MINDFUL APPROACHES TO DELIRIUM

PRUDENT USE OF ANTIPSYCHOTICS AND CONSIDERATION OF ALTERNATIVES

Joseph Lyon, MSN, RN, FNP-BC, PMHNP-BC

March 20th 2024

DISCLOSURES

I have no commercial or non-commercial disclosures

OFF-LABEL MEDICATIONS

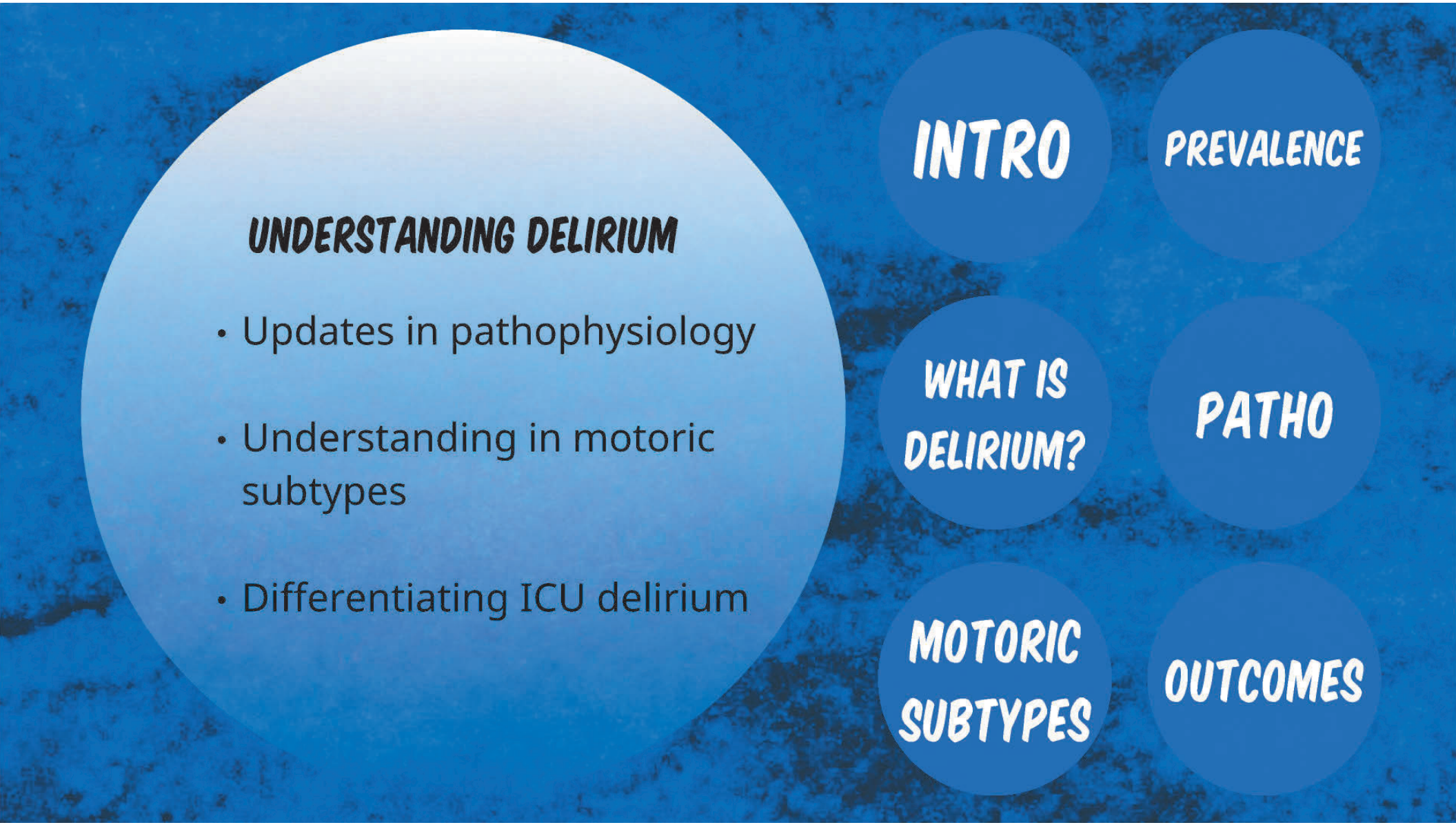
- There are no FDA approved medications for delirium
- Any discussion of medications is considered off-label. Most up-to-date understanding and practices regarding off-label medications will be discussed.

OBJECTIVES

Objective 1: Differentiate hypoactive, hyperactive, and mixed delirium.

Objective 2: Implement most up to date and evidence-based screening tools and preventative measures to reduce the incidence of delirium.

Objective 3: Formulate pharmacological strategies that precisely target delirium symptoms, incorporating cautious and judicious use of anti-psychotics.

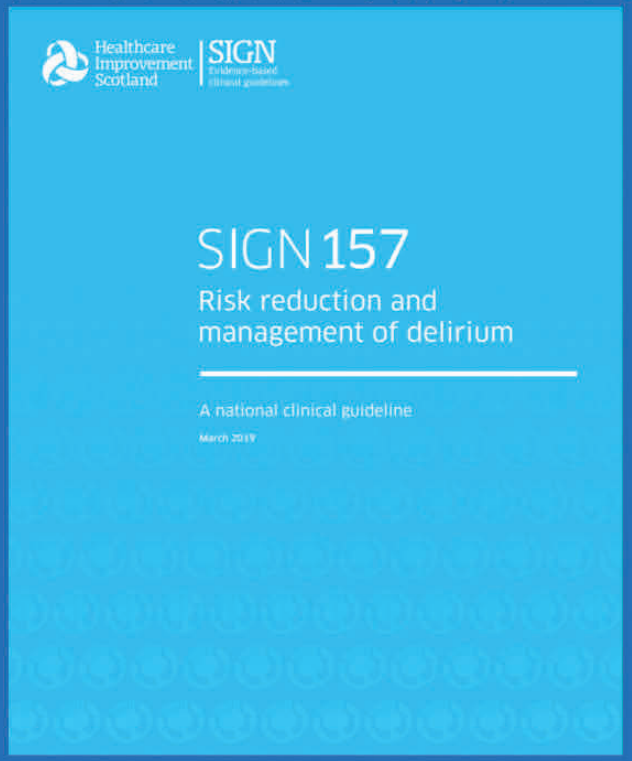

UNDERSTANDING DELIRIUM
• Updates in pathophysiology
• Understanding in motoric subtypes
• Differentiating ICU delirium
INTRO
PREVALENCE
WHAT IS DELIRIUM?
PATHO
MOTORIC SUBTYPES
OUTCOMES

PATIENT, WHO WAS AN ARTIST, PAINTED HER EXPERIENCE OF DELIRIUM

WHAT'S NEW TO TALK ABOUT WITH DELIRIUM?

- Delirium is a complex neuropsychiatric condition.
- It is a significant complication in acute care settings.
- Management differs between general and critical care.
- Increasing emphasis on prevention over management
- Long-term complications are increasingly recognized

PRIMARY AND UP-TO-DATE CLINICAL PRACTICE GUIDELINES INFORMING THIS PRESENTATION



CLINICAL MANAGEMENT OF THE GERIATRIC PATIENT

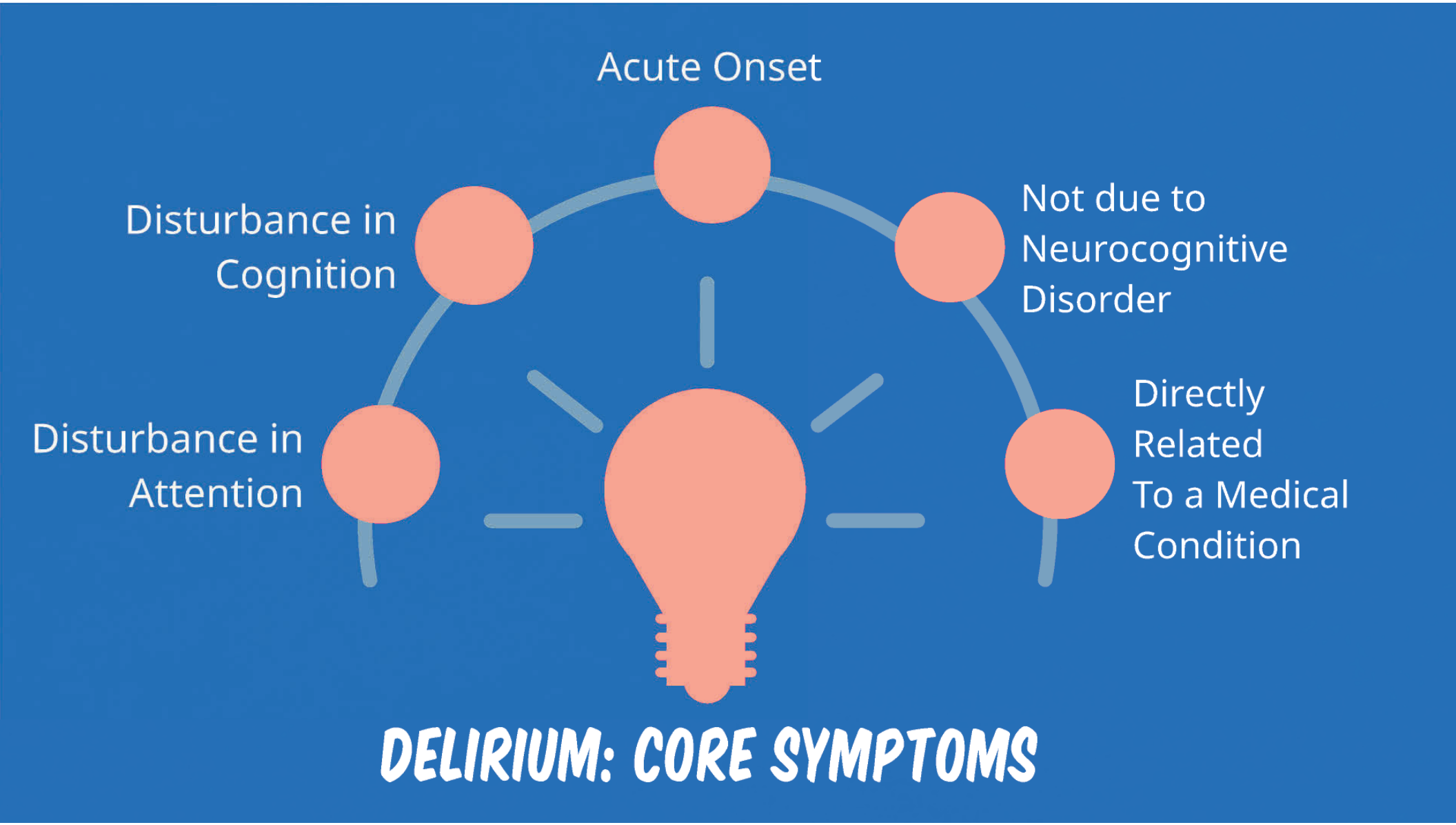
American Geriatrics Society Abstracted Clinical Practice Guideline for Postoperative Delirium in Older Adults

