

# Delirium and Dementia

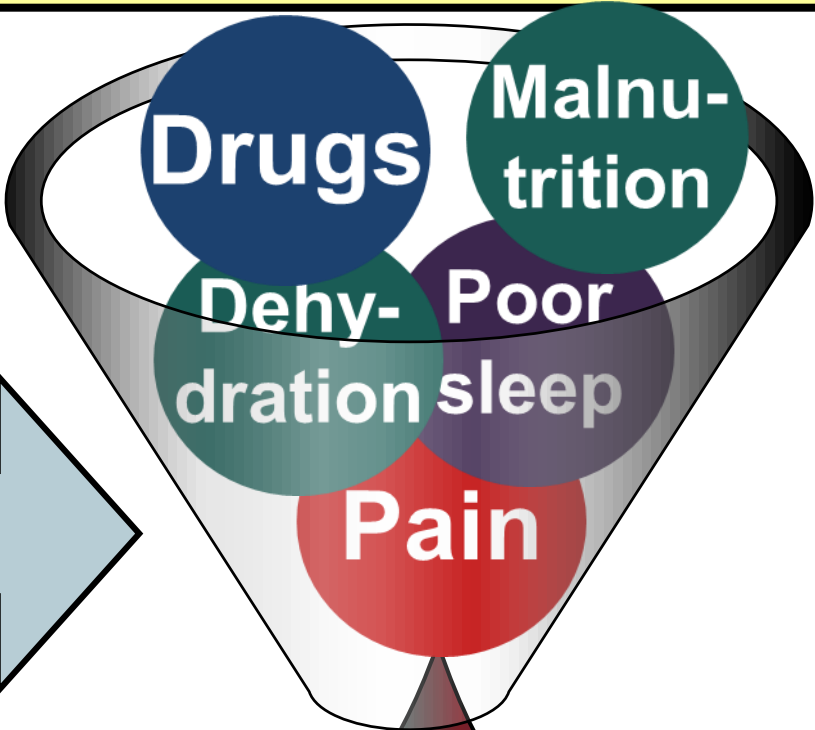
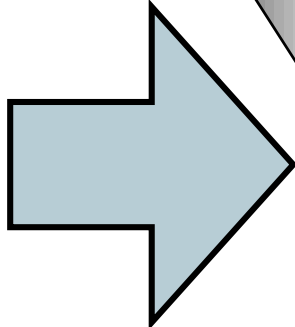
Elder Friendly Care in Acute Care

