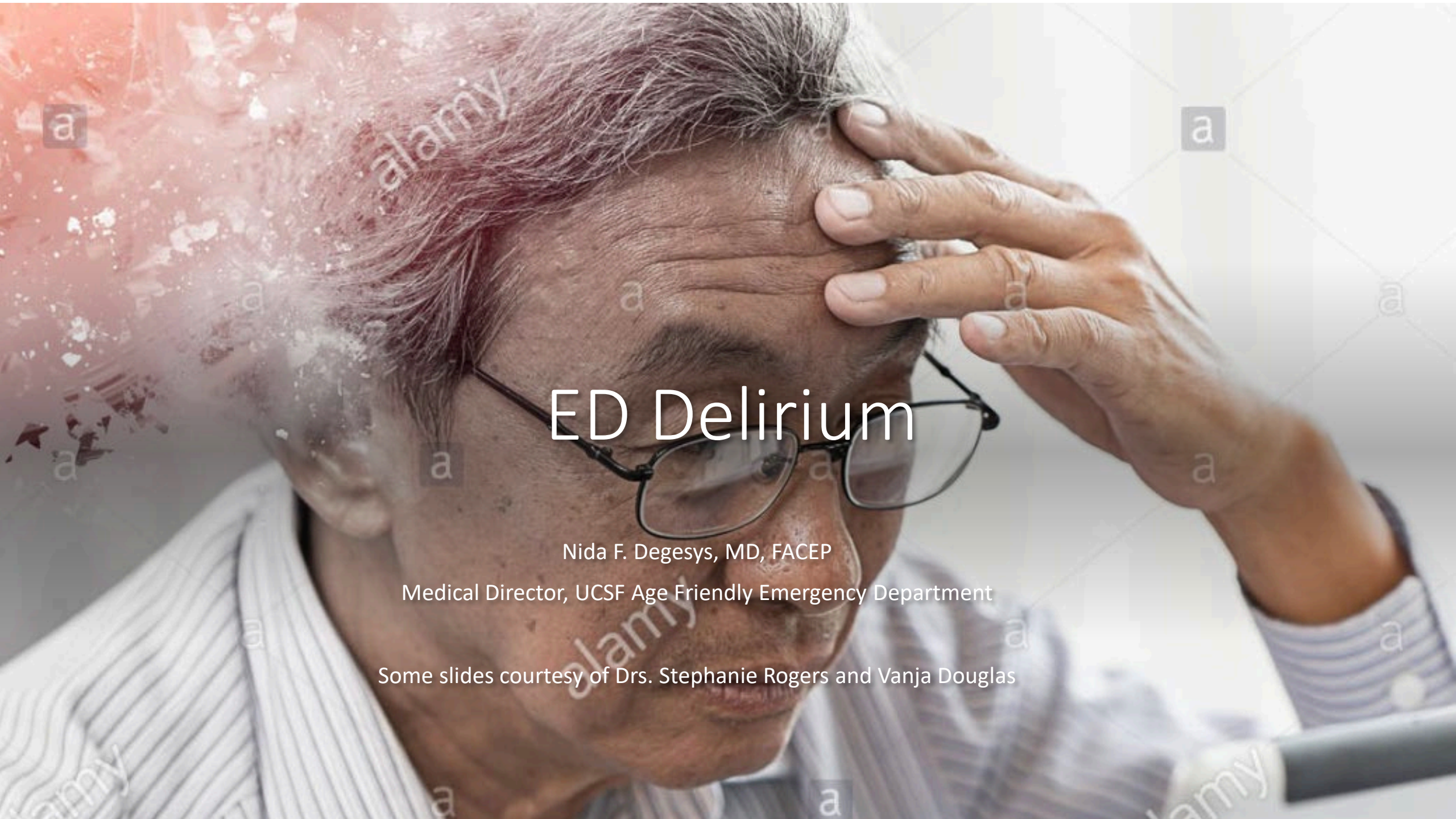


ED Delirium

Nida F. Degesys, MD, FACEP

Medical Director, UCSF Age Friendly Emergency Department

Some slides courtesy of Drs. Stephanie Rogers and Vanja Douglas

ILOs

- Define delirium
- Recognize morbidity of delirium
- Identify delirium using screening assessments
- Prevention of delirium
- Treatment of delirium

Patient D

What is delirium?

A. A disturbance in ***attention*** and ***awareness***

B. The disturbance ***develops over a short period of time*** (usually hours to a few days), represents a ***change from baseline*** attention and awareness, and tends to ***fluctuate*** in severity during the course of a day.

C. An additional ***disturbance in cognition*** (e.g., memory deficit, disorientation, language, visuospatial ability, or perception).

D. The disturbances in Criteria A and C are ***not better explained by*** another preexisting, established, or evolving neurocognitive disorder and do not occur in the context of a severely reduced level of arousal, such as coma.

E. There is evidence from the history, physical examination, or laboratory findings that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal, or is due to multiple etiologies.