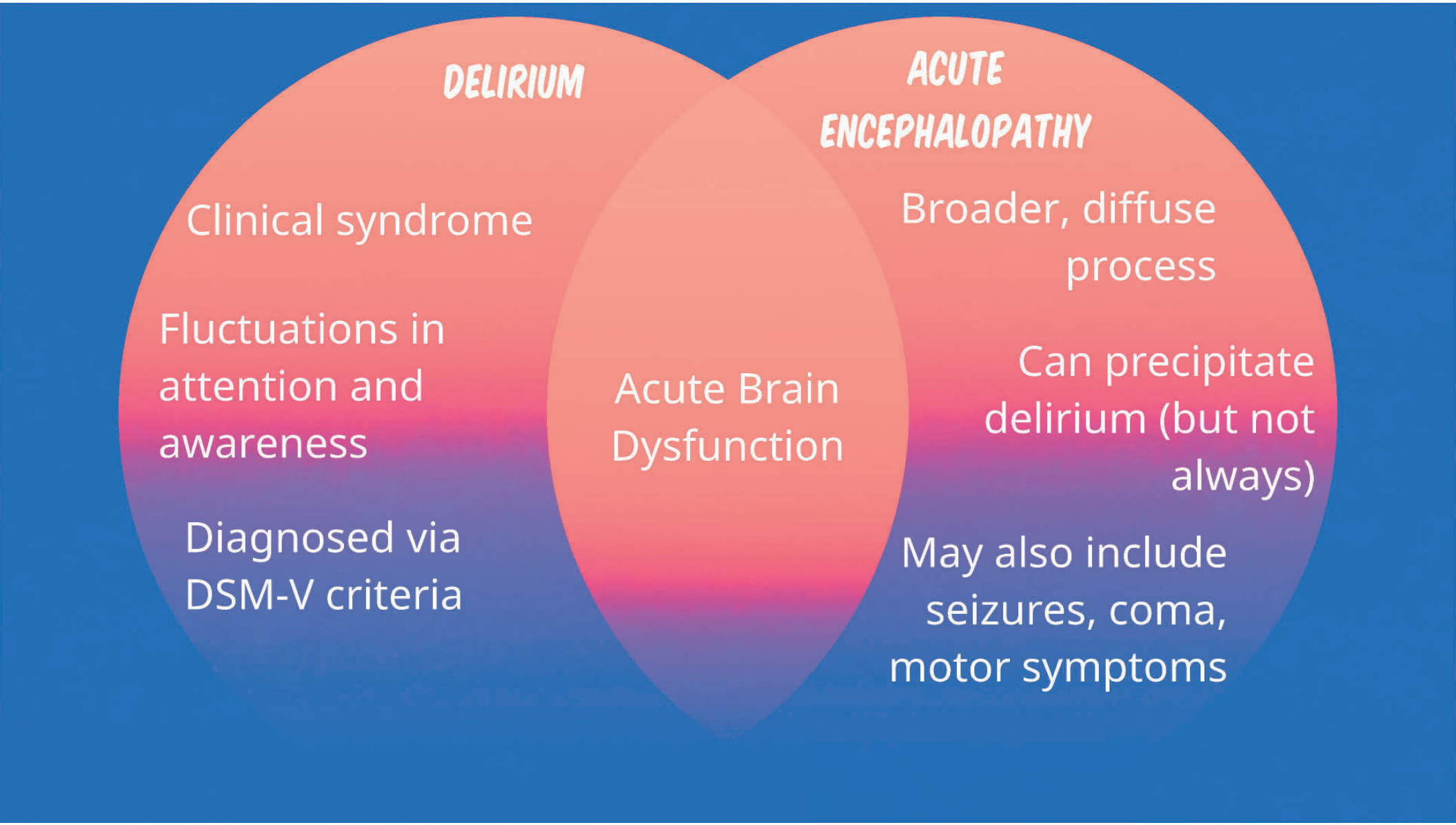
The American Geriatrics Society Expert Panel on Postoperative Delirium in Older Adults

Online Special Article

Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU

John W. Devlin, PharmD, FCCM (Chair)[1,2]; Yuanna Skrobik, MD, FRCP(c), MSc, FCCM (Vice-Chair)[3,4]; Céline Gélinas, RN, PhD[5]; Dale M. Needham, MD, PhD[6]; Arjen J. C. Slooter, MD, PhD[7]; Pratik P. Pandharipande, MD, MSCI, FCCM[8]; Paula L. Watson, MD[9]; Gerald L. Weinhouse, MD[10]; Mark E. Nunnally, MD, FCCM[11,12,13,14]; Bram Rochwerg, MD, MSc[15,16]; Michele C. Balas, RN, PhD, FCCM, FAAN[17,18]; Mark van den Boogaard, RN, PhD[19]; Karen J. Bosma, MD[20,21]; Nathaniel E. Brummel, MD, MSCI[22,23]; Gerald Chanques, MD, PhD[24,25]; Linda Denehy, PT, PhD[26]; Xavier Drouot, MD, PhD[27,28]; Gilles L. Fraser, PharmD, MCCM[29]; Jocelyn E. Harris, OT, PhD[30]; Aaron M. Joffe, DO, FCCM[31]; Michelle E. Kho, PT, PhD[32]; John P. Kress, MD[33]; Julie A. Lanphere, DO[34]; Sharon McKinley, RN, PhD[35]; Karin J. Neufeld, MD, MPH[36]; Margaret A. Pisani, MD, MPH[37]; Jean-Francois Payen, MD, PhD[27]; Brenda T. Pun, RN, DNP[38]; Kathleen A. Puntillo, RN, PhD, FCCM[39]; Richard R. Riker, MD, FCCM[40]; Bryce R. H. Robinson, MD, MS, FACS, FCCM[41]; Yahya Shehabi, MD, PhD, FCICM[42]; Paul M. Szumita, PharmD, FCCM[43]; Chris Winkelman, RN, PhD, FCCM[44]; John E. Centofanti, MD, MSc[45]; Carrie Price, MLS[46]; Sina Nikayin, MD[46]; Cheryl J. Misak, PhD[46]; Pamela D. Flood, MD[47]; Ken Kiedrowski, MA[48]; Waleed Alhazzani, MD, MSc (Methodology Chair)[49,50]


Acute Onset
Disturbance in Cognition
Not due to Neurocognitive Disorder
Disturbance in Attention
Directly Related To a Medical Condition
DELIRIUM: CORE SYMPTOMS


DELIRIUM
Clinical syndrome
Fluctuations in attention and awareness
Diagnosed via DSM-V criteria
Acute Brain Dysfunction
ACUTE ENCEPHALOPATHY
Broader, diffuse process
Can precipitate delirium (but not always)
May also include seizures, coma, motor symptoms

WHY DO WE CARE ABOUT DELIRIUM SUBTYPING?

Enhances Vigilance: Recognizing specific subtypes improves detection and monitoring.

Links Causes to Subtypes: Different etiologies may manifest as distinct subtypes, guiding targeted interventions.

Influences Outcomes: Subtyping is key to understanding and potentially improving short- and long-term patient outcomes.

Refines Treatment Approach: Treatment varies significantly with the underlying cause and delirium subtype.

DELIRIUM SUBTYPES: BASICS

Hypoactive

- Patient appears lethargic, disengaged, ambivalent, depressed or mute
- Commonly mistaken for depression or dementia

Mixed

- Features of both with fluctuations between the two

Hyperactive

- Patient appears agitated, unable to be redirected, psychotic or impulsive
- Mistaken for "new onset psychosis" or dementia

Hypoactive

- Patient appears lethargic, disengaged, ambivalent, depressed or mute
- Commonly mistaken for depression or dementia

Hyperactive

- Patient appears agitated, unable to be redirected, psychotic or impulsive
- Mistaken for "new onset psychosis" or dementia

Mixed

- Features of both with fluctuations between the two

DELIRIUM SUBTYPE OCCURRENCE

Koirala, 2020

Hypoactive	Mixed	Hyperactive
23%–78%	4.6%–27.3%	1.8%–21.5%

Koirala, 2020

DELIRIUM SUBTYPES BREAKDOWN IN CRITICAL CARE

Krewulak, 2018

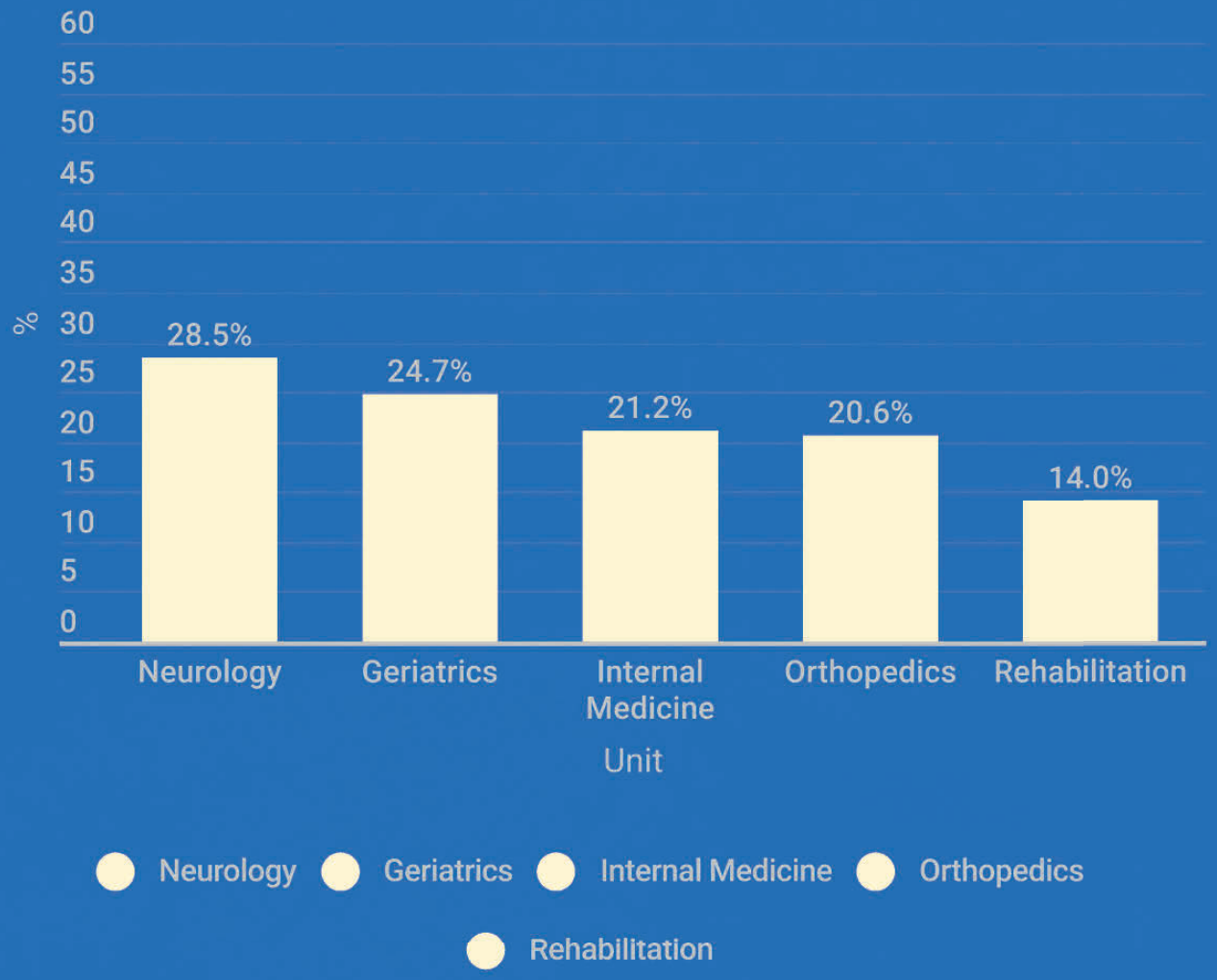
Hypoactive	Mixed	Hyperactive
17% prevalence (40–52% of ICU delirium cases)	10% prevalence (26–35% of ICU delirium cases)	4% prevalence (11–18% of ICU delirium cases)

Collins, 2010
Kishi, 2008

THE PARADOX OF HYPOACTIVE DELIRIUM

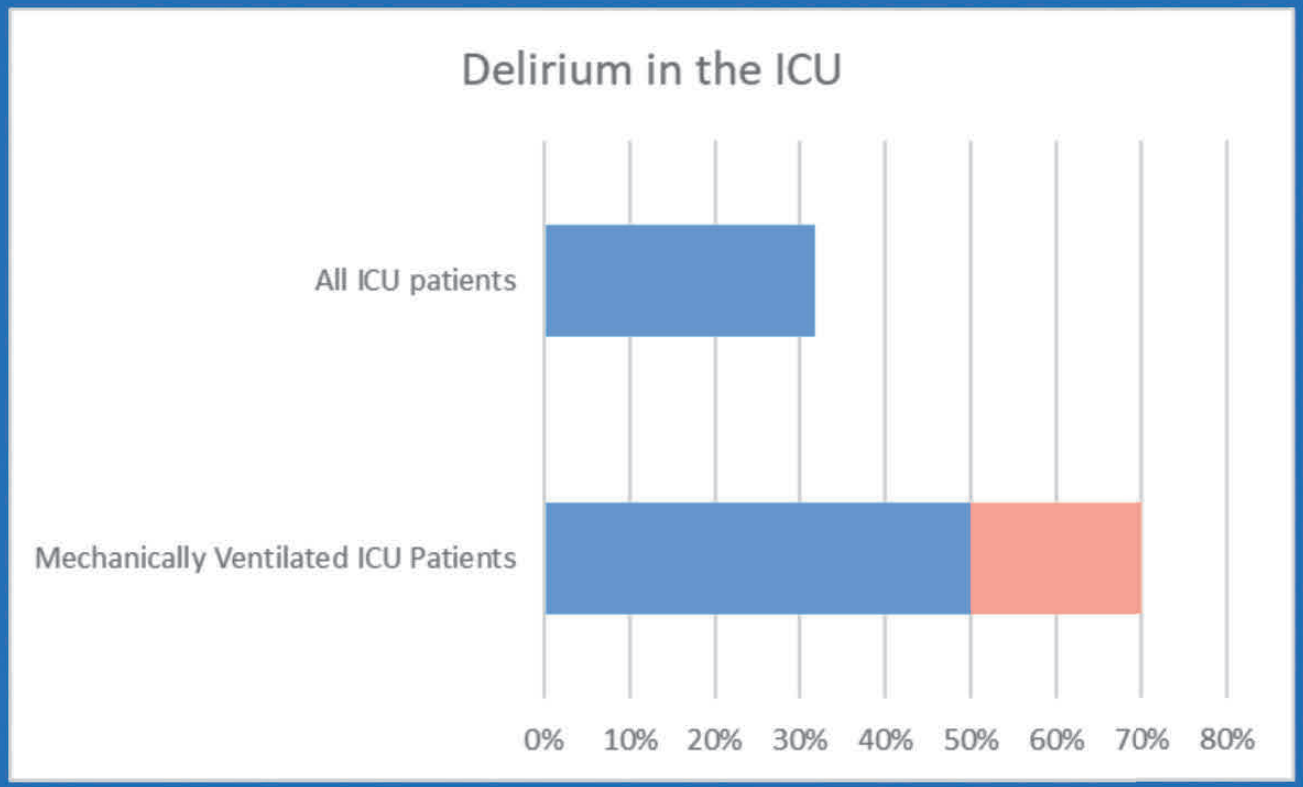
Is the most common subtype of delirium also the most harmful?

