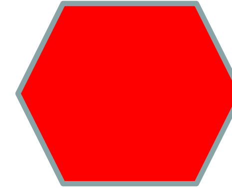
H.E.L.P Stop the Confusion about Confusion



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- *No financial disclosures*
- *I serve on the National Board for the Hospital Elder Life Program*

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How do you spell ______?

A. Delerium

B. Delirium

C. Dellerium

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How do you spell ______?

A. Delerium

B. Delirium

C. Dellerium

Learning Objectives

- Be able to list common risk factors for delirium.
- Know how to use the Confusion Assessment Method to diagnose delirium.
- Identify five things families can do to help their loved ones avoid delirium.

DSM IV Criteria for Delirium

- Disturbance in consciousness with reduced attention
- A change in cognition (memory, disorientation, language) or perceptual disturbance
- Acute onset and fluctuating course
- Evidence of underlying medical etiology

Frequency of Delirium

- Rates vary depending on study:
  - Prevalence on admission 14 – 24%
  - Incidence in hospital 6- 56%
  - Postop 15 – 53%
  - ICU 70 – 85% (if delirium >3 days, ~100% risk of neuropsychologic dysfunction)

If you are following a panel of patients in the hospital and one isn't delirious….

think again

Inouye SK, NEJM 2006;354:1157-65

Girard TD, Crit Care Med 2010;38:1513-1520

Delirium Can Be Hard To Recognize

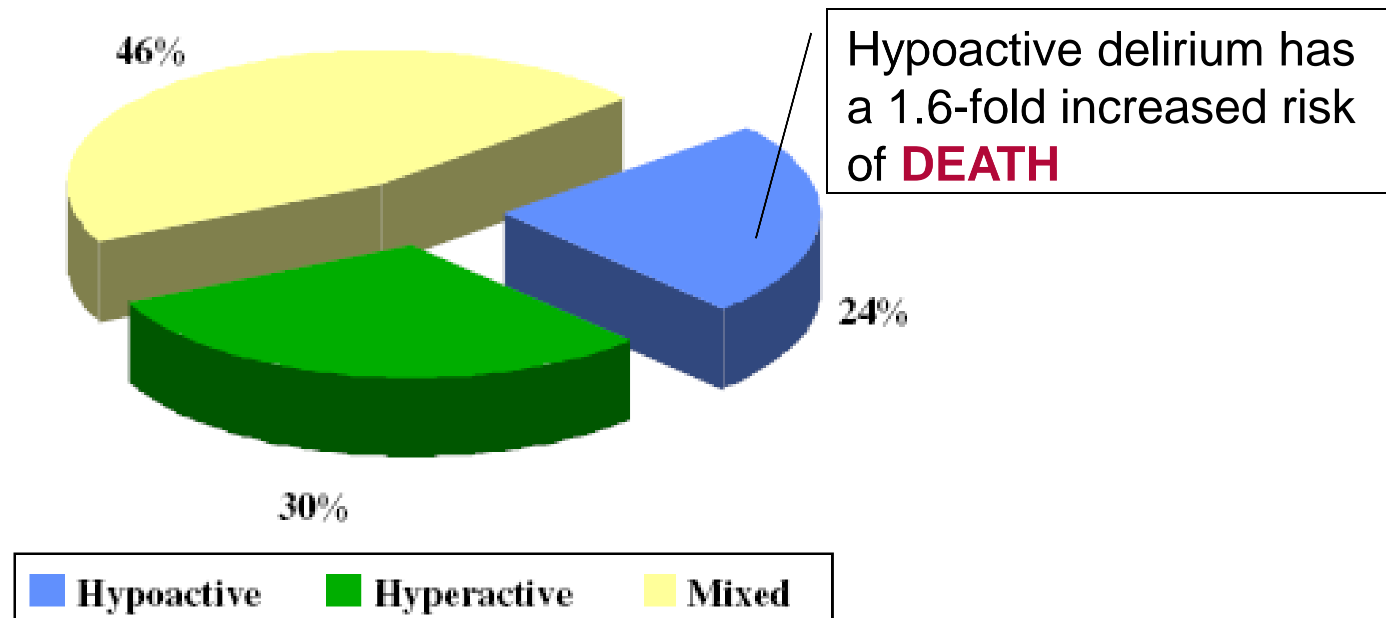

Fig. 6. Motoric subtype of delirium. (*Data from* Meagher DJ, O'Hanlon D, O'Mahony E, et al. Relationship between symptoms and motoric subtype of delirium. J Neuropsychiatry Clin Neurosci 2000;12(1):51–6.)