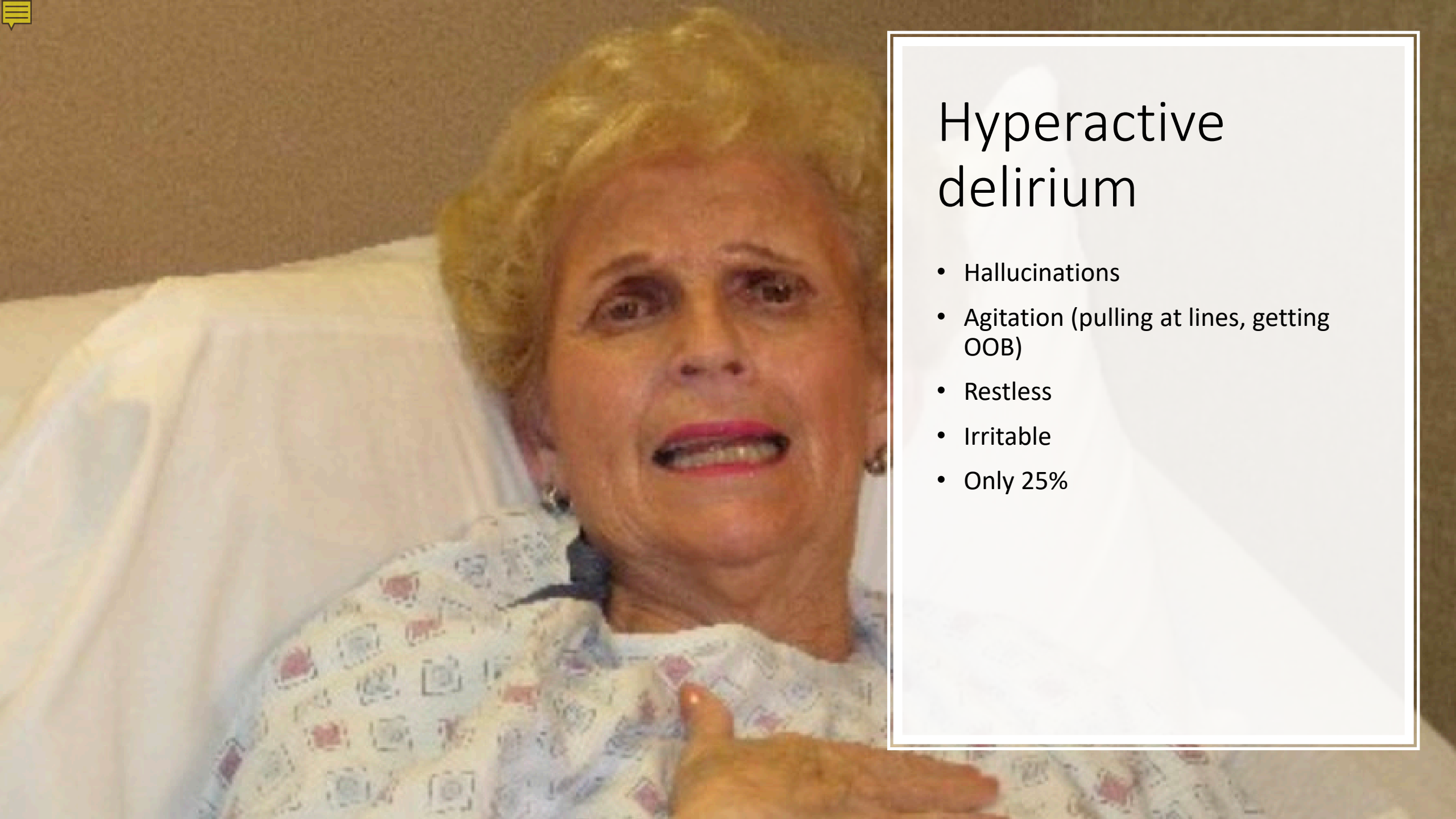
TRUE

FALSE

Most delirious patients are agitated and trying to climb out of bed.

FALSE

Only 25% of delirium cases are hyperactive. Most cases of delirium are hypoactive or mixed.



Hyperactive delirium

- Hallucinations
- Agitation (pulling at lines, getting OOB)
- Restless
- Irritable
- Only 25%

Hypoactive Delirium

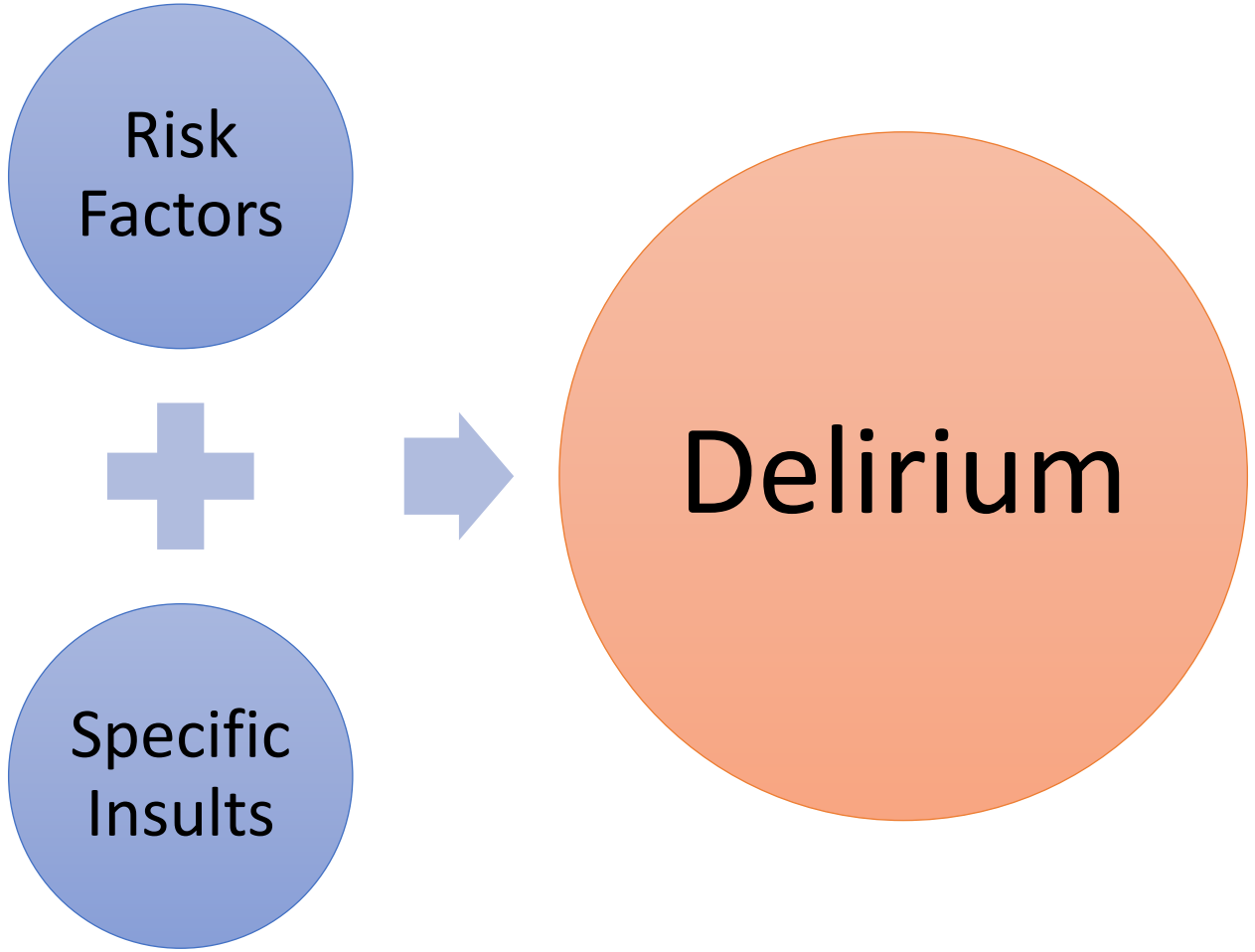
- Sleepy
- Withdrawn
- Hard to arouse
- Slowed speech
- Highest mortality rate
- Higher rates of pressure ulcers and hospital-acquired infections.