- Patients often seen as docile, cooperative and "just tired"
- Frequently mistaken for pain or underlying psychiatric illness
- Lack of vigilance may lead to under-detection of treatable source and mismanagement
- Higher mortality rates
- Worsened quality of life
- Higher rates of institutionalization



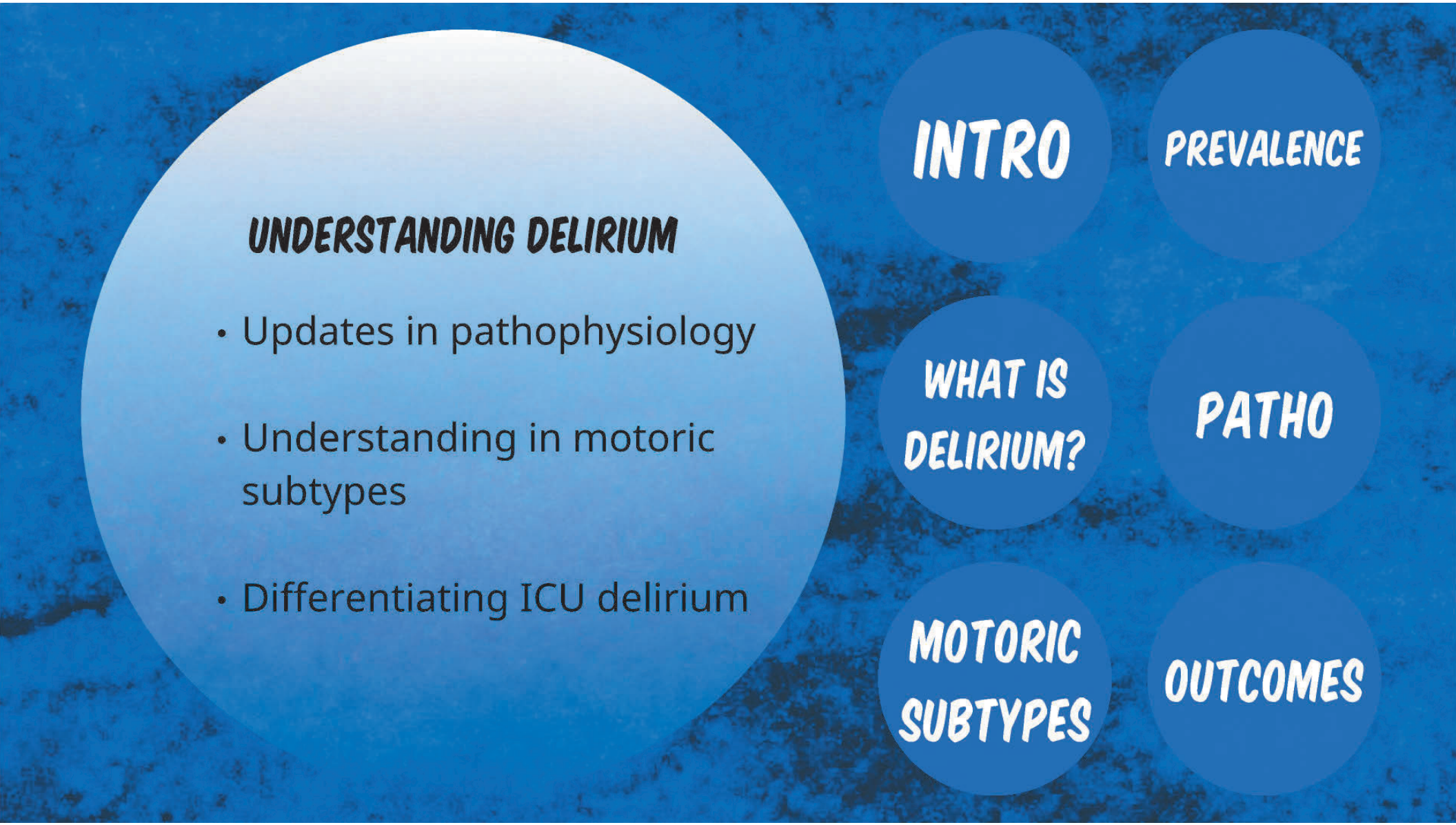
PREVALENCE AMONG OLDER ADULTS ADMITTED TO THE HOSPITAL

Bellelli, 2016



PREVALENCE IN CRITICAL CARE

Almeida, 2014
Krewulak, 2018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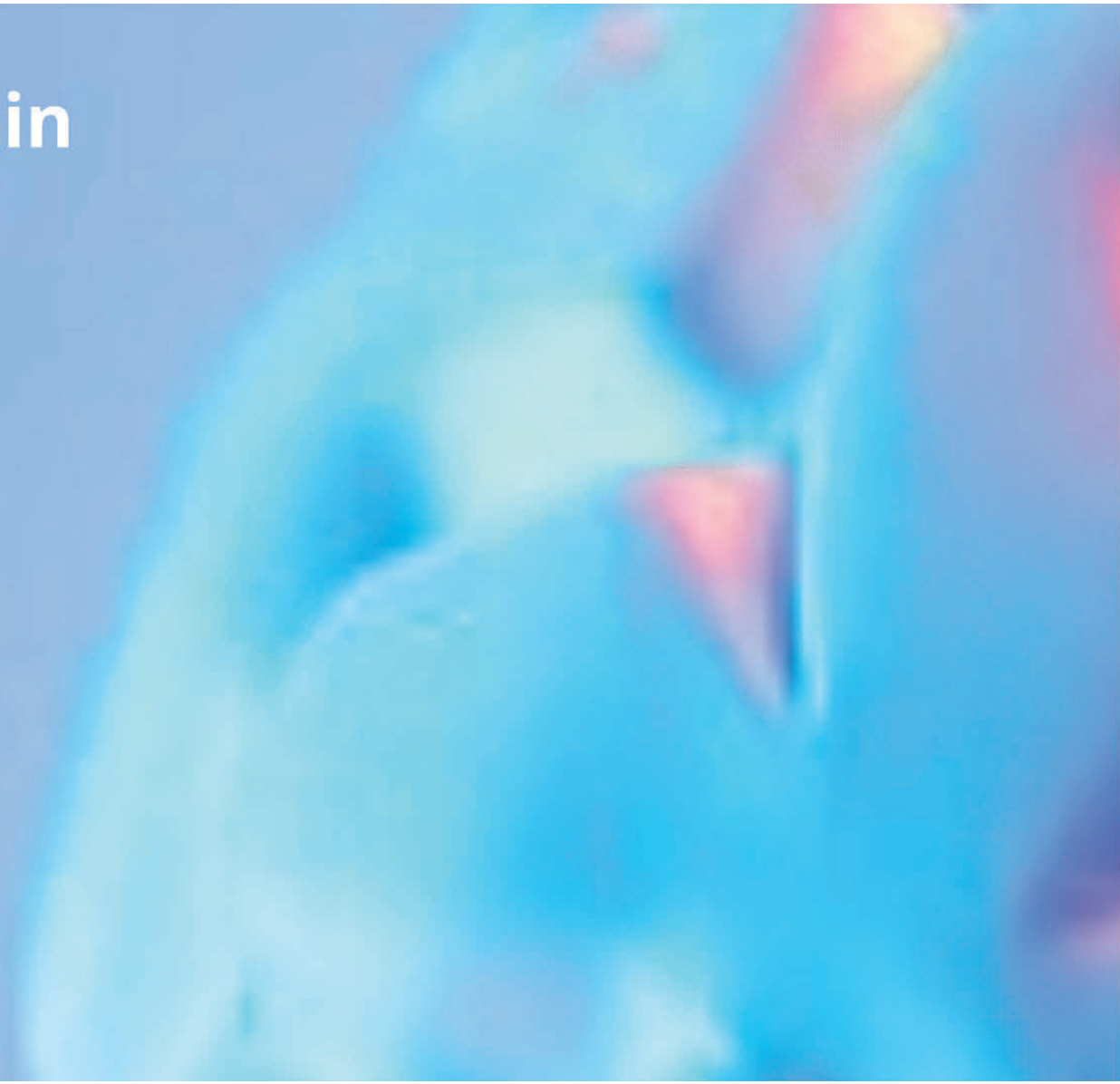
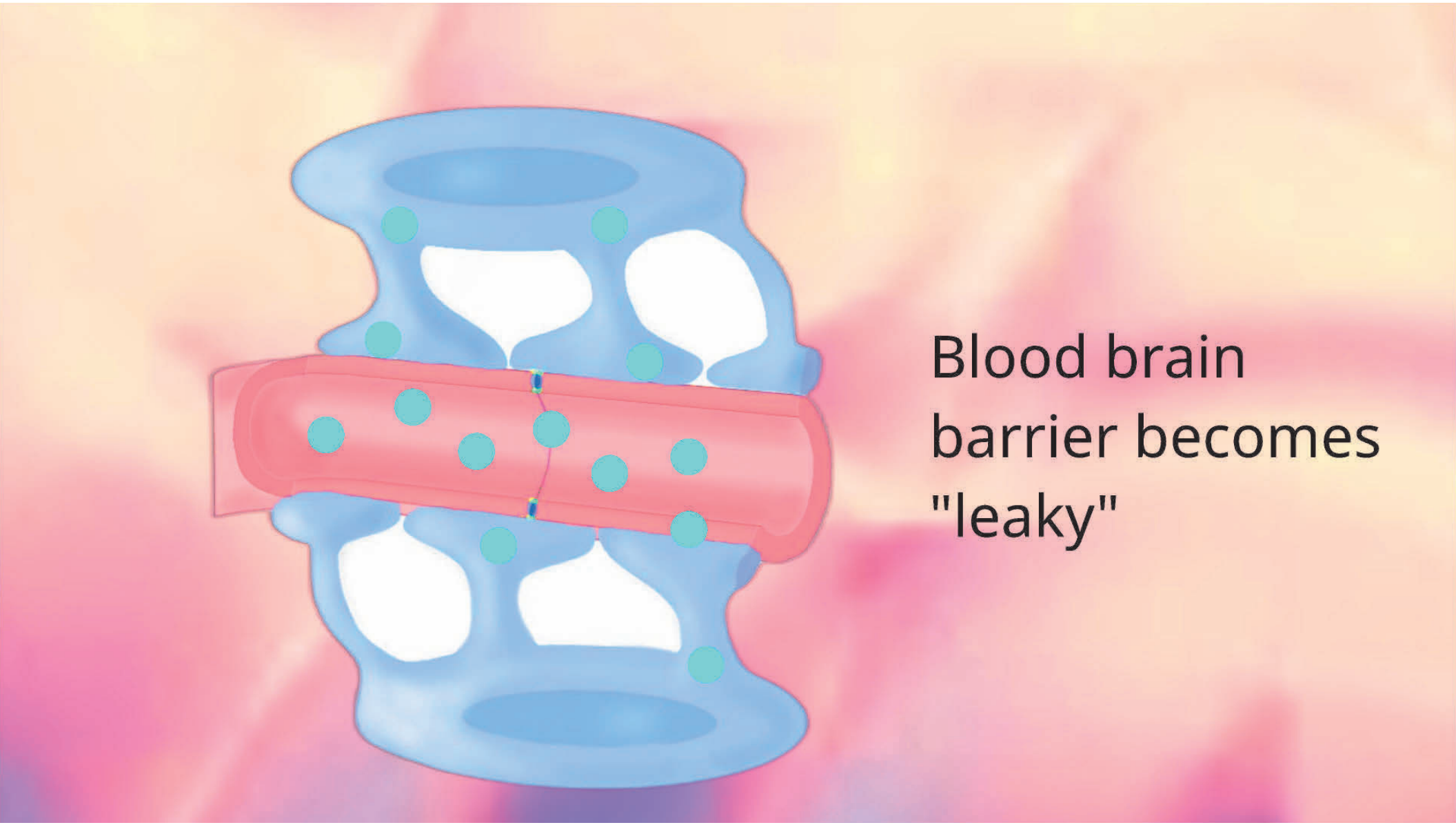
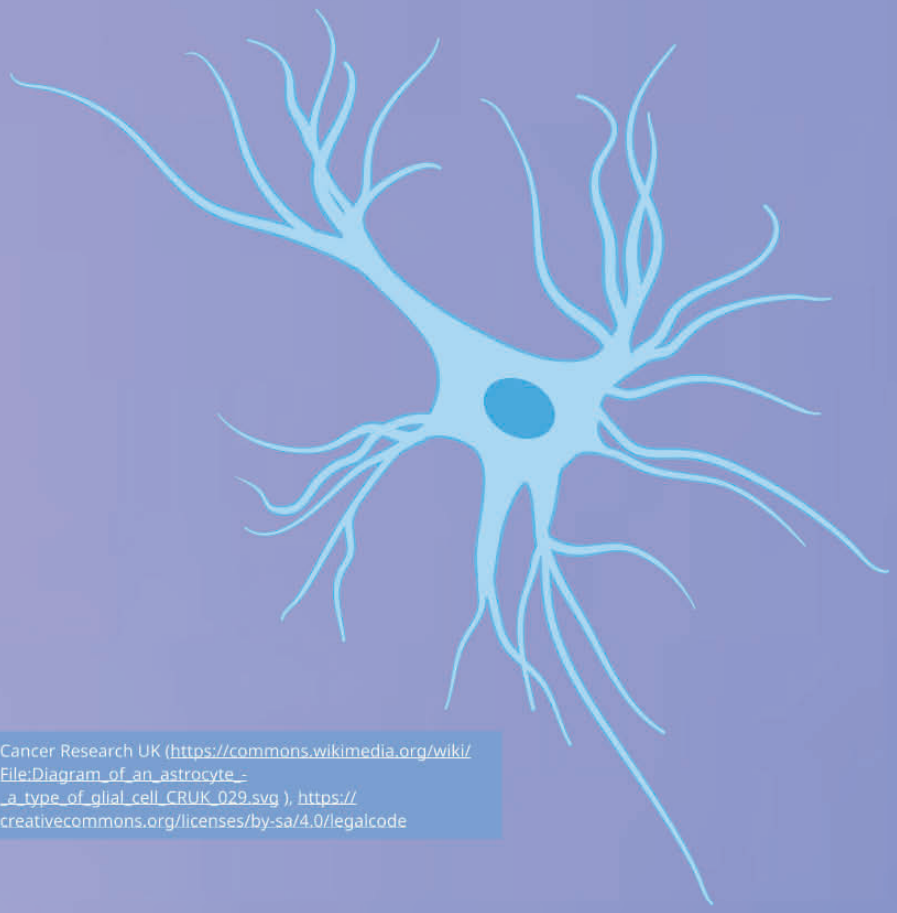
THE AGING BRAIN AND INCREASING DELIRIUM RISK

