University of Southern Indiana
 - Overview of Delirium
 - Overview of the Delirium Assessment Tools (CAM-ICU and bCAM)
 - Overview of the data collection tools and research protocol
 - Case studies
 - Live scenarios with each participant performing delirium assessment (actors/ coaches) followed by a debriefing
 - Opportunity to ask questions

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Delirium Training Day



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Methods

- The Delirium study was modeled after the National Database of Nursing Quality Indicators (NDNQI) Pressure Ulcer Prevalence study.
- Units that met the NDNQI definition for medical, surgical, combined medical-surgical, step-down, and critical care were included in the study.
- Delirium Screening Team was divided into groups and placed on units that was not their "home unit".

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Setting

Participating Hospitals:

- Deaconess Gateway (Newburgh, IN)
- Deaconess Main (Evansville, IN)
- Good Samaritan Hospital (Vincennes, IN)
- Memorial Hospital (Jasper, IN)
- Methodist Hospital (Henderson, KY)
- St. Vincent Evansville (Evansville, IN)

37 eligible units:

- 20 (Medical, Surgical, or combined MS)
- 6 Step-down
- 11 Critical Care

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Sample

- 6 AM Census printed on all eligible units to identify potential patients included in the study
 - New admissions/ transfers were excluded if not present on AM census list
- Inclusion and exclusion criteria were defined by the team

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Sample

Inclusion Criteria	Exclusion Criteria
Adult patient (>/=18) on an eligible unit	Patients less than 18 years of age
Ventilated patients as long as there are no exclusion criteria present	Patient not housed on an eligible study unit
	Comatose patient (RASS score of -4 or -5)
	Receptive aphasic patient
	Physician order for comfort measures
	Patient off the unit at time of screening
	Patient or family refuses screening assessment
	Participation creates an unsafe environment

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Sample

- 37 units included in the study
- AM census = 782 patients
- 630 patients screened (80.5%)
 - 108 patients met exclusion criteria (13.8%)
 - 30 patients refused (3.8%)
 - 14 patients had incomplete data collection forms resulting in exclusion (2.2%)

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Data Collection

- Data collection forms were created by the Delirium sub-team and Nurse Scientist
- The same variables were collected for all unit types
- The Delirium Screening Team was divided into Assessors and Auditors
 - Assessors were paired to promote accuracy of Delirium assessment at the bedside.
 - Assessors were responsible for data collected by observation (tubes, drains, sensory aides, restraints etc.) as well as 4 direct patient questions
 - Assessors were also responsible for looking for documentation of fluctuations in mental status prior to entering the patient's room
 - Auditors were responsible for collecting information from the Electronic Health Record (EHR)

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Delirium Assessment

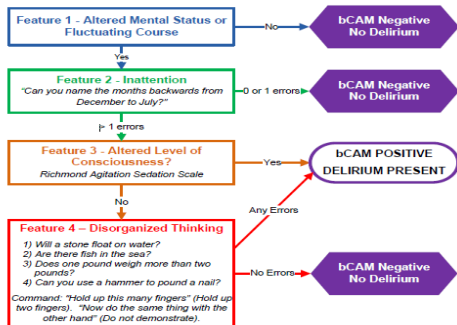
- bCAM was selected for the following unit types
 - Medical
 - Surgical
 - Combined Medical Surgical
 - Step-down
- 78% sensitive and 97% specific when performed by a nurse
- CAM-ICU was selected for all critical care units
 - 93-100% sensitive and 89-100% specific when performed by a nurse

Ely, EW, Inouye, SK, Bernard, GR et. al (2001)
 Sessler, CN, Gosnell, MS, Grap, MJ et. al (2002)
 Har, JH, Wilson, A, Vasilevskis, EE et. al (2013)

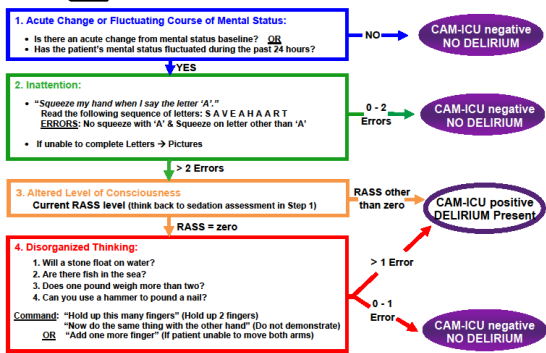
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Brief Confusion Assessment Method (bCAM) Flow Sheet