Mixed

Patients can exhibit characteristics of both hyperactive and hypoactive delirium across the day.

Slide Courtesy of Dr. Stephanie Rogers

Model of Delirium



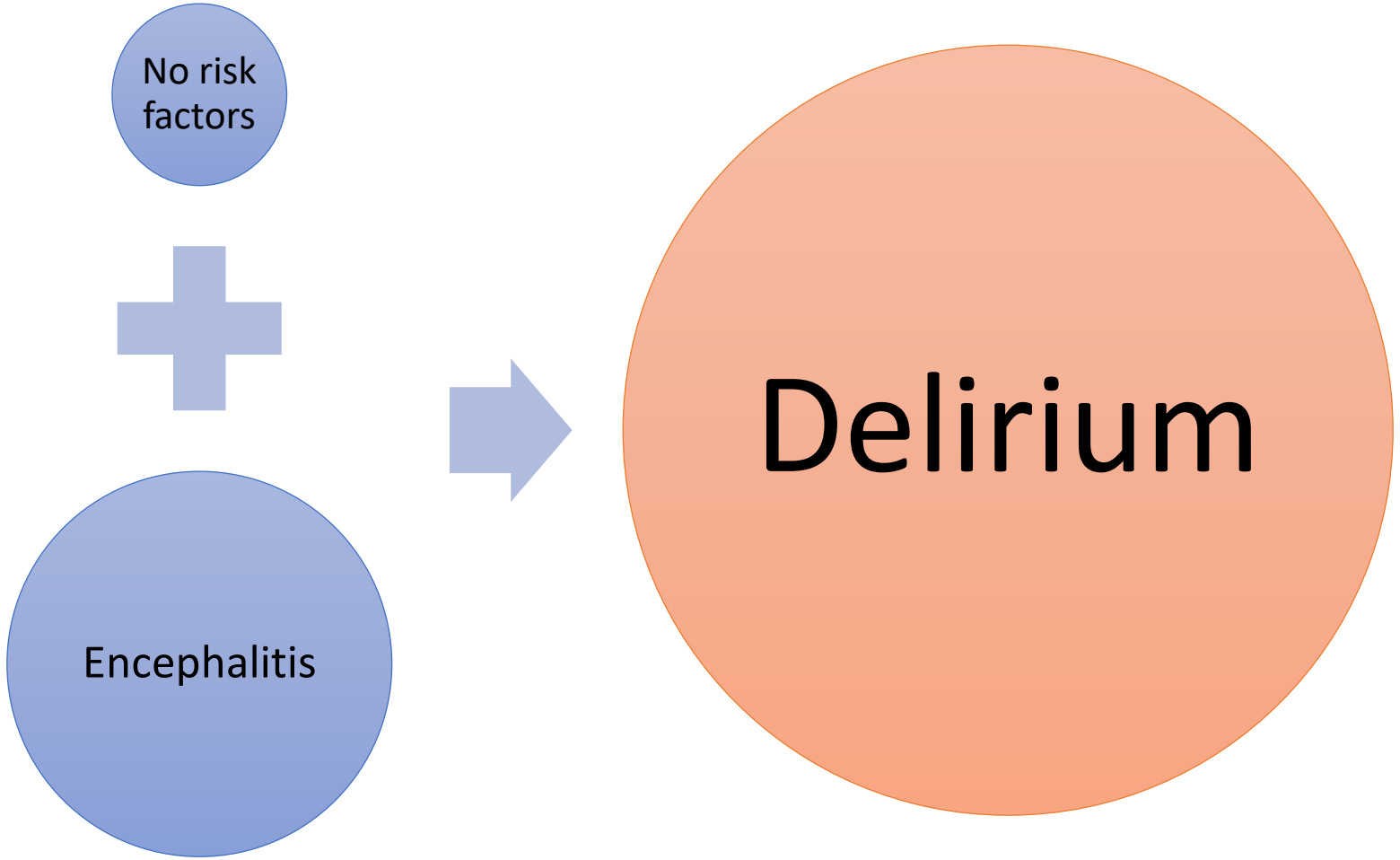
Slide courtesy of Dr. Vanja Douglas

Precipitating Insult

D-rugs
E-lectrolytes (Na, Ca, CO2), **E-**nvironment change
L-ack of drugs (withdrawal), **L**-ack of sleep
I-ntracranial (stroke, bleed, meningitis)

R-estraints, **R**-educed sensory input (vision/hearing)
I-nfection
U-rinary retention, fecal impaction
M-etabolic (hypoglycemia, uremia, liver failure, thyroid dysfunction, B1 deficiency) / **M**-yocardial (cardiac bypass)