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How often do we recognize Delirium

- 1/3 to 2/3 of time physicians don't recognize
- Nurses recognize only 30% of time
- Risk factors for under-recognition: hypoactive delirium, advanced age, vision impairment, dementia

Inouye SK, Arch Intern Med. 2001;161:2467-2473

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If we don't call it "Delirium", what do we call it?

- Hospital Confusion
- Pleasantly Confused
- Reversible or Hospital Dementia
- ICU Psychosis
- Altered Mental Status
- Toxic Metabolic Encephalopathy
- Organic Brain Syndrome
- Toxic Psychosis
- Disorientation
- Cerebral Insufficiency
- Sleepy
- Difficult to arouse
- Pump Head
- Sundowning

Delirium is Deadly and Costly

- Delirium is strongly associated with bad outcomes, including:
  - 10-fold increase in death while in the hospital
  - 3- to 5- fold increase in complications, prolonged hospital stays and nursing home placement
- An estimated 6.9 billion dollars of Medicare hospital expenditures are attributable to delirium
- Medicare could save 1-2 billion dollars annually if hospital stays for each patient with delirium could be reduced by just one day

Marcantonio ER. Delirium. Geriatrics Review Syllabus. 7th ed. Pacala JT and Sullivan GM eds. New York, NY: American Geriatrics Society; 2010.
Leslie, et al, (2008) One year health costs associated with delirium in the elderly population. Arch Intern Med. 2008;168(1):27-32

Falls and Delirium

- Retrospective review of charts show delirium likely contributor in majority of falls (96 %)*
- Think Fall Prevention when Delirium is present:
  - Companions
  - Bed Alarm
  - Avoid tethers, keep items in reach (phone, call bell, etc)
  - Toileting regime

Lakatos, B *Psychosomatics* 50(3):218-226

Risk Factors for Delirium

- Cognitive Impairment (2.8 RR)*
- Comorbid/Underlying Illness (3.5 RR for severe illness)
- Functional Impairment
- Advance Age
- Dehydration (RR 2.0)
- Malnutrition
- Vision (RR 3.5) & Hearing Impairments

Inouye SK, et al. Ann Intern Med 1993;119:474-81.

Precipitating Factors for Delirium

- Drugs/Med use or w/d
- Environment
- F/E/N
- Infection
- Metabolic derangements
- Surgery

- Pain
- CNS insults
- Medical Issues (MI)
- Sleep Deprivation
- Immobilization
- Constipation

Anything

Delirium Mnemonic

Drugs, drugs, drugs!
Eyes, Ears
Low Oxygen States (MI, ARDS, CHF, COPD)
Infection
Retention (urine, stool), Restraints
Ictal
Underhydration, Undernutrition
Metabolic Derangements
Subdural, Sleep Deprivation

Confusion Assessment Method for Diagnosis of Delirium*

Acute Onset Cognitive Change

&

Fluctuating change in mental status

&

Inattention

&

Altered level of consciousness
or Disorganized thinking

* Innouye Ann Intern Med 1990;Dec 15, 9410-8

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Acute Onset

- Must be a detective…especially in the setting of dementia.

- Talk to family, staff from facility to establish a baseline. Don't assume patients are at their baseline.

Fluctuating Course

- What you see may not be what someone else sees
- Review notes from and listen to other care providers (Nursing, PT/OT, etc.)
- Talk to family members and the patient

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Confusion Assessment Method for Diagnosis of Delirium*

Acute Onset Cognitive Change

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* Innouye Ann Intern Med 1990;Dec 15, 9410-8

Inattention

- Digit Span – normal 5 forward, 3 backward
- Days of week or months of the year backward
- Spell "WORLD" backwards
- Count backward from 20 to 1

Confusion Assessment Method for Diagnosis of Delirium*

Acute Onset Cognitive Change

&

Fluctuating change in mental status

&

Inattention

&

Altered level of consciousness or Disorganized thinking

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Altered Level of Consciousness

- Lethargy
  - Beware of sleepy, briefly arousable
  - "Pleasantly confused"
  - Most common type of delirium in older adults
- Agitation
  - You will get called by nurses for this one…pulling at lines, striking out, verbal outbursts, etc.