STEP 2 Confusion Assessment Method for the ICU (CAM-ICU) DELIRIUM ASSESSMENT



STEP 1 RICHMOND AGITATION-SEDATION SCALE (RASS) Sedation Assessment

Scale	Label	Description
+4	COMBATIVE	Combative, violent, immediate danger to staff
+3	VERY AGITATED	Pulls to remove tubes or catheters; aggressive
+2	AGITATED	Frequent non-purposeful movement, fights ventilator
+1	RESTLESS	Anxious, apprehensive, movements not aggressive
0	ALERT & CALM	Spontaneously pays attention to caregiver
-1	DROWSY	Not fully alert, but has sustained awakening to voice (eye opening & contact >10 sec)
-2	LIGHT SEDATION	Briefly awakens to voice (eyes open & contact <10 sec)
-3	MODERATE SEDATION	Movement or eye opening to voice (no eye contact)
<p>If RASS is ≥ -3 proceed to CAM-ICU (is patient CAM-ICU positive or negative?)</p>		
-4	DEEP SEDATION	No response to voice, but movement or eye opening to physical stimulation
-5	UNAROUSEABLE	No response to voice or physical stimulation
<p>If RASS is -4 or -5 → STOP (patient unconscious), RECHECK later</p>		

Sessler, et al. Am J Respir Crit Care Med 2002; 166: 1338-1344. Elk, et al. JAMA 2003; 286, 2983-2991

Data Collection- Assessor

- LOC
- Mental Status
- Foley Catheter
- IV access (Peripheral, Central, Arterial)
- Ventilator
- Artificial airway
- Drains/ tubes
- HOH (hearing aids)
- Glasses (Vision Problems)
- Restraints
- Sleep
- Nutrition
- Ambulation

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Data Collection- Auditor

- Age
- # active meds
- Surgery this hospitalization
- Procedure requiring pre-med this hospitalization
- History of cancer
- History of alcoholism
- Chronic disease
- Opioid dose in past 24 hours
- Steroid dose in past 24 hours
- Benzo dose in past 24 hours
- Order for bedrest
- Documentation of ambulation in past 24 hours
- Bone fracture
- Diagnosis of dementia
- Current stroke (or history of CVA)
- Diagnosis of Parkinson's

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Findings/Data

Prevalence of Delirium

	All Patients n=782	Critical Care n=126	Stepdown n=139	MedSurg n=517
Screened	630 (80.5%)	93 (74%)	125 (90%)	412 (79.7%)
Positive Screen	62	15	12	35
Negative Screen	568	78	113	377
Prevalence	9.84%	16.12%	9.6%	8.49%

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Findings/ Data

	Average # of Active Meds	Average Age	Average LOS
CC	19.42	65.08	5.98
Med	16.88	67.83	3.42
MedSurg	17.01	66.70	4.33
SD	14.97	69.28	3.66
Sur	16.08	61.38	3.81
Grand Total	16.93	66.34	4.28

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Findings/Data

- Did the data tell us anything?
- Are there clinical variables that increase the likelihood of positive delirium screen?
 - Factor Analysis
 - Binary logistics regression
 - Med-Surg
 - Critical Care

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Medical Surgical –Predicting the likelihood of having a positive delirium screen

N= 503	B	SE	Wald	df	p	n=503	Variance explained
Age	.039	.013	8.7	1	.003	1.04	9.1-20%
LOS	.029	.041	.52	1	.469	1.04	
No ambulation	2.07	.455	20.8	1	.000	7.9	
Alcoholism hx	.401	.675	.353	1	.552	1.4	



Critical Care-Predicting the likelihood of having a positive delirium screen

n=102	B	SE	Wald	df	p	Odds Ratio	Variance explained
LOS	.059	.07	.583	1	.445	1.06	23-40%
No ambulation	1.13	1.2	.947	1	.330	3.1	
Urinary Catheter	1.36	.82	2.7	1	.095	3.9	
Assisted ventilation	1.16	.82	1.9	1	.158	3.2	
Drains	.237	.78	.093	1	.761	1.2	
Restraints	1.29	1.06	2.1	1	.142	3.6	



Findings/Data

- Data analysis continues
 - Is there a bundle of risk factors that coincide with positive delirium screen?
 - When most patients are at risk what elements are immediate triggers in nursing assessment?
- Can we use this information for future research?
- Can we help nurses improve recognition of delirium?

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Lessons Learned

- Our prevalence was lower than what is reported in the literature
- It is hard to determine baseline mental status when you are not the bedside clinician
- Data collection forms -simple and error proof
 - There were elements that could have been eliminated
 - There were elements that were not clearly defined
- Nurses do not routinely assessing for delirium
- Delirium assessment is a little awkward- Is this why nurses don't do it?

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Next Steps

- Delirium symposium
 - Bring experts to our region to discuss best practices
- Electronic report to track Delirium prevalence/ duration
 - Continue to pursue electronic report that will allow us to monitor our outcomes on a regular basis
- Education/ Screening in all hospitals involved in study?
- Incorporate education into school curriculum
- Incorporate ongoing education plan in the hospital setting
 - Nurse Residency programs
 - Orientation
- Intervention Study
 - Where do we focus our efforts?
 - What does data analysis show us?

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Questions?



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