Model of Delirium

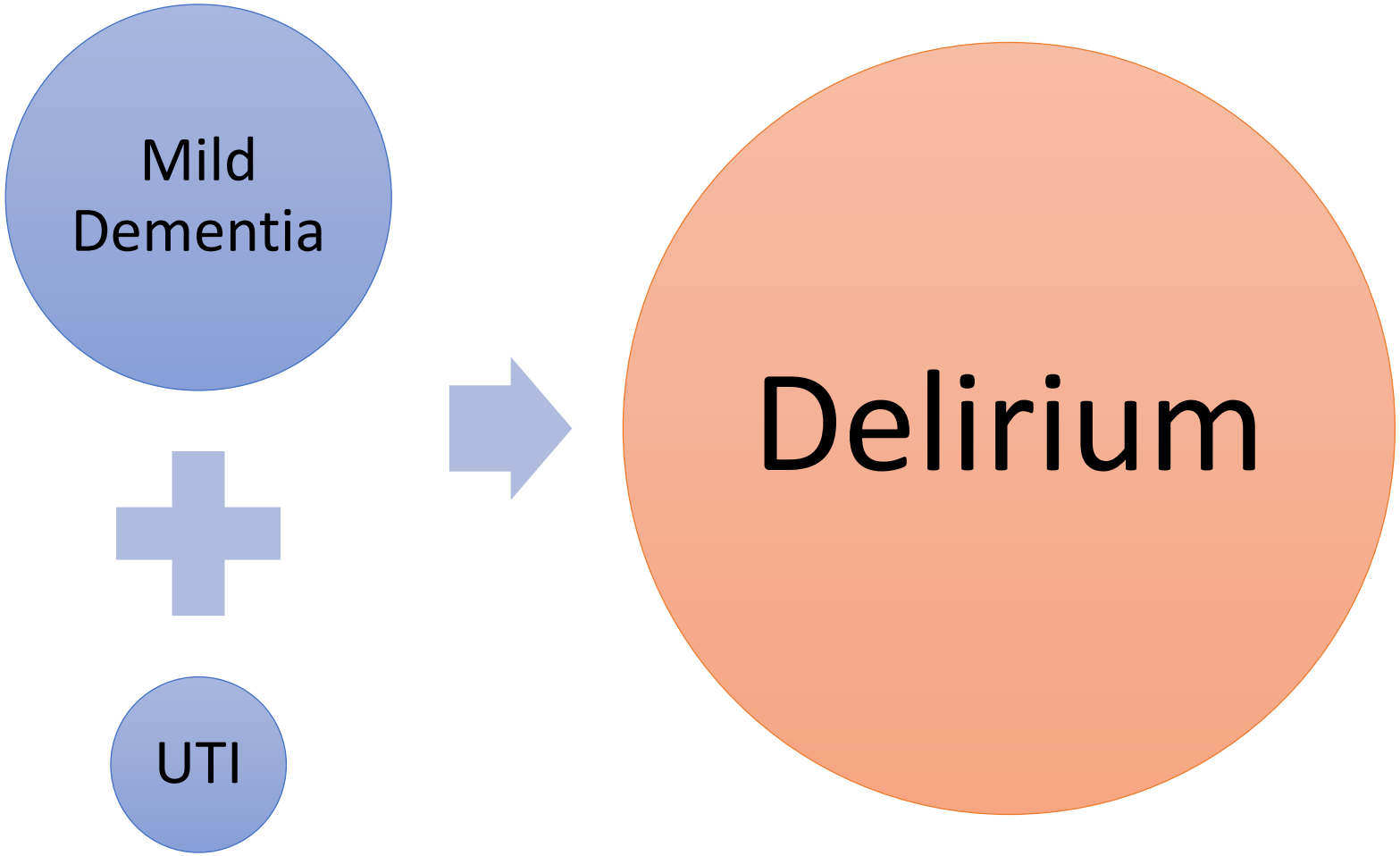


Slide courtesy of Dr. Vanja Douglas

Risk Factors

- Age (>80)
- History of DEMENTIA, stroke, or Parkinson's disease
- Functional impairment (ADLs, IADLs,)
- Sensory impairment (hearing, vision)
- Depression
- Alcohol abuse
- Long ED stay
- Dehydration
- Malnutrition