Degradation of brain connectivity

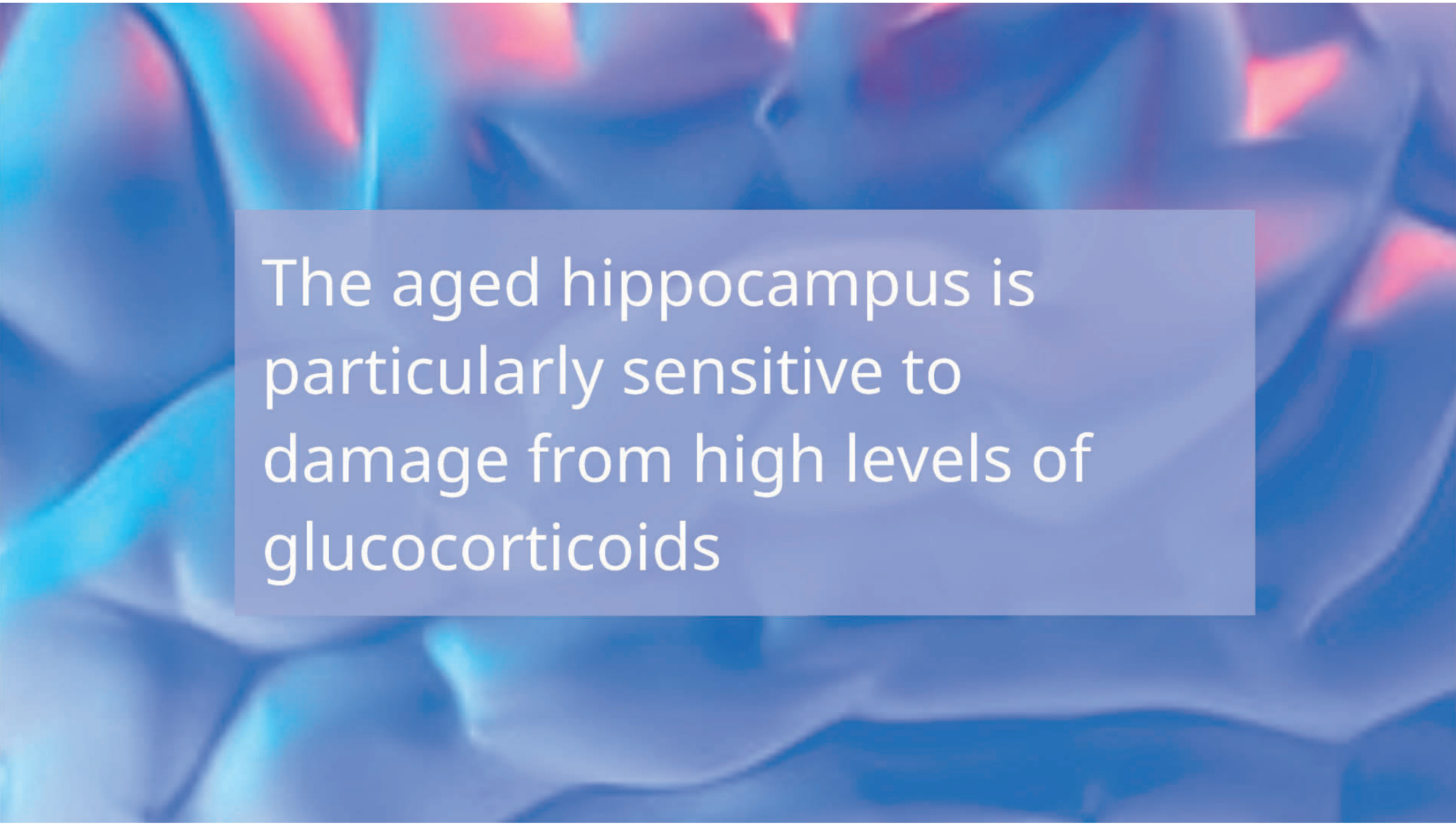
- Cholinergic Neurons
- Noradrenergic Neurons




Blood brain
barrier becomes
"leaky"



Microglial cells produce a more aggressive inflammatory response


The aged hippocampus is particularly sensitive to damage from high levels of glucocorticoids


Aging process leads to higher
oxidative damage and
vulnerability to free radicals

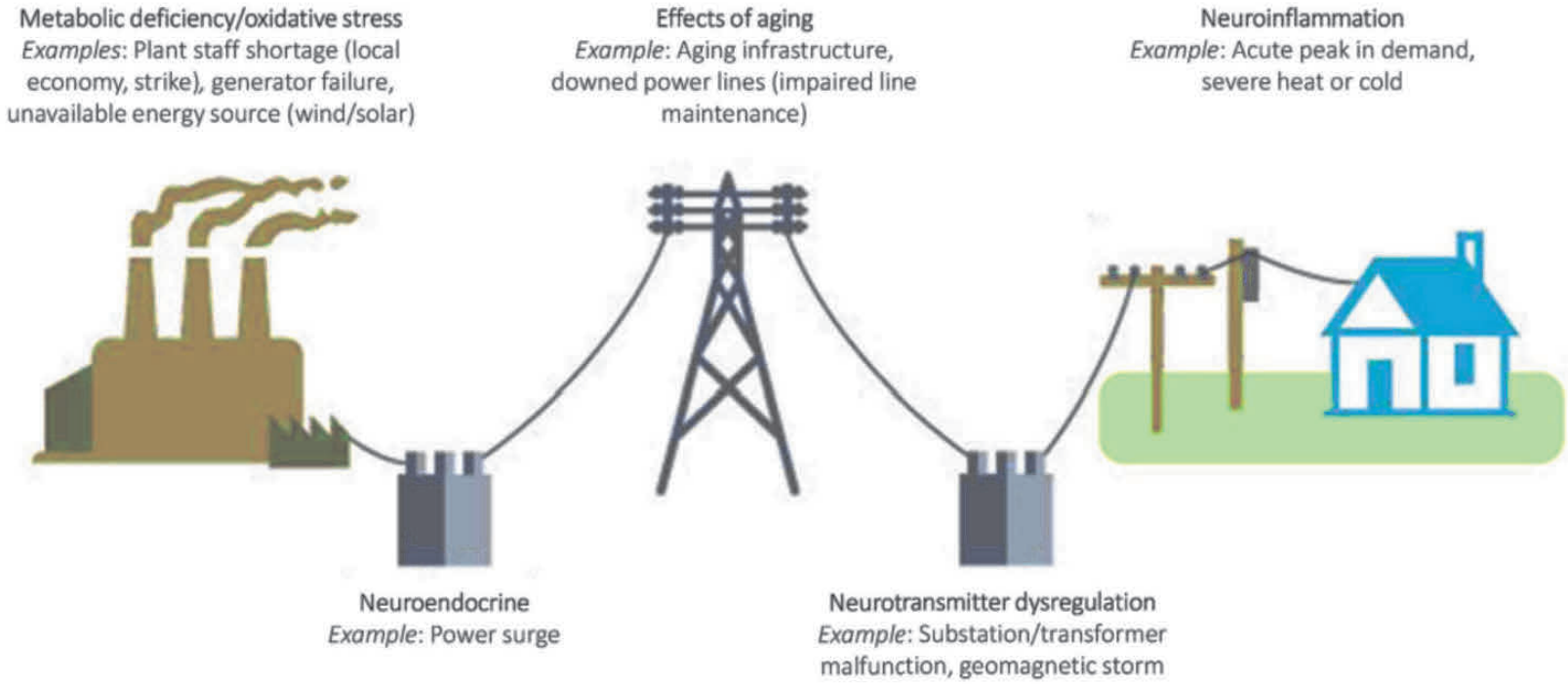
TABLE 7 Confirmed or suspected neurotransmitter alterations associated with delirium

Delirium Source	ACH	DA	GLU	GABA	5HT	NE	Trp	Mel	Phe	His	Cytok	HPA axis	Cort	NMDA activity	RBF Δ	Inflam	EEG
Anoxia/hypoxia	↓	↑	↑	↑	↓	↓	⇔	↓	↑	↑,↓	⫫↑	⫫	↑	↑	⫫	↑	↓
Aging	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	⫫↑	⫫	↑	↓	⫫	↑	↓
TBI	↑	↑	↑	↑	↑	↑	↑	↓	↑	↓	↑⫫	↑	↑	↑	↑	↑⫫	↓
CVA	↓	↑	↑	↑	↑	↑	↑	↓	↑	↓	↑⫫	↑	↑	↑	⫫	↑⫫	↓
Hepatic Encephalopathy	⇔	↓	↑	↑↑	↑	↓	↑	↓	↑	↑	↑⫫	⫫	↑	↑	⫫	↑	↓
Sleep deprivation	↓	↓	⫫	↑	↑	↑	↓	↓⫫	↑	↑	↑	⫫	↑	↑	↑	↑⫫	↓
Trauma, Sx, & Post-op	↓	↑	↑	↑	↓	↑	↓	↓	↑	↑	↑	↑	↑	↑	⫫	↑	↓
ETOH & CNS-Dep Withdrawal	↑	↑	↑	↓	↑	↑	↓	↓	↑	↑	↑	↑⫫	↑	↑	↓	↑	↑
Infection/Sepsis	↓	↓	↑	↑	↓	↓	↓	↓	↓	↓	↑	↑⫫	↑	↑⫫	⫫	↑	↓
Dehydration & Electrolyte Imbalance	⇔	↑	↑	↑	↓	↑	?	↓	?	↑	↑	⫫	↑	↑	↓	⫫↑	⫫
Medical Illness	↓	↑	↑	⫫	↓	↑	↓	↓	↑	↑	↑	↓	↑	↑	⫫	⫫	⫫

Abbreviations: ↑, likely to be increased or activated; ↓, likely to be decreased; ⇔, no significant changes; ( ), likely a contributor, exact mechanism is unclear; (–), likely not to be a contributing factor; ACH, acetylcholine; CNS-Dep, central nervous system depressant agent; Cort, Cortisol; CVA, cerebrovascular accident; Cytok, cytokines; DA, dopamine; EEG, electroencephalograph; Etoh, alcohol; 5HT, 5-hydroxytryptamine or serotonin; GABA, gamma-aminobutyric acid; GLU, glutamate; His, histamine; HPA axis, hypothalamic-pituitary-adrenal axis; Inflam, inflammation; Mel, melatonin; NE, norepinephrine; NMDA, *N*-methyl-D-aspartic acid; Phe, phenylalanine; Trp, tryptophan; RBF, regional blood flow; Sx, surgery.