Seniors Health Strategic Clinical Network

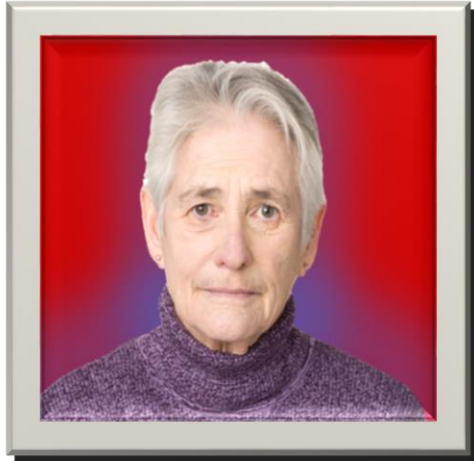
# Acute Care Stress Blender



**At-Risk  
Older Adult**



**DELIRIUM**



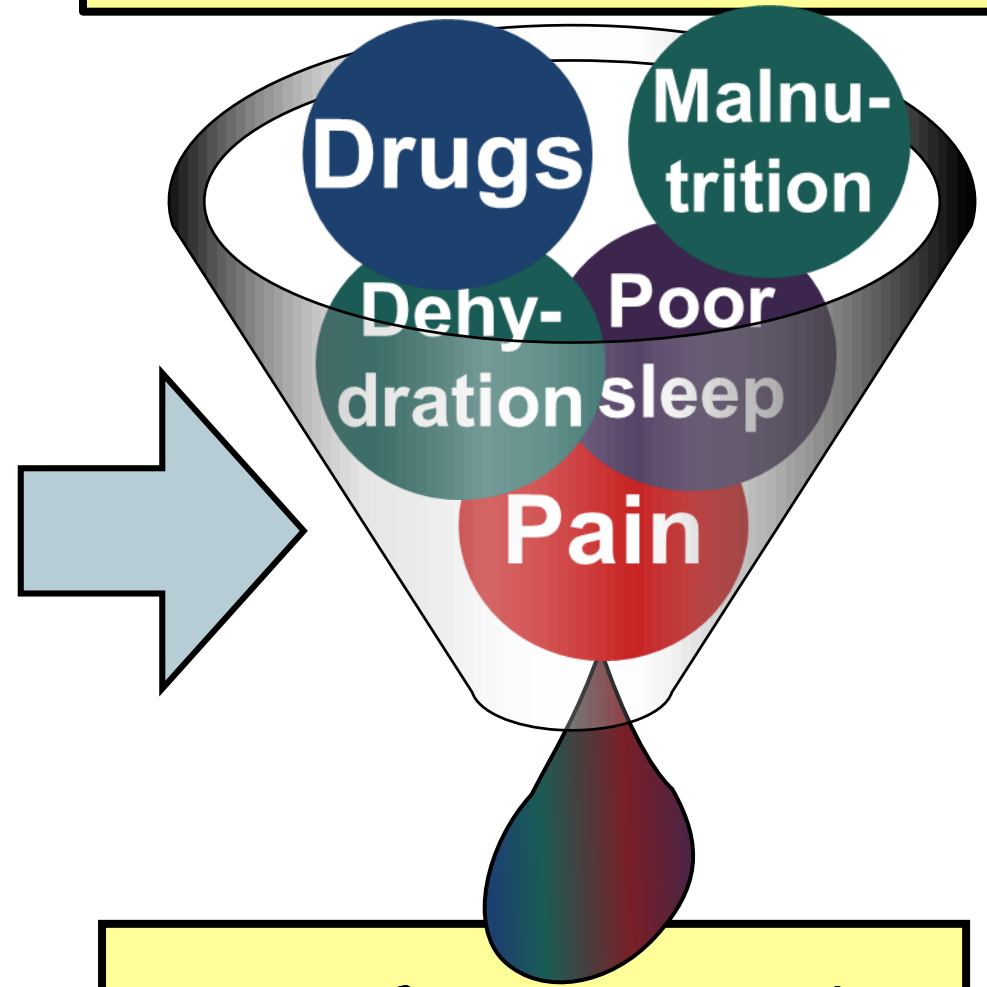
**TREAT CAUSE  
immediately &  
aggressively.**

Increased impairment  
*Return to baseline  
is questionable*



**At-Risk  
Older Adult**

***Acute Care Stress Blender***



**DELIRIUM**

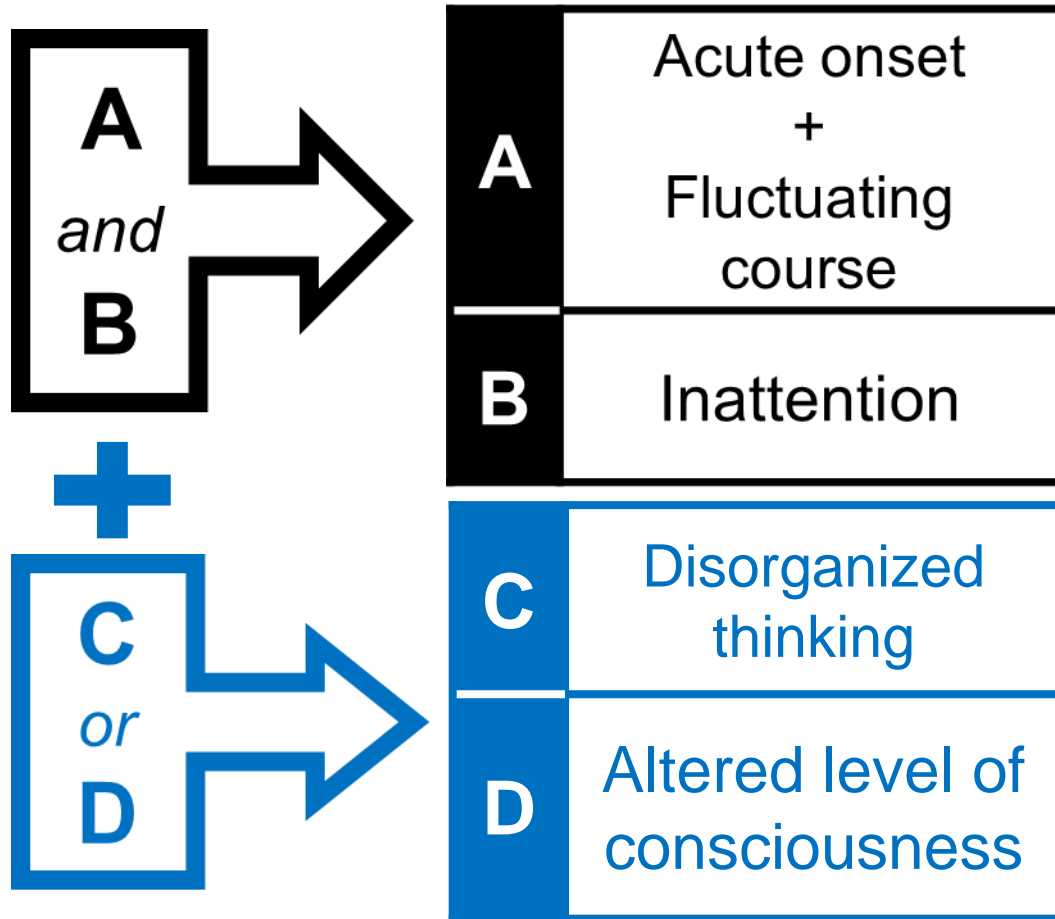
**C** Confusion  
**A** Assessment  
**M** Method