Disorganized Thinking

- You will recognize this in conversation
- Ways to test (from the CAM ICU):
  - Will a stone float on water?
  - Does 1 pound weigh more than 2 pounds?
  - Are there fish in the sea?

Hartford Institute for Geriatric Nursing Try This Series Video

http://consultgerirn.org/resources/media/?vid_id=4361983#player_container

Case 84 yo Hispanic Man with a Hip Fracture

@ 7 am

- Nurse evaluates:
  - Pleasant, conversant
  - Able to tell birthdate
  - Knows what is to happen
  - Oriented to date, location
  - Spells “WORLD” backward without difficulty

@ 10 am

- Nurse evaluates:
  - Appears different, slightly fidgety. Easily distracted in conversation…doesn’t always answer the question
  - Can’t tell DOB
  - Thinks @ home, no recall why in hospital
  - No spell or do backward counting

Confusion Assessment Method for Diagnosis of Delirium*

Acute Onset & Fluctuating change in mental status

+

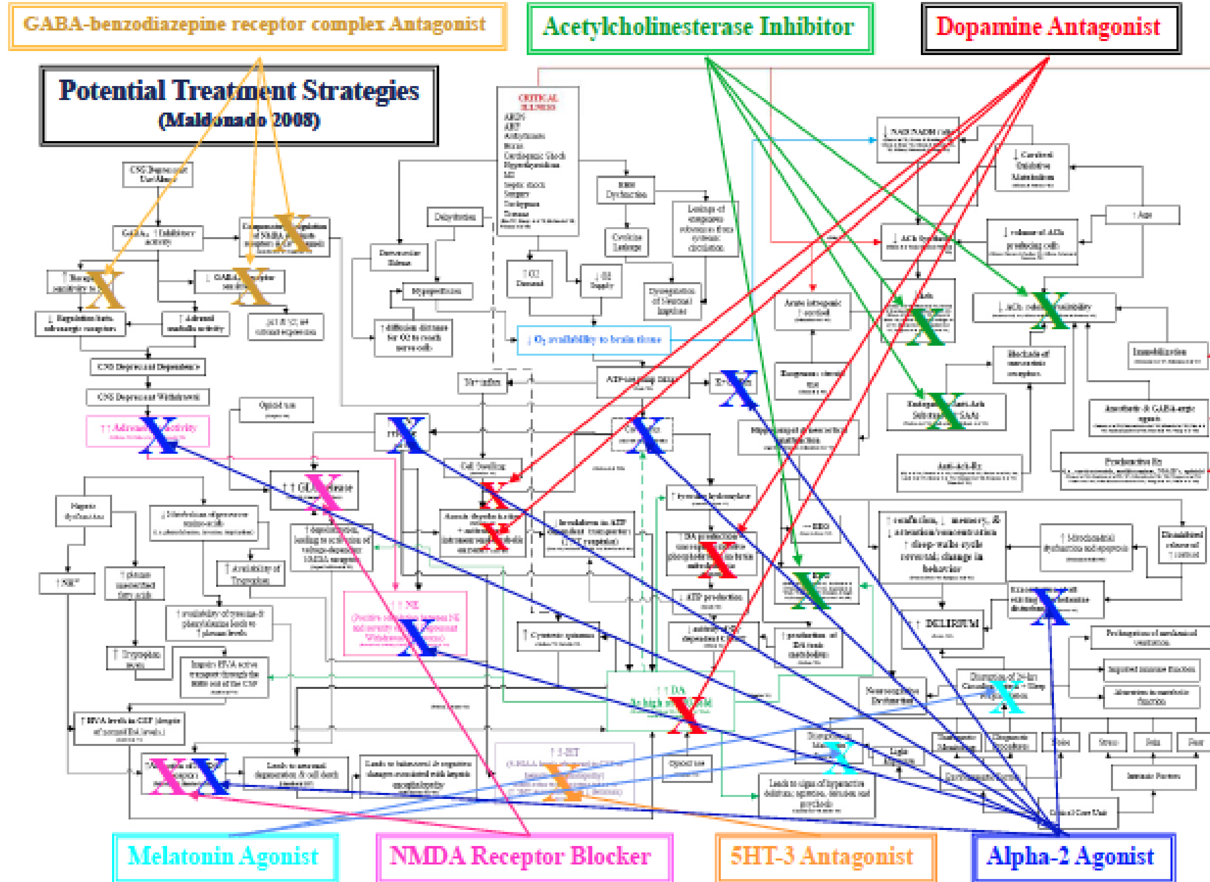
Inattention

+

Altered level of consciousness or Disorganized thinking

Use scenario to identify risk factors and try using the CAM with a partner (each trial a scenario, then discuss)

Multifactorial etiology of Delirium



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Delirium Prevention

Innouye et al, NEJM 1999; 340:669-676

Case Presentation

- 78 yo man admitted from home, lives alone
- CC: Short of Breath
- PMH: CHF, h/o a fall, osteoarthritis of the knee
- In ED: Still SOB, O2 requirments despite diuretics
- Admitted for diuretics, CHF teaching
- Anticipated LOS 48 hours
- Transferred to medical floor at 10pm - foley in place due to difficulty getting to bathroom

Case...

- Foley kept in place
- Benadryl ordered prn and given for poor sleep at 11pm
- 2 am confusion develops
  - foley pulled out
  - oxygen removed
- 3 am hypoxic & more confused
- IV pulled out, patient falls