Maldonado, 2017

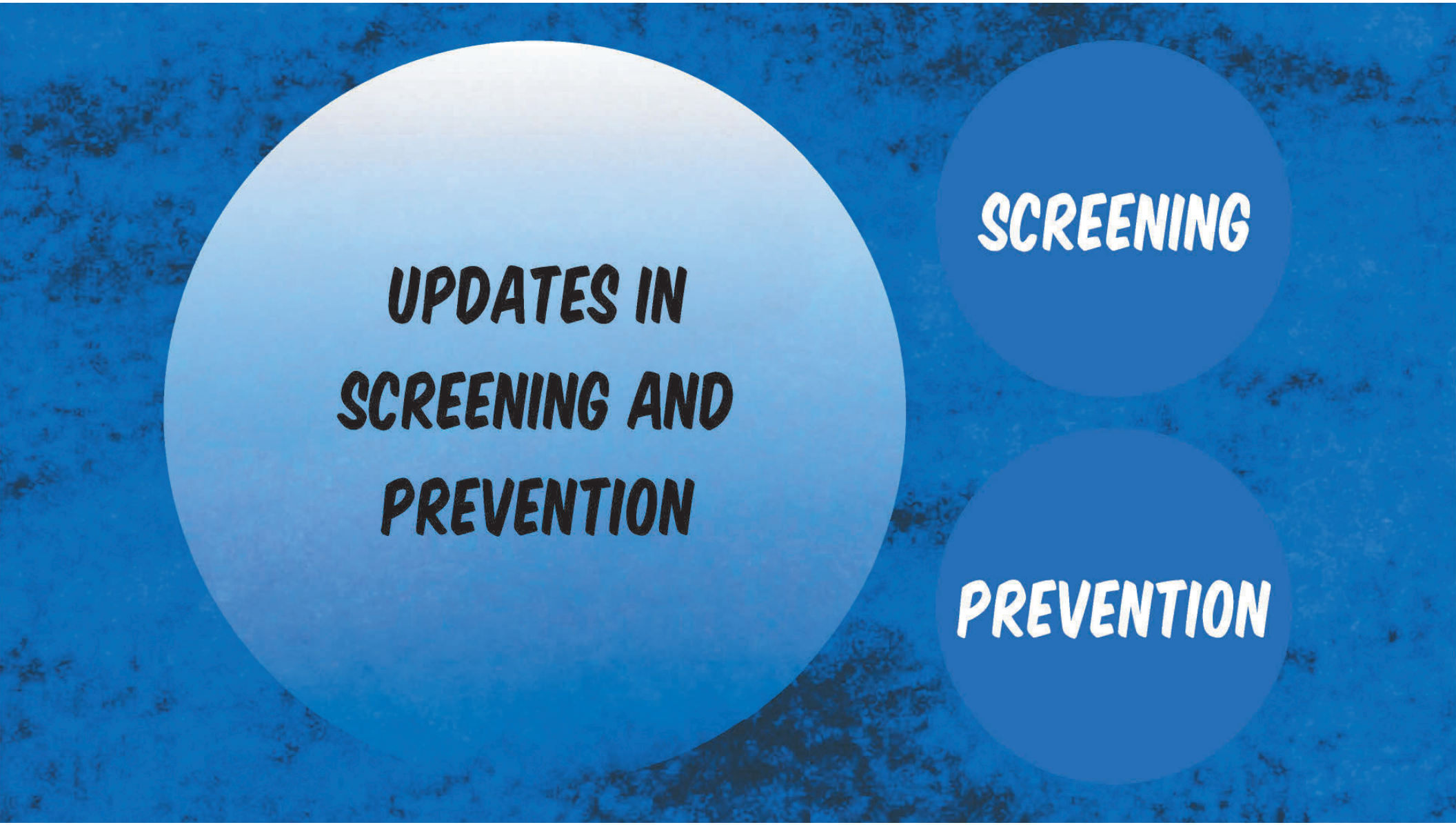
FIGURE 2. **Analogy of the Different Types of Electrical Grid Disruption. Consider the many ways an electrical grid might malfunction. Each kind of disruption requires its own approach to restore grid activity. Repairs may require that the grid function at a lower power for a time (e.g., reduced level of arousal), that certain customers lose power temporarily (e.g., dysfunction in specific neurocognitive domains), or that the entire grid be reset (e.g., a restorative night's rest). Some insults will cause irreversible damage (e.g., aging) whereas others cause only a temporary disruption of service (e.g., anesthesia). Adapted from public domain image from the US Energy Information Administration.**



Oldham, 2023

VARIED OUTCOMES IN DELIRIUM'S COURSE

- 20% of patients have symptoms of delirium 6 months after discharge (Cole 2009)
- Independent risk factor for development of dementia, post-hospitalization mortality and institutionalization (Wilson 2020)
- Delirium can significantly accelerate cognitive decline in both patients with and without pre-existing dementia (Goldberg, 2020)
- Estimated annual costs of delirium in the US range from $143 to $152 billion, surpassing hip fractures ($7 billion), nonfatal falls ($19 billion) and diabetes mellitus ($91.8 billion) (Leslie, 2011)


UPDATES IN SCREENING AND PREVENTION
SCREENING
PREVENTION

DELIRIUM SCREENING: WHICH TOOL TO USE?

Ultra-Brief	CAMs	Other Tools
• Months of the Year Backwards (MOTYB) • Simple Question for Easy Evaluation of Consciousness (SQEEC) • Single Question in Delirium (SQiD)	• Confusion Assessment Method (CAM) • CAM-ICU • bCAM • CAM-ED	• 4AT • Nursing Delirium Screening Scale (NuDESC) • Stanford Proxy Test for Delirium (S-PTD)

MONTHS OF THE YEAR BACKWARDS

ADVANTAGES

- Very brief, easy
- Very high sensitivity/specificity for delirium (83%-93% sensitivity, Meagher 2015)
- Delirious patients perform markedly worse than dementia alone (Hasemann, 2021)
- Preferred tool over "world backwards" or serial 7s

DISADVANTAGES

- The patient must participate in exam
- Variability in how it's administered
- Scoring variability

SINGLE QUESTION IN DELIRIUM (SQID)

"Do you feel that [patient's name] has been more confused lately?"

ADVANTAGES

- Very brief, easy
- Family/companions more familiar with patient's baseline
- May have utility for patients with pre-existing cognitive problems

DISADVANTAGES

- The patient must have an attentive or regularly visiting family member or friend
- Less literature on this tool, comparatively
- Scoring variability

SIMPLE QUESTION FOR EASY EVALUATION OF CONSCIOUSNESS (SQEEC)

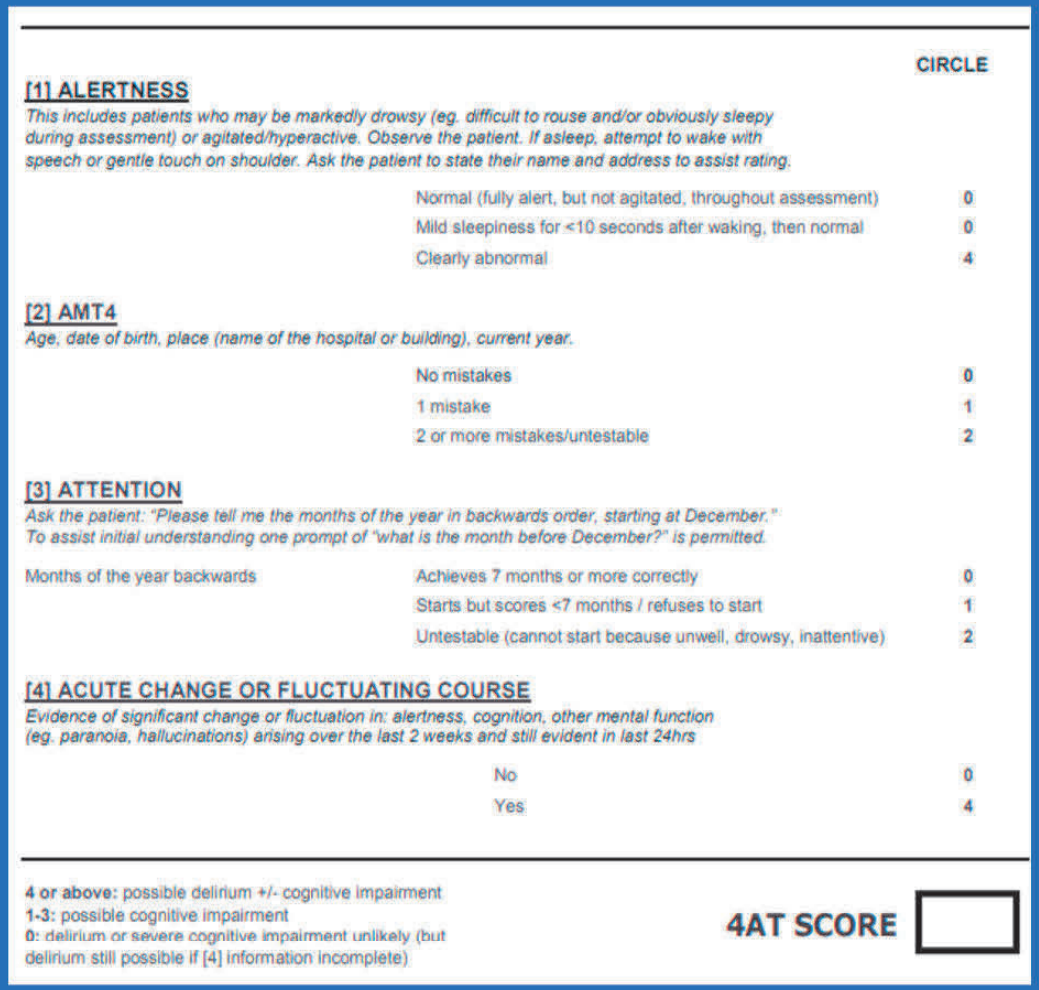
“Name a place you would like to visit that you have never been before”.
“How would you make the journey?”

ADVANTAGES

- Very brief, easy
- Administered by any clinician without training
- Tests more cognitive domains that just attention

DISADVANTAGES

- Ambiguity in defining "logical mode of transportation"
- Less literature on this tool, comparatively
- Scoring variability



CIRCLE

[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 asleep, attempt to wake with speech or gentle touch on shoulder. Ask the patient to state their name and address to assist rating.