***Early detection***  
**..HOW?**

# CAM - Confusion Assessment Method



# Confusion Assessment Method (CAM)



Delirium is often discounted as the person's "normal"

***To detect delirium, we need to know their baseline***

# “Stop & Watch”

- Early delirium detection
- Supports communication
- Reduces acute care admissions

*Complete Stop and Watch Early Warning Tool: available from Med-Pass.com*

*© 2011 Florida Atlantic University*

## *Stop and Watch* Early Warning Tool

If you have identified a change while caring for or observing a resident, please **circle** the change and notify a nurse. Either give the nurse a copy of this tool or review it with her/him as soon as you can.

**S** Seems different than usual  
**T** Talks or communicates less  
**O** Overall needs more help  
**P** Pain – new or worsening; Participated less in activities  
**a** Ate less  
**n** No bowel movement in 3 days; or diarrhea  
**d** Drank less  
**W** Weight change  
**A** Agitated or nervous more than usual  
**T** Tired, weak, confused, or drowsy  
**C** Change in skin color or condition  
**H** Help with walking, transferring, toileting more than usual

# Delirium Information for Patients and Families

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[Health Information & Tools](#) > [Health A-Z](#) > [Delirium: Information for Patients and Families](#)

[What is delirium?](#)[Causes](#)[Delirium and Dementia](#)[Risks for Delirium](#)[Recognizing Delirium](#)[Prevention](#)[Comfort Rounds](#)[Treatment](#)[How can I help?](#)[After Delirium](#)[Print Booklet & Resources](#)

## Senior's Health

## What is delirium?

Delirium is a sudden, confused state of mind that may come and go over the day. People with delirium may have changes in the way they think. Their personality and behaviour may change quite a lot. They may have trouble paying attention to what's going on around them or doing the things they normally can do.

Delirium is a warning sign that the person needs help right away. Call your family doctor, nurse, healthcare provider, or Health Link at 811.