- 5 am patient more restless, hasn't voided and bladder scan shows 700 cc urine
- foley placed with large amounts of bloody urine & clots

Case ... (con't)

- Urology consult - urinary retention & bleeding/clots, foley needed for irrigation
- Delirium continues and patient must be restrained to keep foley in place, oxygen on.
- UTI develops hospital day 3
- Hospital day 8, patient finally clearer - family states patient still not himself.
- Physically decompensated d/c to rehab for 2 week stay before finally to home.

Geriatric Issues

– Foley/tethers
– Sleep impairment
– Fall risk/gait instability
– Multiple medications

DELIRIUM

Consequences of Delirium

- Prolonged hospitalization
- Functional decline
- Increased risk for institutionalization
- Cognitive impairment may persist for months or never resolve completely*
- Increased mortality
- FALLS

* Reference for cognitive impairment persist for 5 years delirium superimposed on cog imprmt and post CABG paper

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Delirium Prevention

Think HELP

(Hospital Elder Life Program)

For More Information:
www.hospitalelderlife.org

Goals of HELP

- Provision of safe, patient centered care during hospitalization through the utilization of an interdisciplinary team that includes volunteers, with a goal to:
  - Maintain physical and cognitive functioning despite hospitalization
  - Maximize independence at discharge
  - Prevent unplanned readmissions
  - Assist with transition to home

How does HELP work?

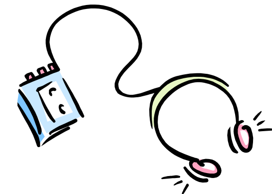
- Can have hospital wide or unit based focus, but geriatric unit is not required
- Skilled staff and volunteers carry out interventions (as opposed to consulting and only making recommendations)
- Interventions are directed to appropriate patients, targeting known risk factors for cognitive and functional decline
- Outcomes monitored to assure quality

How does HELP work (con't)?