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
	Untestable (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)

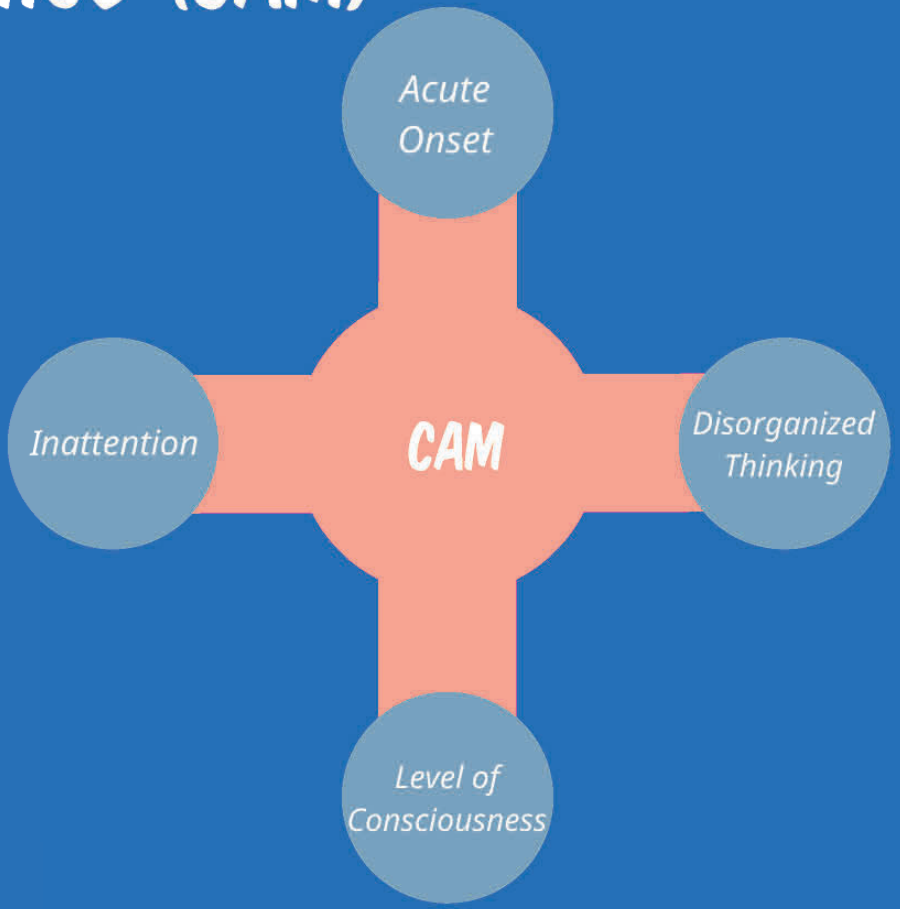
4AT SCORE

4AT

- Free, public tool with no training required
- Heavily validated in acute care setting
- Recommended tool by 2023 NICE, SIGN and Australian Commission Clinical Practice Guidelines

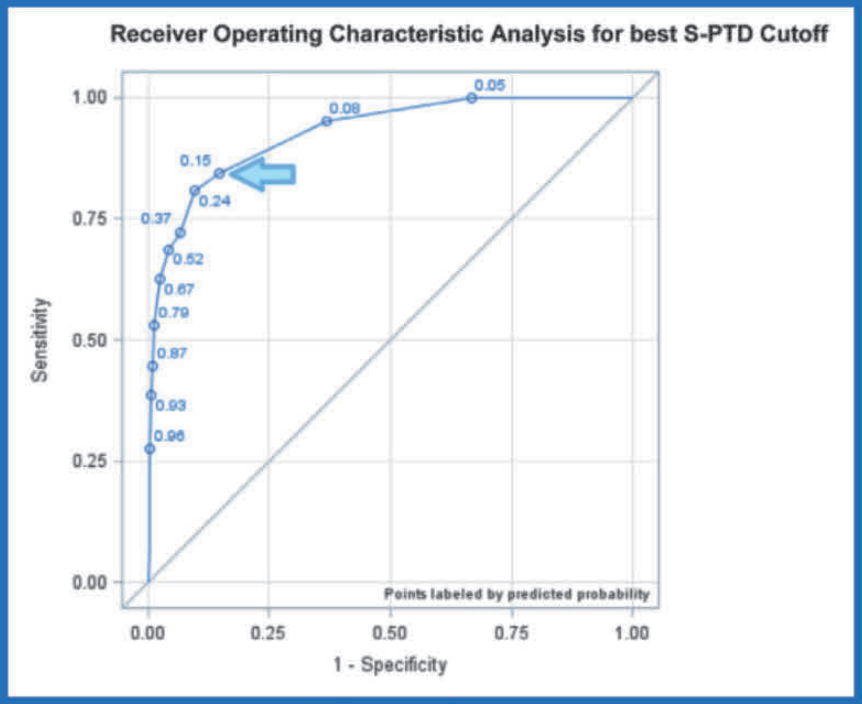
CONFUSION ASSESSMENT METHOD (CAM)

- Developed by Inouye and colleagues
- Heavily validated with multiple derivatives for different settings
- CAM-ICU is a free tool but requires training to administer
- CAM-ICU the recommended tool for critical care patients by PADIS Clinical practice guidelines



STANFORD PROXY TEST FOR DELIRIUM (S-PTD)

- Developed by nurses and consult-liaison psychiatry
- Nurses evaluate patient's on cognitive domains once per shift
- Takes about 1-2 minutes to complete
- Sensitivity - 80.72%
- Specificity - 90.37%



Maldonado, 2020

Stanford Proxy Test for Delirium Prompts

Instructions: *Score each individual prompt with either 1 if present or 0 if not present based on observations made during the current nursing shift and information provided by previous nursing staff and family. Score will range from 0 to 12, and a score equal or greater to 3 is positive for delirium.*

1 During your shift, has your patient experienced difficulties with attention?
For example:
- a. Trouble maintaining focus when you ask questions or provide directions?
- b. Easily distracted during conversations?
- c. Easily distracted from tasks requiring attention (e.g., filling out the menu)?

2 During your shift, has your patient experienced difficulties with awareness/orientation?
For example, difficulty knowing:
- a. Where he/she is?
- b. What his/her medical condition is?
- c. Why he/she is here?
- d. What the date is?

3 During your shift, has your patient experienced difficulties with memory?
For example:
- a. Forgetting why he/she was admitted to the hospital?
- b. Forgetting daily events such as visitors, meals, procedures, etc.?
- c. Forgetting the identities/roles of primary team and staff members?

4 During your shift, has your patient experienced difficulties with verbal or written language communication (not just speech)?
For example, difficulty:
- a. Knowing what an object is but being unable to recall the exact name of an object?
- b. Substituting nonsense words in place of the correct word?
- c. Responding nonsensically to straightforward questions?
- d. Producing incomprehensible/mumbling speech?

5 During your shift, has your patient experienced difficulties with learning new information?
For example, difficulties:
- a. Learning new information regarding his condition?
- b. Learning new rehabilitation maneuvers during PT/OT?
- c. Learning to use new hospital equipment (e.g. bedside urinals, crutches, wheelchair, suction)?

6 During your shift, has your patient experienced difficulties with reasoning and decision-making?
For example:
- a. Difficulties manipulating information in a logical manner while discussing care options with his/her primary team or family?
- b. Difficulties choosing a preferred option when offered alternatives (e.g. positioning in bed, blinds open vs. closed)?

7 During your shift, has your patient had visuospatial difficulties?
For example:
- a. Trouble navigating his/her meal tray?
- b. Missing when trying to grab something, or missing his/her mouth when eating, drinking, or suctioning?

8 During your shift, has your patient experienced difficulties with perceptions?
For example:
- a. Illusions, (e.g. believing that objects in the room are something else, or misinterpreting sounds/spoken language that he/she hears)?
- b. Auditory and/or visual hallucinations (e.g., picking at "stuff" in his skin or sheets, grabbing/pointing at imaginary objects; having conversations with people not present in the room?

9 During your shift, has your patient demonstrated disorganized thinking:
For example:
- a. Disorganized or rambling speech?
- b. Fixed, false beliefs that are inconsistent with reality, such as:
  1. Paranoia (e.g. beliefs that the team is trying to poison him/her)?
  2. Grandiose ideas?
- 3. Ideas of reference (e.g. thinking irrelevant events are of special significance to his/her life)?

10 During your shift, has your patient experienced changes in behavior and/or psychomotor activity?
For example:
- a. Acted unusually agitated and hyperalert (e.g., on the edge)
- b. Demonstrated rapid and unpredictable changes in mood?
- c. Acted unusually slowed (in either thinking or movements) and withdrawn, exhibiting a noticeable lack of movement, subdued, sad or depressed?

11 During your shift, has your patient had changes in sleep pattern?
For example:
- a. Experienced insomnia?
- b. Demonstrated excessive daytime somnolence which is clinically significant and impairing daily function?
- c. Has your patient experienced extremely vivid and disturbing dreams during the daytime?
- d. Talking about events from sleep/dreams as if they had actually occurred?

12 Do the disturbance/changes described above developed over a relatively short period of time (hours to days) and represent a change from the patient's baseline attention and awareness, and tends to fluctuate in severity during the course of a day?

12 questions
Score >3 =
Positive Screen

BASICS IN DELIRIUM PREVENTION

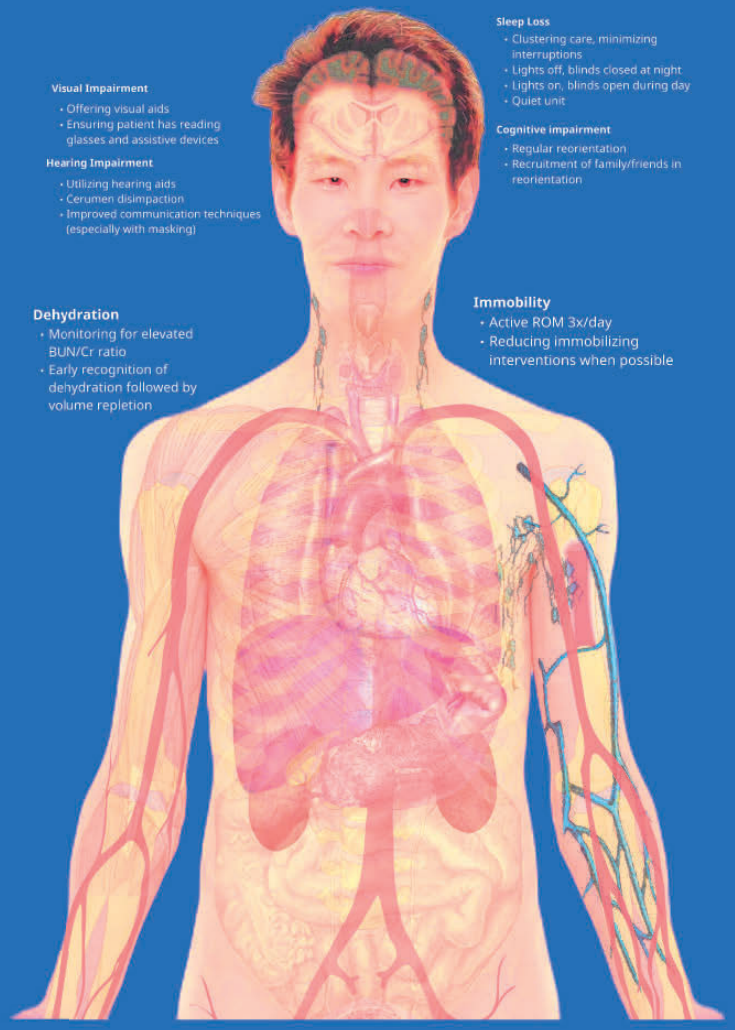
1	*Delirium is preventable in up to 40% of patients*
2	*Multi-component, nonpharm interventions are key*
3	*Single-component interventions are ineffective*
4	*No medication conclusively prevents delirium*
5	*Different recommendations for general care vs critical care*

HOSPITAL ELDER LIFE PROGRAM (HELP)

- Developed by Dr. Inouye and colleagues in 1999 to prevent delirium and functional decline
- Remains the most studied and applicable delirium prevention program for older adults (Hshieh, 2018, Shen, 2024)
- Program is licensed and owned by the American Geriatrics Society CoCare

COMPONENTS OF DELIRIUM PREVENTION

Inouye, 1999



Visual Impairment

- Offering visual aids
- Ensuring patient has reading glasses and assistive devices

Hearing Impairment

- Utilizing hearing aids
- Cerumen disimpaction
- Improved communication techniques (especially with masking)