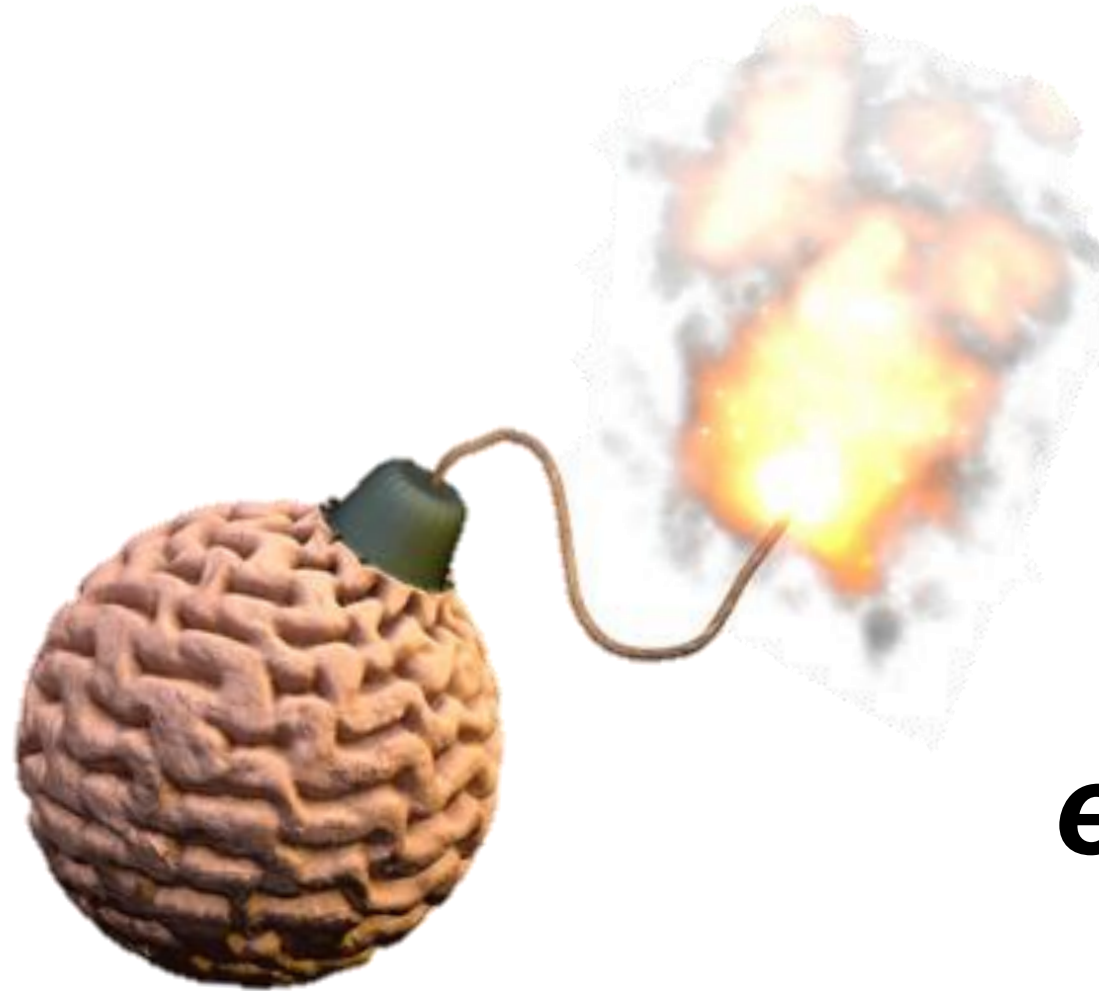
## Related to Delirium

- > [Confusion, Memory Loss, and Altered Alertness](#)
- > [Temporary Confusion or Decreased Alertness](#)

[CAUSES >](#)

MyHealth.Alberta.ca

# Delirium Risk Assessment



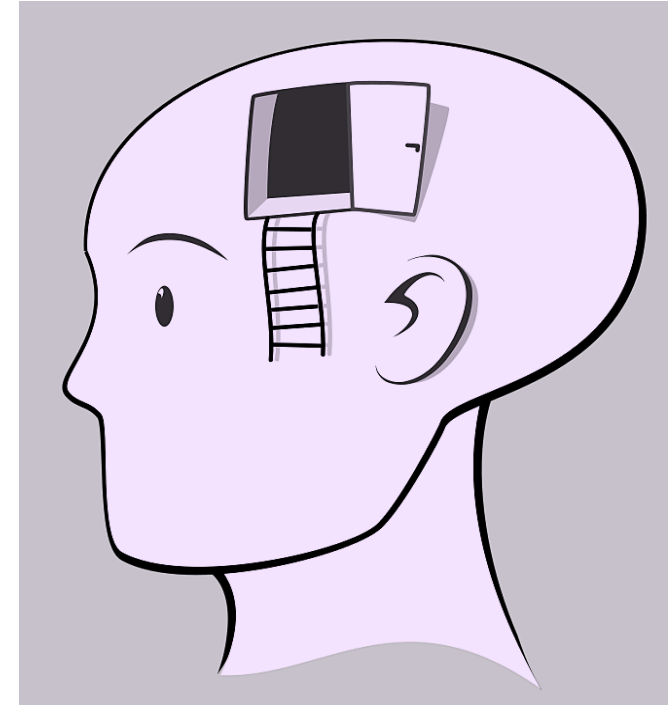
***Prevent  
the  
explosion!***



# Delirium and Brain Neurotransmitters

## Blocking of neurotransmitters can effect:

- Learning and memory
- REM sleep cycle regulation
- Neuroendocrine function
- Smooth muscle (intestines, bladder, arteries)
- Heart rate and contraction strength
- Movement (muscle contraction)
- Sweat glands



# Acetylcholine and Delirium



Acetylcholine “powers up” the brain

Acetylcholine levels are lower in older adults (90% lower in Alzheimer's)