- HELP staff includes:
  - Geriatrician (ideally)
  - Elder Life Nurse Specialist
  - Elder Life Specialist
  - Volunteers
- Interdisciplinary team may include PT/OT, Pharmacy, Chaplain, Nutrition, Staff Nurses, etc.…and, of course, the Patient

Risk factors identified for enrollment (and targeted with volunteer interventions)

- Cognitive dysfunction
- Mobility/Gait Issues
- Dehydration
- Sensory Impairment
- Sleep Deprivation
- Polypharmacy/Hi risk medication use



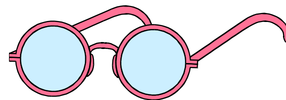
What the patients see

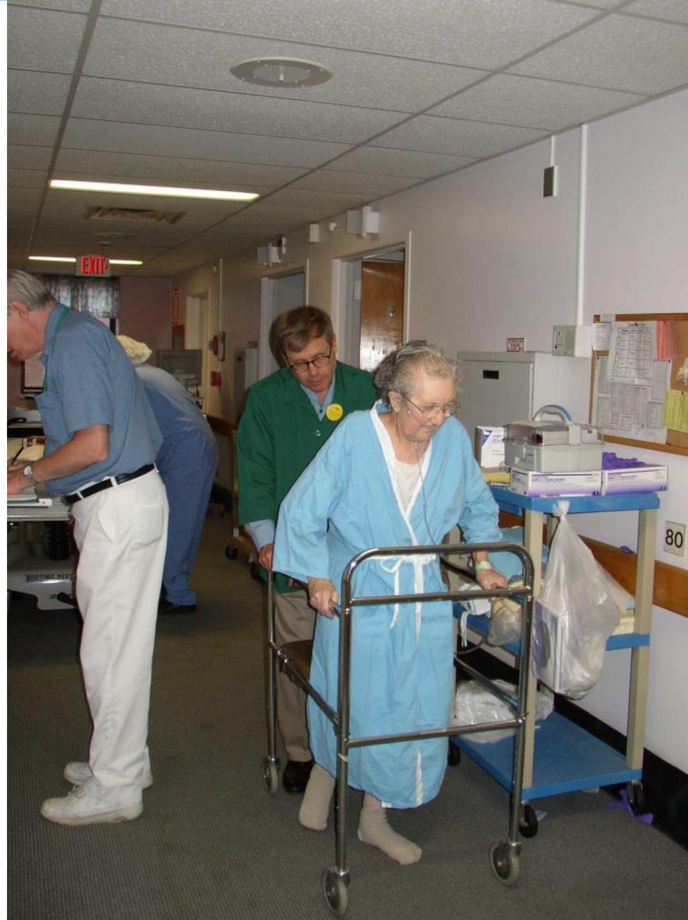
- Assessment with a focus on function, life outside the hospital
- Volunteers 2-3 times/day
  - All patients have friendly visit (orientation, therapeutic activities) and mobility
  - Other aspects target risk factors.

Hood
2% Reduced Fat Milk

Targeted interventions by volunteers

- Maintain cognition:
  - orientation 1 - 3 times/day
  - therapeutic activities 2-3 times/day
- Early mobilization
- Maintain or improve nutrition and hydration
- Relaxation/Sleep Protocol
- Minimize sensory impairment





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Our case: Attention to delirium prevention

- Think about the geriatric issues:
  - Foley/tethers
  - Sleep impairment
  - Fall risk/gait instability
  - Multiple medications
- A better outcome...

Case revisited

- Foley kept in to facilitate sleep due to diuretic given at 9 pm
- Patient to bed, head slightly elevated for breathing, room quiet. No sleeping pill.
- foley out in morning
- Urinal available for frequent urination due to diuretic
- PT evaluation
- *Volunteers : Orient, engage, mobilize*
- Ambulation encouraged
- Oxygen weaned to 1 liter
- CHF education about diet, daily weights
- IV diuretic time changed from 9 pm to 5 pm to interfere less with sleep
- HD #2 - oxygen weaned to off in morning, po diuretic started & d/c

Delirium prevention for all

- Encourage mobility, hydration
- Minimize/eliminate tethers that inhibit mobility (IV’s, foley catheter)
- Hearing aids/Listenaiders and glasses…encourage patients to bring “valuables” from home
- Orientation, Minimize daytime sleeping

Delirium prevention for all (con’t)

- Avoid use of sleeping medications: use sleep enhancement guidelines
- Clean up medication orders: don’t give lots of prns
- Don’t order vitals and meds during usual sleeping hours.