Model of Delirium



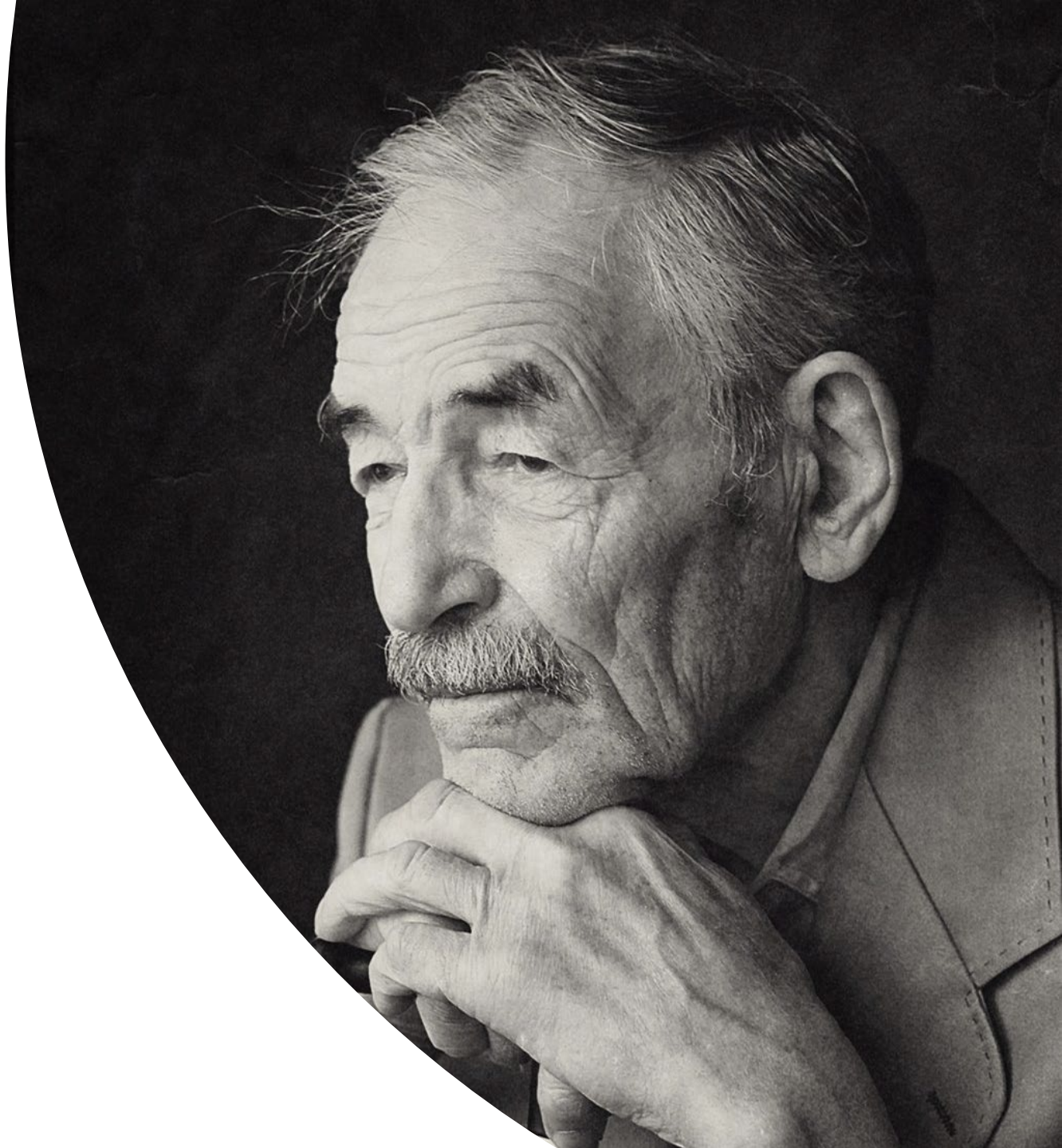
Slide courtesy of Dr. Vanja Douglas

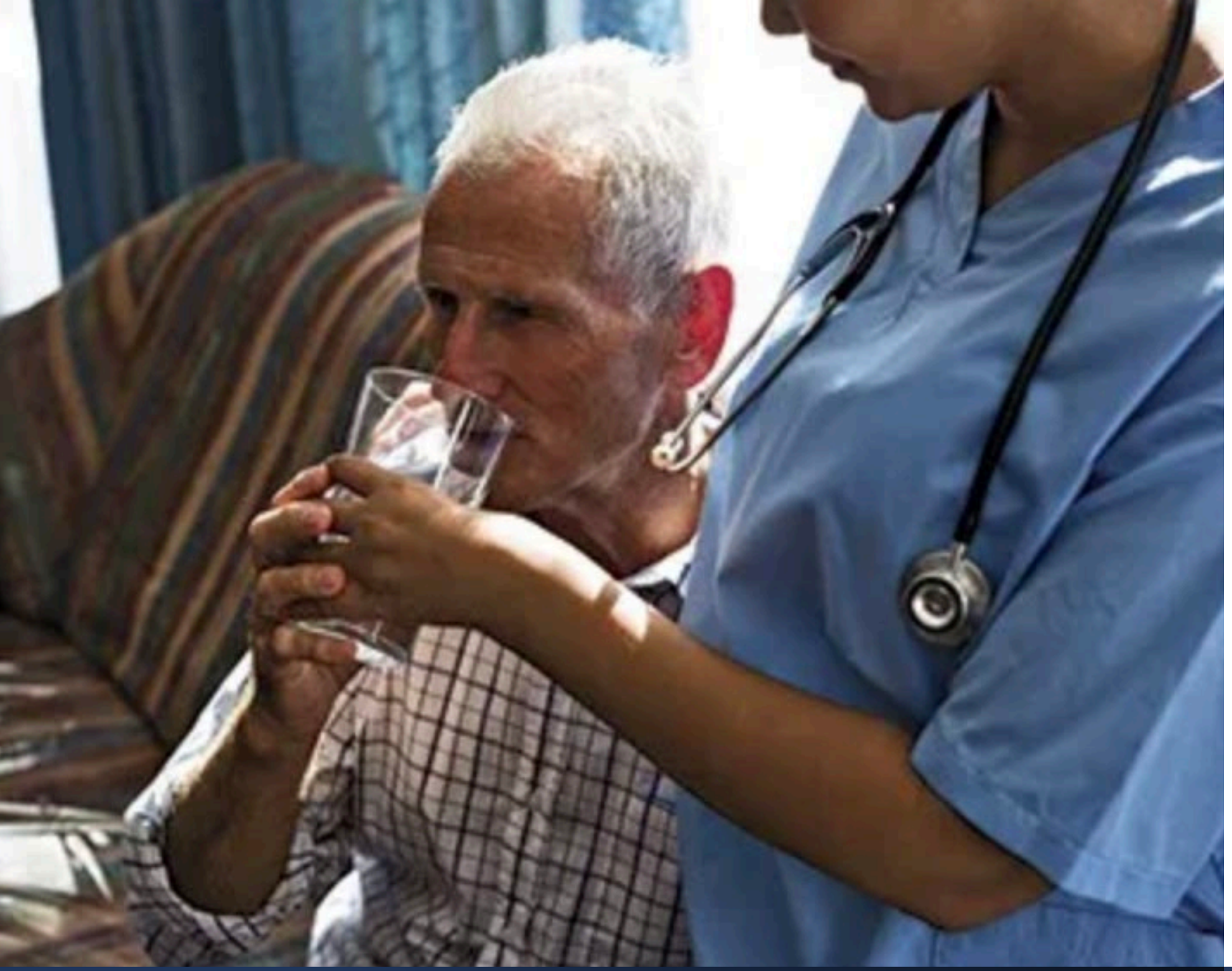
How Common is it?