Stress increases demand for acetylcholine

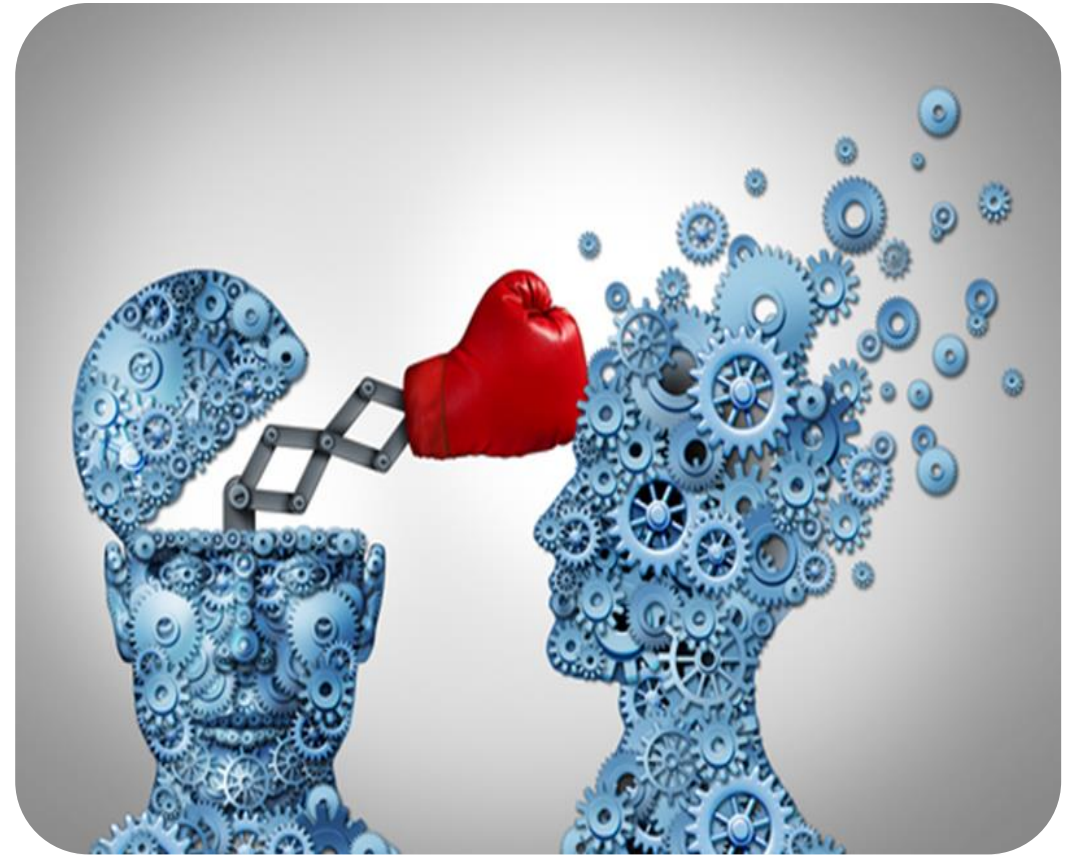
Many medications block acetylcholine

# Anticholinergic Cognitive Burden (ACB)

Anticholinergic = medication that blocks acetylcholine

Many commonly prescribed medications have anticholinergic properties (some strong, some weaker)

Taking multiple medications with anticholinergic properties adds up to a higher cognitive burden





MORE IS  
**NOT**  
ALWAYS  
**BETTER**

## Medications and Delirium

5 or more medications =  
higher risk of delirium  
and falls

The same is true for medical tests and treatments. Talk with your health care provider about what you need, and what you don't. To learn more, visit [www.choosngwisely.ca](http://www.choosngwisely.ca)

Choosing  
Wisely  
Canada



# Prescribing Cascade (example)

**High Blood Pressure**

Treated with **Ca<sup>2+</sup> channel blocker**

**Edema** caused by peripheral vasodilation

**Heart failure** treated with **2 diuretics**

**Incontinence** caused by increased urinary output

**Overactive Bladder** treated with **antimuscarinic** (*very anticholinergic*)

**Fracture** caused by a fall

**Agitation** and **pain** treated with **haloperidol, morphine, dimenhydrinate**

**Delirium**

MORE IS  
**NOT**  
ALWAYS  
**BETTER**



# Medication Reconciliation

What kinds of questions do we need to ask about medications?

Whose job is it to evaluate medications?

How/when does your team assess medications e.g. with higher risk than benefit, or prescribing cascades?