Drugs and delirium

- H2 Blockers
- Opioids
- Quinolones, TB/Antivirals
- Antihistamines…benadryl dose correlation
- Corticosteroids
- Cardiac meds –clonidine, atenolol
- Sedative/Hypnotics
- Think anticholinergic additive effects

Meds with Anticholinergic Effects
(an incomplete list)

- Alprazolam
- Amantadine
- Amitryptyline
- Ampicilliin
- Atropine
- Azathioprine
- Captopril
- Cefoxitin
- Chlorazepate
- Chlordiazepoxide
- Chlorpromazine
- Chlorthalidone
- Cimetidine
- Clindamycin
- Codeine
- Colchicine
- Corticosterone
- Cyclobenzaprine
- Cyclosporin
- Desipramine
- Dexamethasone
- Diazepam
- Digoxin
- Diltiazem
- Diphenhydramine
- Dipyridamole
- Dyazide
- Fluazepam
- Furosemide
- Gentamycin
- Hydralazine
- Hydrochlorathiazide
- Hydrocortisone
- Hydroxyzine
- Imipramine
- Isosorbide mononitrate
- Keflin
- Meclizine
- Methyldopa
- Mirtazapine
- Nifedipine
- Oxazepam
- Oxybutynin chloride
- Oxycodone
- Phenobarbitol
- Piperacillin
- Prednisolone
- Ranitidine
- Theophylline
- Thioridazine
- Tobramycin
- Triamterene
- Valproic Acid
- Vancomycin
- Warfarin

Hall et all, *Clinical Geriatrics*, Nov 2009:22-28

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Role of Family & Friends

- Friends, family and visitors should be vigilant for changes
- They should be told to let care providers know immediately if they observe a change in behavior
- They should know that delirium is dangerous and a medical emergency and needs attention just like any other illness

Delirium Evaluation

- Look (?) for the causes and treat those:
  - Polypharmacy/Withdrawal/anticholingergic burden
  - Opioid toxicity
  - Pain
  - Urinary retention
  - Constipation
  - Infection

ANYTHING

Delirium Treatment

- **<u>Treat reversible causes</u>**
- Identify medication contributors (change in location, family may have best knowledge)
- Clarify goals with patient (often not possible in moment, best to happen ahead of time) and family
- Medications to target symptoms

Preventing and Treating Delirium is a Team Effort!!!

What is your role?

Communication and respect are key

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Patient Assessment (Significant Dementia)

- Agitation may be a form of communication (pain, difficulty breathing, constipation, etc.) or may be delirium
- Regardless, identification of etiology is important
- May need to look for other evidence of systemic illness
- Engaging individuals to minimize anxiety, keep cognitively stimulated can help minimize agitation in dementia

Behavioral Management of Dementia: Simple Pleasures

- Shown to decrease agitation in dementia patients in the nursing home.*
- Provide alternate ways of interacting with the environment using touch:
  - Knit Ball – targets generalized anxiety
  - Wave machines - to target repetitive hand movements
  - Stuffed Butterfly/Fish/animals – to targets verbal repetitiveness
  - Activity Aprons and Sensory Vests - to target repetitive motor patterns and pulling at medical devices. Polar fleece warm water bottle/rice bag - to target screaming
  - Fleece Muff - target general agitation and anxiety
  - Look inside Tackle Boxes & purses with safe treasures - to target hand restlessness or wandering

*Buettner L, Amer J of Alz Dis 1999; Jan/Feb:41-52

Terminal Delirium

Prevalence/Prognosis of Delirium

- 20-30% of people with cancer, COPD, End-stage liver disease
- 44% with terminal cancer
- 83% of patients in final days (~46% with agitation)

- 14-24% of patients on admission to hospital to 56% during hospitalization
- 1 year mort with hospitalized delirium up to 40%

Most Prevalent and Distressing Symptoms

- Dypnea, Fatigue, Constipation – heart failure (leading cause of death)
- Pain, Fatigue, Cognitive Dysfunction – cancer (second leading cause of death)

Family Feelings/Perceptions related to Delirium

- Ambivalence
- Distress at expressions
- Agitation
- Fear to be with /what to expect
- Factors associated with dissatisfaction:
  - Agitation
  - Unavailability of provider to discuss
  - Male

Anticipate Delirium: Establish goals of care before it occurs

Questions?