Sleep Loss

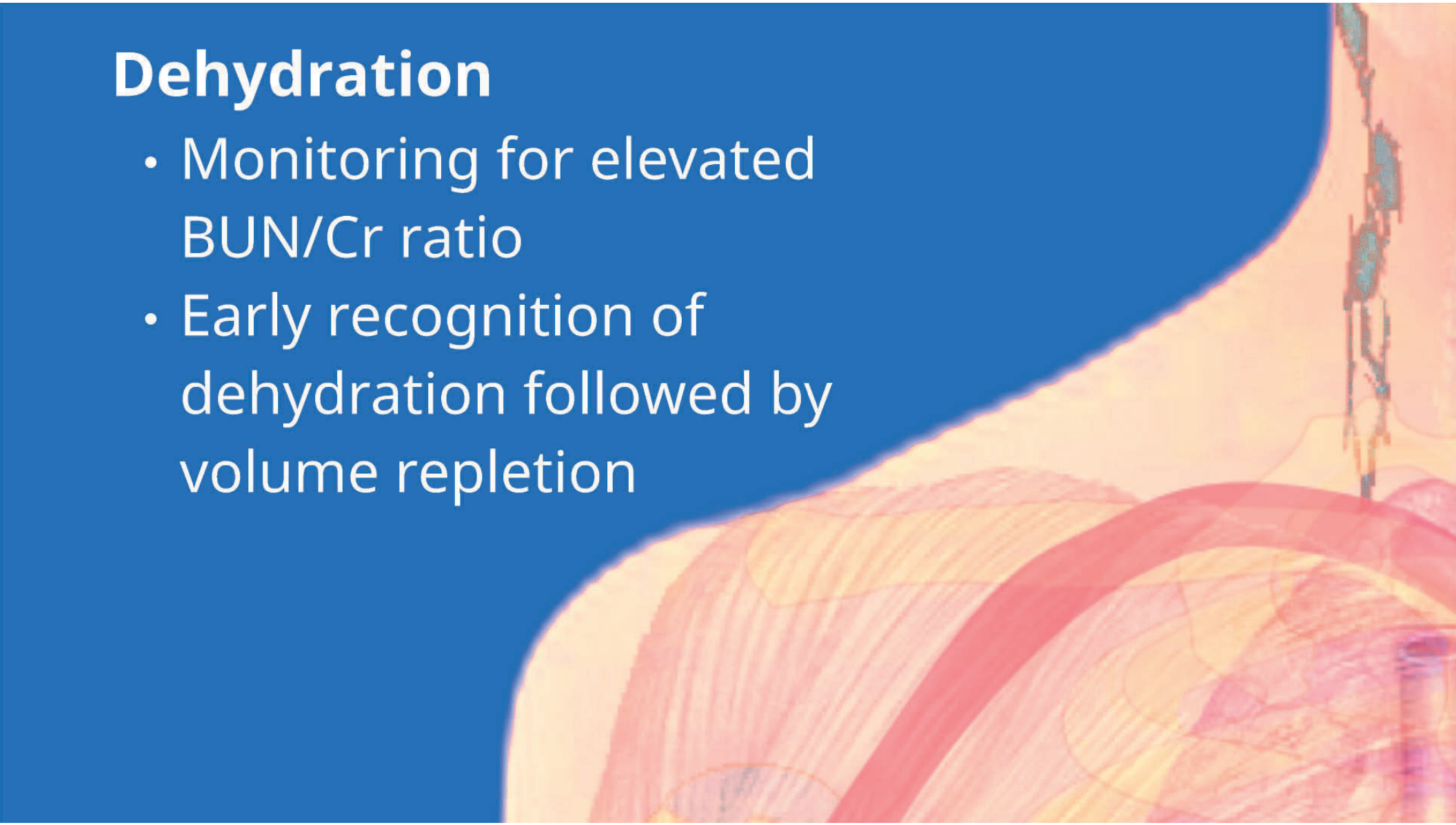
- Clustering care, minimizing interruptions
- Lights off, blinds closed at night
- Lights on, blinds open during day
- Quiet unit

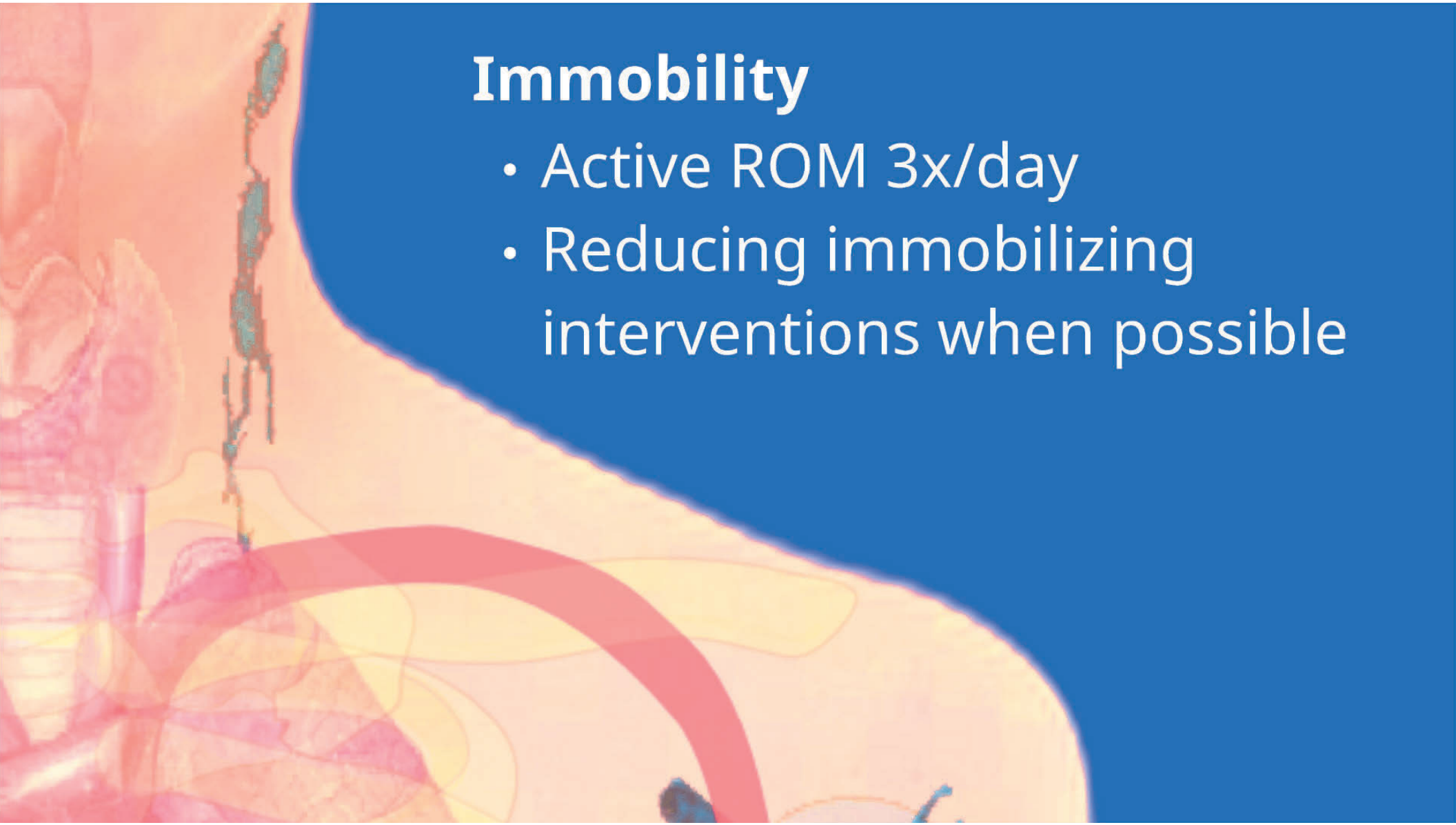
Cognitive impairment

- Regular reorientation
- Recruitment of family/friends in reorientation

Dehydration

- Monitoring for elevated BUN/Cr ratio
- Early recognition of dehydration followed by volume repletion




Immobility
• Active ROM 3x/day
• Reducing immobilizing interventions when possible

ABCDEF BUNDLE: STILL THE GOLD STANDARD IN DELIRIUM PREVENTION IN CRITICAL CARE

- Developed by Society of Critical Care Medicine as a comprehensive approach to ICU care
- Remains the most studied and effective multi-disciplinary approach towards delirium prevention and management
- Extensively demonstrated to reduce death, ICU days, days with delirium, use of physical restraints and discharges to skilled nursing/rehabilitation

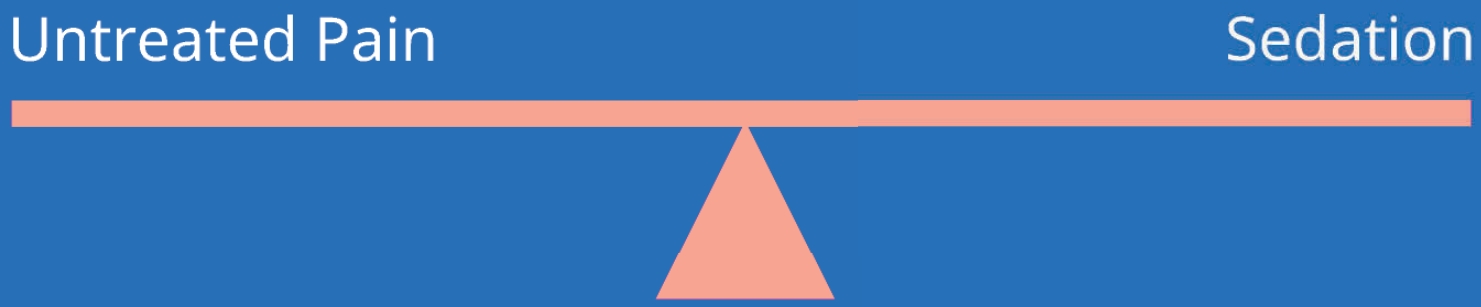
ABCDEF BUNDLE FOR CRITICALLY ILL PATIENTS

- **A** — *Assess, prevent & manage pain*
- **B** — *Both spontaneous awakening trials & spontaneous breathing trial*
- **C** — *Choice of analgesia & sedation*
- **D** — *Delirium: assess, prevent & manage*
- **E** — *Early mobility & exercise*
- **F** — *Family engagement & empowerment*

Swart, 2017

A Assess, prevent & manage pain

- Untreated or under treated pain is a risk factor for delirium
- Small, low-quality data on relative risk of opioids and delirium
  - Tramadol & Meperidine possibly higher risk due to active anticholinergic metabolites
  - Fentanyl and hydromorphone may be more protective



B

Both spontaneous awakening trials & spontaneous breathing trials

Sheabi, 2012

Spontaneous Awakening Trials

- Daily trials of no sedation
- Deep, early sedation (RASS scores -3 to -5) associated with worse outcomes

Spontaneous Breathing Trials

- Spontaneous breathing trials every day better than other techniques

C

Choice of analgesia & sedation

Hughes, 2021
Riker, 2009
Pandharipande, 2007

- Exposure to benzodiazepines associated with worsened outcomes
- Non-benzodiazepine sedative options preferable (dexmedetomidine, propofol)
    - SEDCOM Trial: dexmedetomidine performed better than midazolam for reducing delirium in mechanically ventilated patients
    - MENDS Trial: dexmedetomidine performed better than lorazepam for more days alive without delirium or coma in mechanically ventilated patients

D

Delirium: Assess, Prevent & Manage

E Early Mobility & Exercise

Schweickert, 2009

	Intervention (n=49)	Control (n=55)	p value
Return to independent functional status at hospital discharge	29 (59%)	19 (35%)	0·02
ICU delirium (days)	2·0 (0·0–6·0)	4·0 (2·0–7·0)	0·03
Time in ICU with delirium (%)	33% (0–58)	57% (33–69)	0·02
Hospital delirium (days)	2·0 (0·0–6·0)	4·0 (2·0–8·0)	0·02
Hospital days with delirium (%)	28% (26)	41% (27)	0·01
Barthel Index score at hospital discharge	75 (7·5–95)	55 (0–85)	0·05
ICU-acquired paresis at hospital discharge	15 (31%)	27 (49%)	0·09
Ventilator-free days*	23·5 (7·4–25·6)	21·1 (0·0–23·8)	0·05
Duration of mechanical ventilation (days)	3·4 (2·3–7·3)	6·1 (4·0–9·6)	0·02
Duration of mechanical ventilation, survivors (days)	3·7 (2·3–7·7)	5·6 (3·4–8·4)	0·19
Duration of mechanical ventilation, non-survivors (days)	2·5 (2·4–5·5)	9·5 (5·9–14·1)	0·04
Length of stay in ICU (days)	5·9 (4·5–13·2)	7·9 (6·1–12·9)	0·08
Length of stay in hospital (days)	13·5 (8·0–23·1)	12·9 (8·9–19·8)	0·93
Hospital mortality	9 (18%)	14 (25%)	0·53

Data are n (%), median (IQR), or mean (SD). ICU=intensive care unit. *Ventilator-free days from study day 1 to day 28. Barthel Index scale 0–100, APACHE II scale 0–71.

Table 3: **Main outcomes according to study group**

	Intervention (n=49)	Control (n=55)
Home*	21 (43%)	13 (24%)
Acute rehabilitation	13 (27%)	17 (31%)
Subacute rehabilitation	0 (0%)	6 (11%)
Long-term rehabilitation	5 (10%)	3 (5%)
Nursing home	1 (2%)	1 (2%)
Hospice	0 (0%)	1 (2%)
Death	9 (18%)	14 (25%)

*p=0·06 for comparison of home discharge to all other possible locations for the comparison of both groups.

Table 5: **Subsequent location of patients after hospital discharge**

- Movement is medicine!