How are patients and families involved in conversations around medications?



# Pharmacologic Restraint Management Worksheet

Affix patient label within this box

Purpose: Review of  Antipsychotic  Pharmacologic restraint  Responsive behaviour  
Medication (antipsychotic/pharmacologic restraint) and reason prescribed (see reverse)

Appropriate  
*If reason unknown, gradual dose reduction may help determine if medication is of benefit*  
 Potentially inappropriate  
 Reason unknown  
 Behaviour has worsened/not improved  
 Risks/adverse effects outweigh benefits  
 No responsive behaviours observed  
 Other  
 Psychosis resolved  
 Behaviour has stabilized with person-centred approach

Possible reasons for responsive behaviour(s) (refer to behaviour mapping and/or health record)  
 Unmet physical need (e.g. constipation, pain, elimination, fatigue, hunger, thirst, too hot or cold)  
 Psychosocial (e.g. stress threshold, loneliness, depression, post-traumatic events)  
 Environmental (e.g. over/under stimulation, overcrowding, noise, inconsistent routine, provocation by others)  
 Staff (e.g. approach, gender, appearance, age, tone of voice)  
 Medical conditions (e.g. delirium, dehydration, malnutrition, hypoglycemia, medication-related nutrient and fluid deficiencies)  
 Medications (see reverse) # pills or capsules/day diuretic change in medication  
 Other

Supportive approaches, strategies or interventions (describe)  
Possible side effects of antipsychotics (may improve with dose reduction/discontinuation)  
 No side effects noted  Side effects noted (see reverse)  improving  worsening  
Comments

Interdisciplinary team recommendations  
Participants in review (Name and role)

Reduc...  
 Incre...  
 Disc...  
 Con...  
 Con...  
 Tri...  
 Me...  
Date

Follow up assigned  
 care plan updates  
 staff - all shifts/departments  
Physician or Prescriber name  
 behaviour monitoring  
 family/alternate decision - maker  
Signature  
Date (yyyy-Mon-dd)



## Supporting Information

Antipsychotics are appropriate for  
 Confirmed mental health diagnosis (e.g. bipolar, schizophrenia, delusional disorder, major depression)  
 Psychiatrist involvement recommended for dosage adjustments.  
 Distressing hallucinations and delusions  
 Behaviour that places self/others at risk of injury  
Short term use may be appropriate while person-centred approaches are explored.

Antipsychotics are not appropriate for or may worsen these behaviours  
 Paces, appears upset/fearful, restless, wanders  
 Sleep disturbance, sun downing  
 Shouting, screaming, calling out, cursing  
 Repetitive questions  
 Social or sexual disinhibition e.g. undressing, spitting, masturbation  
 Aggressive behaviour during personal care (consider distraction, approach/re-approach, offering choices)  
 Protective of territory, hoarding

Medications that may contribute to cognitive impairment, sedation and/or responsive behaviours

Highly anticholinergic\* or sedating  
 Anticonvulsants (e.g. carbamazepine\*, gabapentin)  
 Antidepressants\* (e.g. tricyclics, paroxetine)  
 Antiemetics/Antivertigo\* (e.g. dimenhydrinate)  
 Antihistamines/antipruritics\* (e.g. diphenhydramine, hydroxyzine)  
 Medications for bladder control\* (e.g. oxybutynin)  
 Antiparkinsons medications\* (e.g. levodopa)  
 Antipsychotics\* (e.g. quetiapine, risperidone, haloperidol, olanzapine, aripiprazole)  
 Antispasmodics\* (e.g. hyoscine)  
 Muscle relaxants\* (e.g. cyclobenzaprine)  
 Sedatives/Hypnotics (e.g. zopiclone, benzodiazepines\*)  
 Opioids\*

Possible anticholinergic\* and/or may contribute to behaviours  
 Antibiotics\* (e.g. ampicillin, gentamicin)  
 Cholinesterase inhibitors (e.g. donepezil)  
 Cardiovascular agents\* and diuretics (e.g. digoxin, diltiazem, furosemide, metoprolol)  
 Lithium\*  Steroids\*  NSAIDS  
 Warfarin\*  Other  
 Statins (e.g. muscle & nerve pain)  
# anticholinergic medications\*  
# pill burden (# pills/capsules per day)