- 29-64% of all hospitalized patients (1)
  - Medical patients:
    - Prevalence (present on admission): 18-35%
    - Incidence (develops in the hospital): 11-14%
  - Surgical patients:
    - Incidence: 11-51%
  - ICU patients
    - Prevalence + Incidence: 80-85%
- 17% of geri ED patients (2)
- 50-75% of delirium is MISSED (3)
  - ED 76% missed rate

Why is Delirium Bad?

- Mortality
  - 35-40% die within 1 year (Moran, 2001)
  - = acute MI and sepsis (22-76%) (Inouye NEJM 2006)
- Complications
  - 35% iatrogenic complications (falls, CAUTIS, PUs) (Inouye NEJM 2006)
  - Worsening dementia: 2x rate (Vasilevskis JAMA IM 2012)
  - DC more to SNF/NH: 83% (McAvery JAGS 2006)
- Increased LOS of 7.78 days (McCusker JAGS 2003)
- Costly
  - Inc $2,500 per patient (Inuoye NEJM 2006)





Prevention

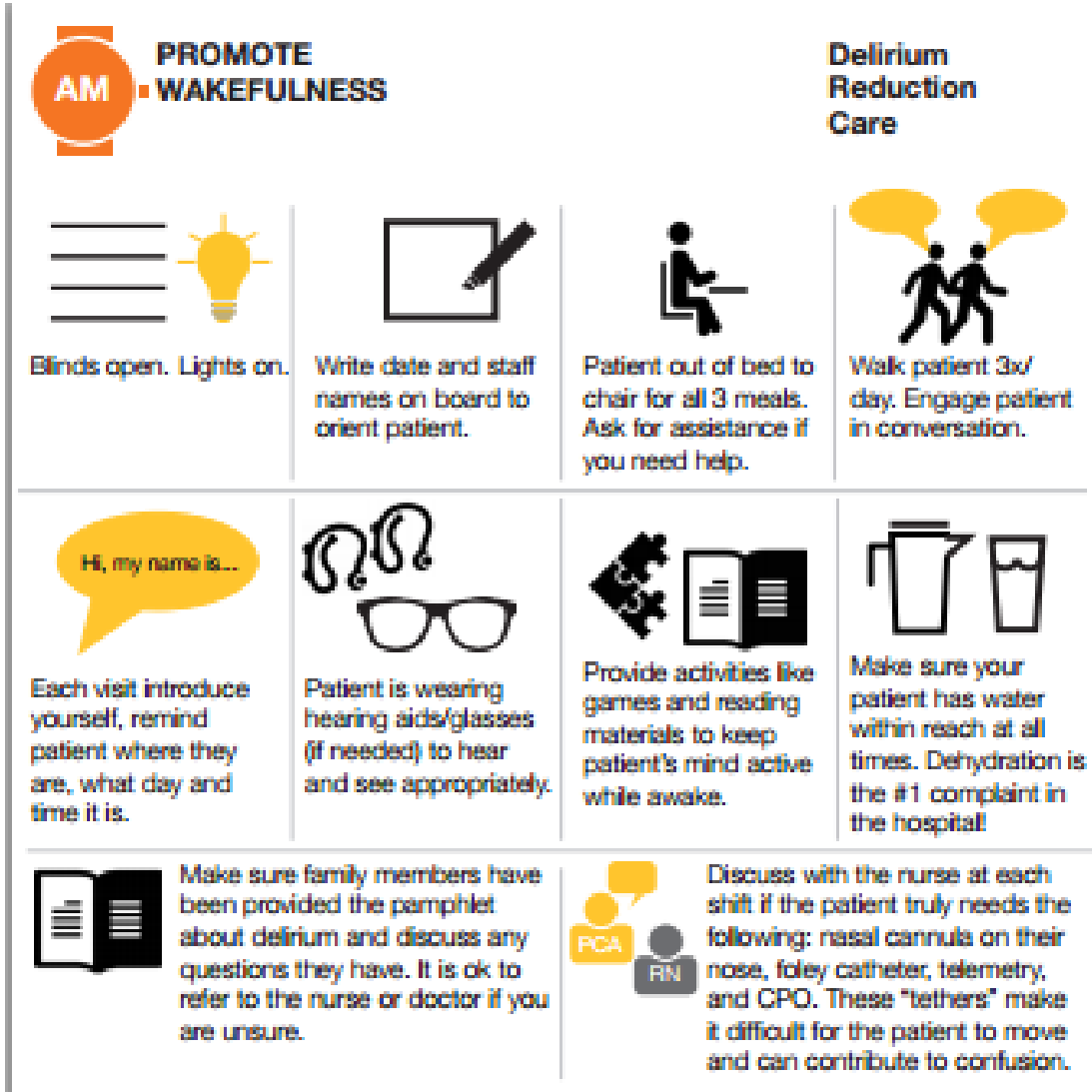
- **<u>30-40% is preventable</u>**
- Multi-component intervention
  - Cognitive stimulation
  - Sleep promotion
  - Mobilization
  - Adequate nutrition & hydration