Balas, 2019

F

Family engagement & empowerment

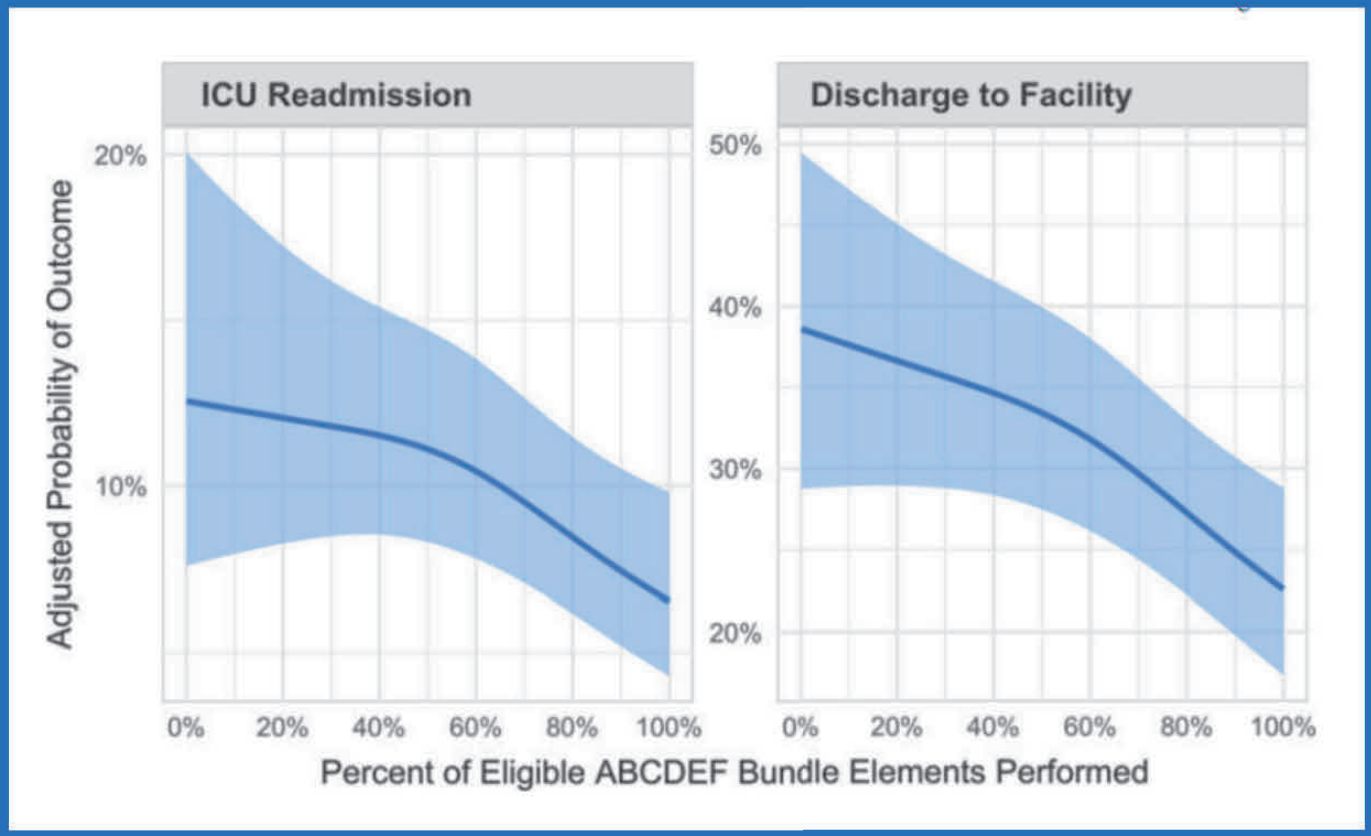
What we think of

- Family updated on plan of care
- Family involved in goals of care discussion

What it can be

- Family participates in ICU team rounding
- 24 hour visitor policy
- Family educated on delirium and prevention
- Family involved in re-orientation efforts
- Family involved in ethics and palliative medicine decision-making

Pun, 2019



"Dose-Dependent" Response to ABCDEF Bundle


DELIRIUM PREVENTION AND MANAGEMENT OVERLAP
BASICS
ANTIPSYCHOTIC STEWARDSHIP

CHALLENGES OF DELIRIUM MANAGEMENT

1. There's no universal approach nor workup
2. Evidence is lacking on effectiveness of delirium management
3. Considerable overlap in Prevention and management approaches
4. Pharmacology has a limited role in delirium management

	Initiate TIME within 2 hours (initial and write time of completion)	Assessed/ sent	Results seen	Abnormality found
T	**Think exclude and treat possible triggers**			
	NEWS (think sepsis six)			
	Blood glucose			
	Medication history (identify new medications/change of dose/medication recently stopped)			
	Pain review (Abbey Pain Scale)			
	Assess for urinary retention			
	Assess for constipation			
I	**Investigate and intervene to correct underlying causes**			
	Assess Hydration and start fluid balance chart			
	Bloods (FBC, U&E, Ca, LFTs, CRP, Mg, Glucose)			
	Look for symptoms/signs of infection (skin, chest, urine, CNS) and perform appropriate cultures/imaging depending on clinical assessment (see sepsis six)			
	ECG (ACS)			
M	**Management Plan**			*Completed*
	Initiate treatment of ALL underlying causes found above			
E	**Engage and Explore** (complete within 2 hours or if family/carer not present within 24 hours)			
	Engage with patient/family/carer – explore if this is usual behaviour. Ask: How would you like to be involved?			
	Explain diagnosis of delirium to patient and family/carers (use delirium leaflet)			
	Document diagnosis of delirium			

THE "TIME" BUNDLE

Bauernfreund, 2018

- Think
- Investigate
- Manage
- Engage

PROBLEMS WITH DELIRIUM SOURCE

Cole, 2009
Hijazi, 2018
Oldham, 2018
Whitby, 2022

- Treating the underlying **causes** of delirium is ideal.
    - However, delirium can persist for well after the **causes** have resolved (36% of patients delirious at discharge, 25.6% delirious 6 months after discharge, 13% delirious 1 year after discharge)
- There is no "universal delirium workup" given the heterogeneity of sources.
    - 11% of positive head CTs in delirium workup


DELIRIUM PREVENTION AND MANAGEMENT OVERLAP
BASICS
ANTIPSYCHOTIC STEWARDSHIP

CPG OPINIONS ON ROLE OF ANTIPSYCHOTICS

"*Studies of the efficacy of antipsychotics are heterogenous and inconclusive. Most are small and rated as low or very low quality.*"
-SIGN Risk reduction and management of delirium

"*The prescribing practitioner may use antipsychotics at the lowest effective dose for the shortest possible duration to treat patients who are severely agitated or distressed, and are threatening substantial harm to self and/or others*" -AGS Clinical Practice Guideline for Postoperative Delirium in Older Adults

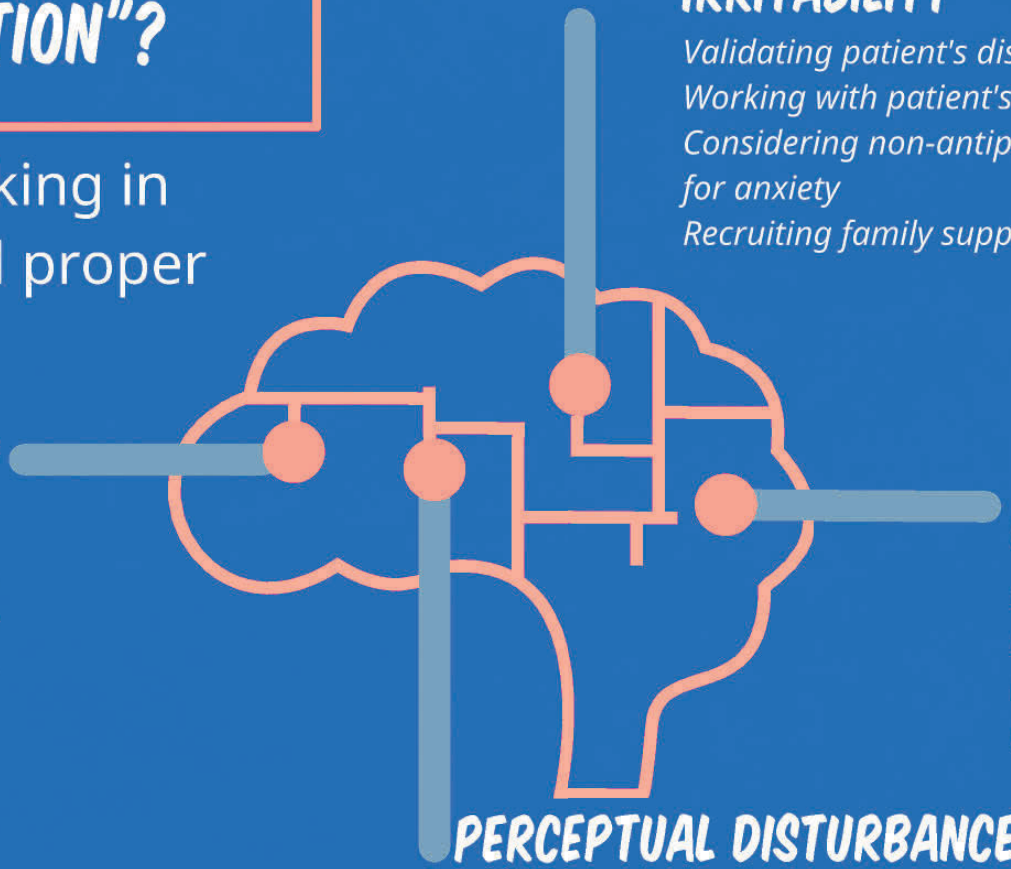
CPG OPINIONS ON ROLE OF ANTIPSYCHOTICS

"*Evidence does not support the routine use of antipsychotics for treating delirium. However short-term antipsychotic use may be considered in limited circumstances*" - Australian Delirium CPG

"*This evidence suggests that the use of the typical antipsychotic, haloperidol; an atypical antipsychotic (e.g., quetiapine, ziprasidone); or a statin was not associated with a shorter duration of delirium, a reduced duration of mechanical ventilation or ICU LOS, or decreased mortality.*" - Society of Critical Care Medicine CPG

WHAT IS "AGITATION"?

"Agitation" often lacking in clarity, precision and proper documentation



IRRITABILITY

Validating patient's distress
Working with patient's normal routine
Considering non-antipsychotic medications for anxiety
Recruiting family support

IMPULSIVITY

Redirection
Utilizing 1:1 safety aids
Reduce sensory overload
Distraction techniques

RESISTING CARE

Structure and routine
Discerning "needs and wants"
Protected rest time

PERCEPTUAL DISTURBANCES

Testing patient's insight
Tolerating "low-grade" hallucinations
Reduce pharmacology rather than add

IMPULSIVITY

Redirection

Utilizing 1:1 safety aids

Reduce sensory overload

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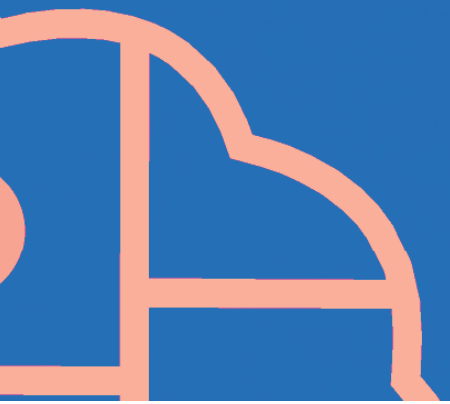


RESISTING CARE

Structure and routine

Discerning "needs and wants"

Protected rest time

PERCEPTUAL DISTURBANCES

Testing patient's insight

Tolerating "low-grade" hallucinations

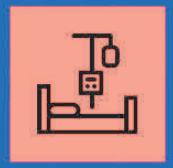
Reduce pharmacology rather than add

THRESHOLD FOR CONSIDERING ANTIPSYCHOTICS

1	*Intractable agitation causing harm to patient and staff*
2	*Disturbing perceptual disturbances affecting engagement*
3	*Transitioning patient off higher risk interventions*
4	*Agitation preventing weening off ventilator*
5	*Severe impulsivity affecting patient and staff safety*

IF AN ANTIPSYCHOTIC MUST BE USED...

Use in conjunction with a comprehensive approach and for shortest possible duration. Consider staff familiarity before choosing agent.



Haloperidol has "pure" binding profile, preferred option if using an AP

Olanzapine has strong antihistaminergic effects and mild to moderate anticholinergic effects

Ziprasidone has higher liability for QTc prolongation. Has a maximum daily dose

Quetiapine has has strong antihistaminergic effects and mild to moderate anticholinergic effects

NON-ANTIPSYCHOTICS OCCASIONALLY USED IN DELIRIUM

- Gabapentin and Pregabalin (PO)
- Melatonin and Ramelteon (PO)
- Trazodone (PO)
- Clonidine (PO, Transdermal)
- Guanfacine (PO)
- Valproic Acid (PO, IV)
- Lithium (PO)

MINDFUL APPROACHES TO DELIRIUM

PRUDENT USE OF ANTIPSYCHOTICS AND CONSIDERATION OF ALTERNATIVES

Joseph Lyon, MSN, RN, FNP-BC, PMHNP-BC

March 20th 2024

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MINDFUL APPROACHES TO DELIRIUM

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Joseph Lyon, MSN, RN, FNP-BC, PMHNP-BC

March 20th 2024