Consider additive effects of multiple medications with high and/or low anticholinergic burden. Consider possible side effects of all prescribed medications  
The following tools may be helpful when considering potentially inappropriate medications in the elderly:  
 Screening Tool of Older Person's Prescriptions (STOPP) version 2  
 2015 American Geriatric Society Beers Criteria  
 medstopper.com  
 RxFiles: Anticholinergics: Reference List of Drugs with Anticholinergic Effects, July 2015, or Dementia Overview

Possible Antipsychotic Side Effects: See drug monographs for medication-specific side effects.  
Non-Movement Side Effects  
 Confusion, disorientation  
 Constipation, difficulty urinating  
 Decreased social contact  
 Change in weight  
 Movement-type Side Effects  
 New or increased agitation  
 Loss of appetite or dehydration  
 Blurred vision  
 Insomnia  
 Sedation or lethargy

# Pharmacologic Restraint Management Worksheet (Form 19676)



# Dehydration and Delirium

## Dehydration:

- Lowers blood pressure
- Increases risk of falls
- Damages brain cells
- Increases risk of urinary tract infections and constipation



## Risks for Dehydration with Aging & Dementia

- Decreased thirst, confusion, impaired swallow



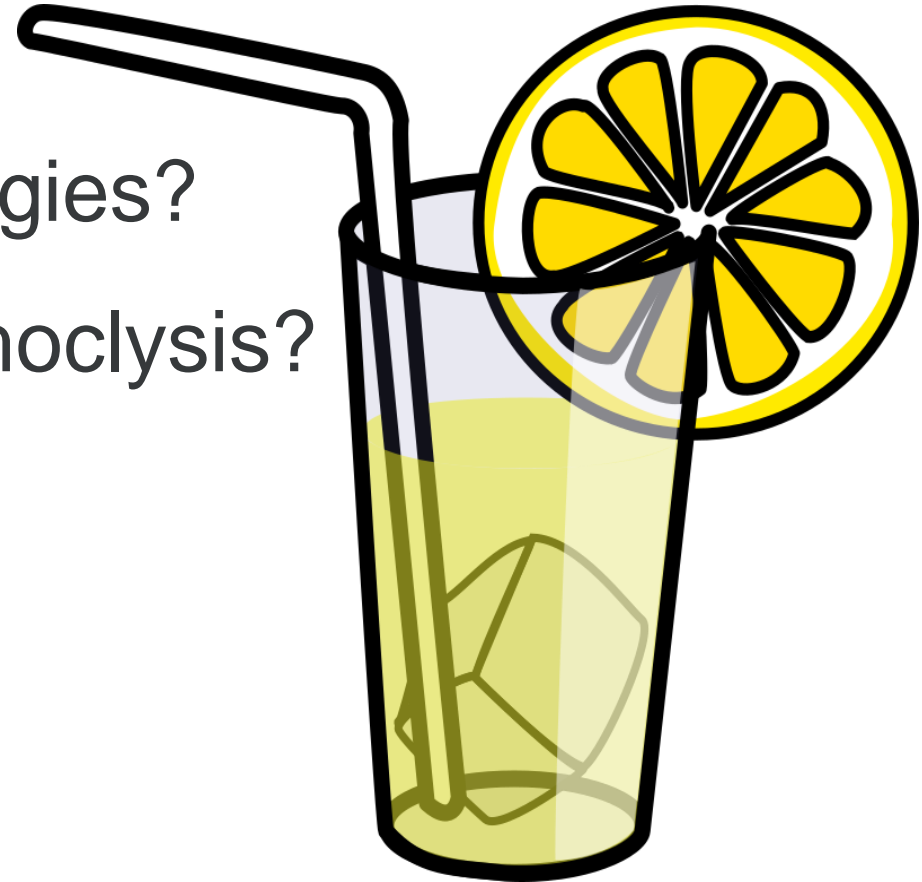
# Dehydration, **Drugs** and Delirium

- **Diuretics**
- **Sedatives and antipsychotics**
- **Drug induced diarrhea** e.g. laxatives, acid-blocking drugs, metformin, motility drugs, antibiotics, digoxin (at toxic levels)
- **Drugs for bone density** (Esophageal swelling and ulceration from incomplete swallowing)



# Hydration Strategies

- What are some of your hydration strategies?
- What is your experience with hypodermoclysis?
- How do you measure hydration?
- Thickened fluids and dehydration