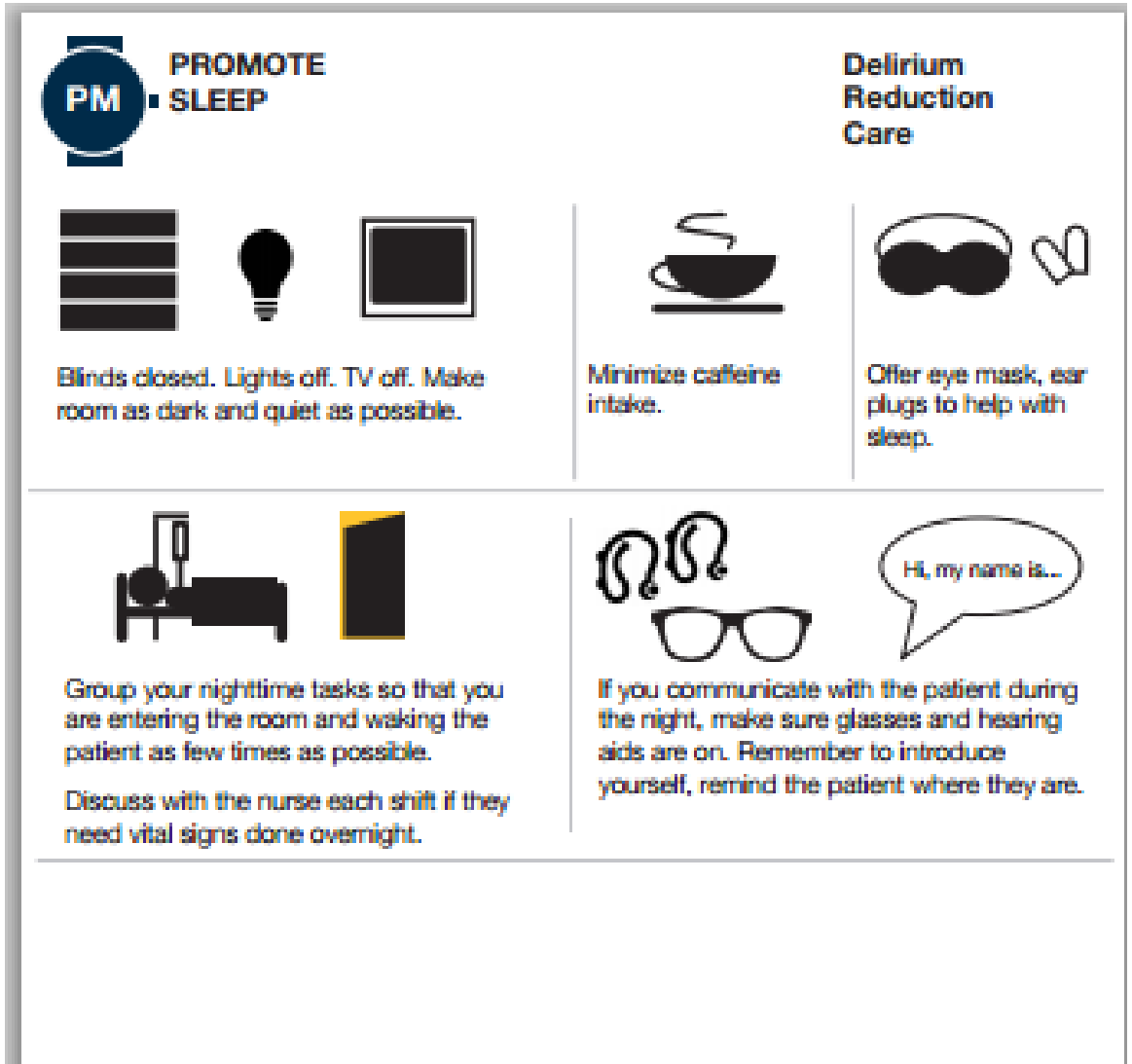
- Current evidence does NOT support the use of antipsychotics for prevention or treatment of delirium (Inouye, Lancet 2013)

Prevention: Non-pharmacologic

Risk factor for delirium	Targeted intervention
Cognitive Impairment	Board with names of care team members and day's schedule Frequent reorientation
Sleep Deprivation	Bedtime routine, avoid naps Unit-wide noise-reduction strategies Schedule adjustments to allow sleep
Immobility	Early ambulation, bed exercises Minimal use of catheters and restraints
Vision impairment < 20/70	Use of visual aids Adaptive equipment
Hearing impairment	Portable amplifying devices Earwax disimpaction
Dehydration (BUN/Cr ratio >18)	Oral rehydration

Non-pharmacologic behavioral intervention





Sleep Promotion: Earplugs

- 832 patients in 5 studies
- Relative risk 0.59 (95% CI 0.44-0.78)
- Part of sleep promotion bundle in some of these studies

Litton et al, *Crit Care Med* 2016

AWOL

All non-ICU patients get **AWOL screening once upon arrival to the floor** by their primary RN. All ICU patients are considered high risk (thus AWOL is not indicated in the ICU).

Scoring

A	W	O	L
Age ≥ 80 years	Unable to correctly spell 'WORLD' backwards	Not oriented to city, state, county, hospital name and floor	Nursing illness severity assessment of moderately ill or greater
1 point	**1 point**	**1 point**	**1 point**

AWOL Score	Delirium Risk
0	2%
1	4%
2	14%
3	20%
4	64%

≥ 2 = *High risk for developing delirium*

NOTE: Patients delirious on admission will also screen positive on the AWOL

NuDESC
(Nursing Delirium Screening Scale)

All non-ICU patients are **screened for delirium Q shift** by their primary RN.

Scoring (Each behavior)
0 | No altered behavior throughout shift
1 | Mild alteration observed at any time during shift
2 | Pronounced alteration

BEHAVIORS

Disorientation	**Inappropriate behavior**	**Inappropriate communication**
Illusions/ Hallucinations	**Psychomotor retardation**	

Overall Score **≥ 2** = Positive Screen

CAM-ICU

All patients **screened for delirium Q shift** by their ICU RN

Scoring
POSITIVE if 1 and 2 and either 3 or 4 are present

1 Acute onset of change in mental status OR fluctuating mental status **AND** 2 Inattention **AND** 3 Disorganized thinking

OR

4 Altered level of consciousness (RASS other than 0)

Treatment

- **<u>Treat the underlying cause (MOVESSTUPID)</u>**

Altered Mental Status Mnemonic

Metabolic – hepatic encephalopathy, hyper/hypoglycemia, Wernicke's encephalopathy, B12 deficiency, pancreatitis, porphyria

Oxygen – hypoxia/anoxia, hypercarbia/acidosis

Vascular – stroke, hemorrhage, hypertensive emergency, MI

Electrolytes/**E**ndocrine – hypo/hypernatremia, hypo/hypercalcemia, hypo/hypermagnasemia, hyper/hypothyroidism, adrenal insufficiency

Structural – subdural hematoma, hydrocephalus

Seizure – non-convulsive or complex partial status, post-ictal confusion

Trauma/**T**umor – head trauma, brain tumor

Uremia

Psychiatric

Infectious – any infection (sepsis, meningitis, UTI, pneumonia)

Drugs – intoxication and withdrawal

Slide courtesy of Dr. Vanja Douglas

Treatment

- **<u>Treat the underlying cause (MOVESTUPID)</u>**
- Remove unnecessary medications

BAD Meds

- Benzos- do not use unless ETOH/benzo w/d or seizures
- Zolpidem, Carisoprolol,
- Baclofen, Tizanidine- avoid unless serious spasms
- Anti-nausea: Compazine, scolpolamine, meclizine
    - Preferred: Zofran (1st line), Haldol (2nd)
- Antihistamines: loratidine, benadaryl, hydroxyzine
- Tramadol
- Gabapentin
- Fentanyl

Treatment

- **Treat the underlying cause (MOVESTUPID)**
- Remove unnecessary medications
- Remove bladder catheters
- Treat urinary retention and constipation
- Avoid restraints
- Early mobilization
- Normalize sleep-wake cycles

ED Geriatric Agitation

Accept

Discuss patient case bedside with RN and Attending MD. Initiate medical workup as indicated. Consider pain, communication, toilet or stimulation issues as cause. Attempt non-chemical management prior to medications if possible.

- [x] Reassess pain now and after any intervention or change in condition
  STAT, Once, First occurrence today at 1116
- [x] Ensure glasses/hearing aids available and in place, if unavailable consider pocket talker
  STAT, Once, First occurrence today at 1116
- [x] Assess toileting needs, consider bladder scan
  STAT, Once, First occurrence today at 1116
- [x] Normalize environment, adjust lighting and noise
  STAT, Once, First occurrence today at 1116
- [x] If in room, dim lights and TV volume
  STAT, Once, First occurrence today at 1116
- [x] Encourage caregiver at bedside
  STAT, Continuous, starting today at 1116, Until Specified
- [ ] Activity apron
  STAT, Once, Starting 9/21/20
- [ ] Sitter at bedside
  STAT, Continuous, Starting 9/21/20 Until Specified
- [ ] ECG 12 Lead
  STAT, Once, Starting 9/21/20, If not already done, to check QT before giving repeat doses of Haldol or if initial dose exceeds 2mg
- [ ] haloperidol lactate (HALDOL) IM/IV injection
  0.5 mg, Once, Starting 9/21/20
- [ ] QUEtiapine (SEROquel) tablet
  12.5 mg, Oral, Once, Starting 9/21/20

Next Required

Accept

Code DICE[1]

Promoting Safety for Older Adults in the Emergency Department

Older Patient (65+) with concern for NPS* behaviors or self harm?

*Neuropsychiatric symptoms of dementia or delirium

1. RN to Overhead:

"Code Dice, Room ***, Blue/Gold"

2. Responders:

Bedside RN
Psych team-member,
ED Resident or Attending
AFED GEDI *(if present)*
AFED or ED Social Worker *(if present)*
Caregiver *(invite if present)*

Peri-Intervention

1. Multi-disciplinary huddle: to minimize personnel in patient room.
2. ED MD to Order: "Geriatric Agitation Orderset" and place GEDI consult order

Interventions

1. **Non-pharmaceutical:**
   - ❑ **The DICE Approach[1]:**
     - ■ **Describe** - RN, patient, caregiver (*if present)* describe behavioral issue
       - ❑ *Make sure to get the patient's perspective!*
     - ■ **Investigate** - Look for possible causes of behavior (***see table below***)
     - ■ **Create** - Collaborate to make a treatment plan
     - ■ **Evaluate** - Check in after the plan has been enacted to measure effect
2. **Pharmaceutical** *(if non-pharmaceutical interventions are not working)*
   - ❑ Mild alteration in behavior: Give 0.5mg haldol PO/IM, reassess q30 minutes, double dose PRN
   - ❑ Moderate alteration in behavior:: Give 2mg haldol PO/IM, reassess q30 minutes, double dose PRN
   - ❑ Severe alteration in behavior:: Give 4mg Haldol PO/IM, reassess q30 minutes, double dose PRN

Ψ ED Hold?

Is patient free to leave while waiting

Sitter?

Imminent risk of self harm in ED?

[1] Kales et al (2014)

In RARE cases WHEN A PATIENT POSES A THREAT TO SELF OR STAFF consider:

	Age < 70 yrs.	Age > 70 yrs.
PO option: Quetiapine	25 mg x1 Can repeat 1x in 2 hr	12.5 mg x1 Can repeat 1x in 2 hr
If unable to take PO: Haldol*	1mg IV/IM x1 Can repeat x1 in 1 hr	0.5 mg x1 Can repeat x1 in 1 hour

NOTE: There is no convincing evidence to support the use of medication for treatment of delirium. This is off-label use.

** This is contraindicated in the setting of lewy body dementia.*

- *Check 12 lead EKG, hold if QTc > 500*
- *Use benzodiazepines only if there is a concern for delirium due to EtOH, benzodiazepine, or barbiturate withdrawal*

Black box warning:

- *Elderly patients with dementia-related psychosis treated with antipsychotics are at an increased risk of death*

Summary

- SUPER common
- But can be hard to recognize
- Is morbid
- But Preventable
- BZDZ are BAD