# Nutrition and Delirium

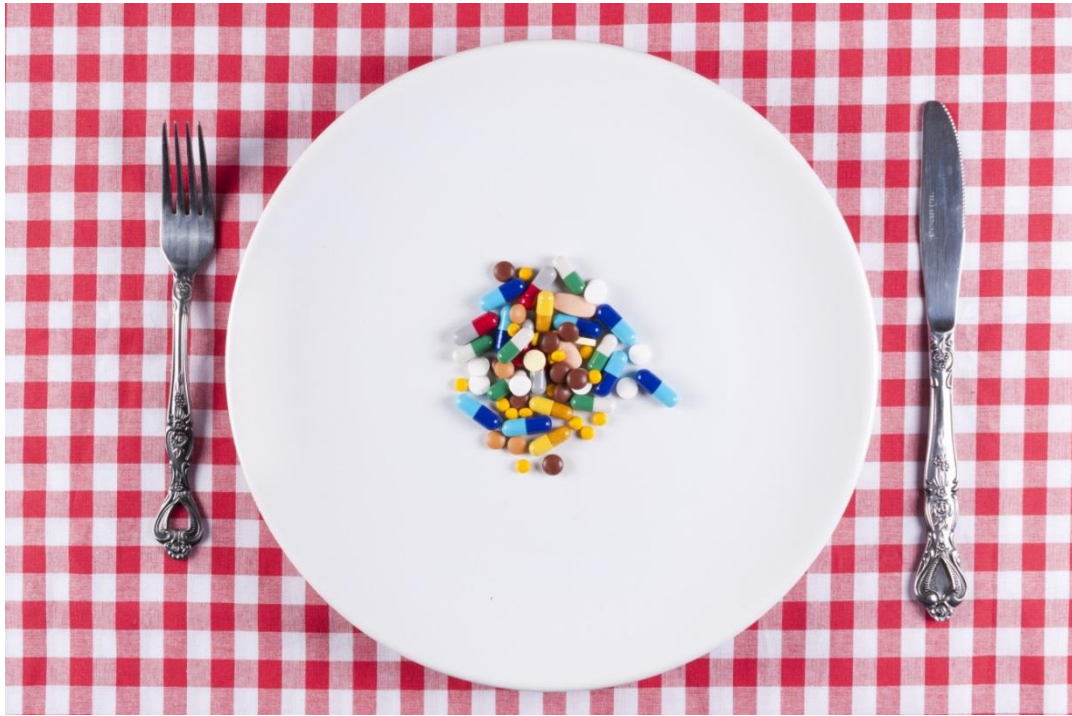
**Healthy brain function requires many essential nutrients**

Acetylcholine production requires choline, found in eggs, meat, fish, cruciferous vegetables (e.g. broccoli), milk

Delirium risk increases with malnutrition:  
e.g. lower levels of Vitamin B 12,  
iron, proteins



# Malnutrition, **Drugs** and Delirium



**Pill Burden:** nausea, loss of appetite, feel full, agitation

**Anticholinergic burden:** sedation, decreased gastrointestinal motility

**Olfactory disturbances** with many common medications

**Impaired nutrient absorption**



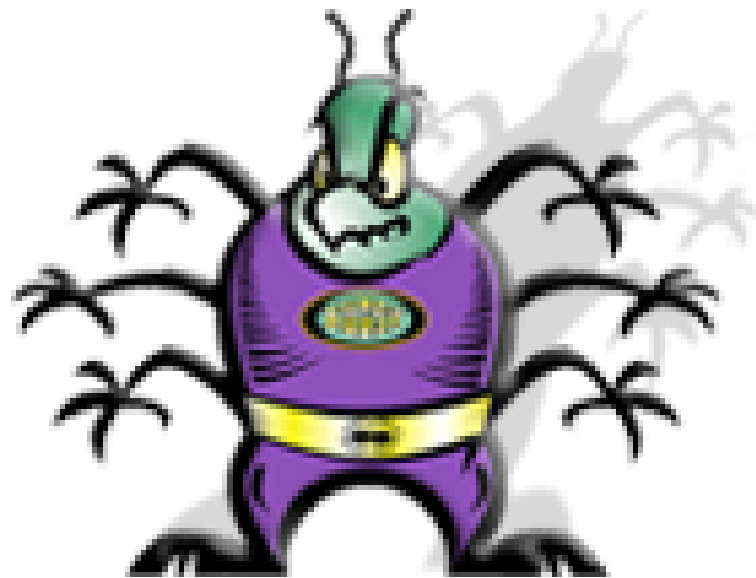
For information and resources see [www.dobugsneeddrugs.org](http://www.dobugsneeddrugs.org)

Urinary tract infections are frequently misdiagnosed in the elderly

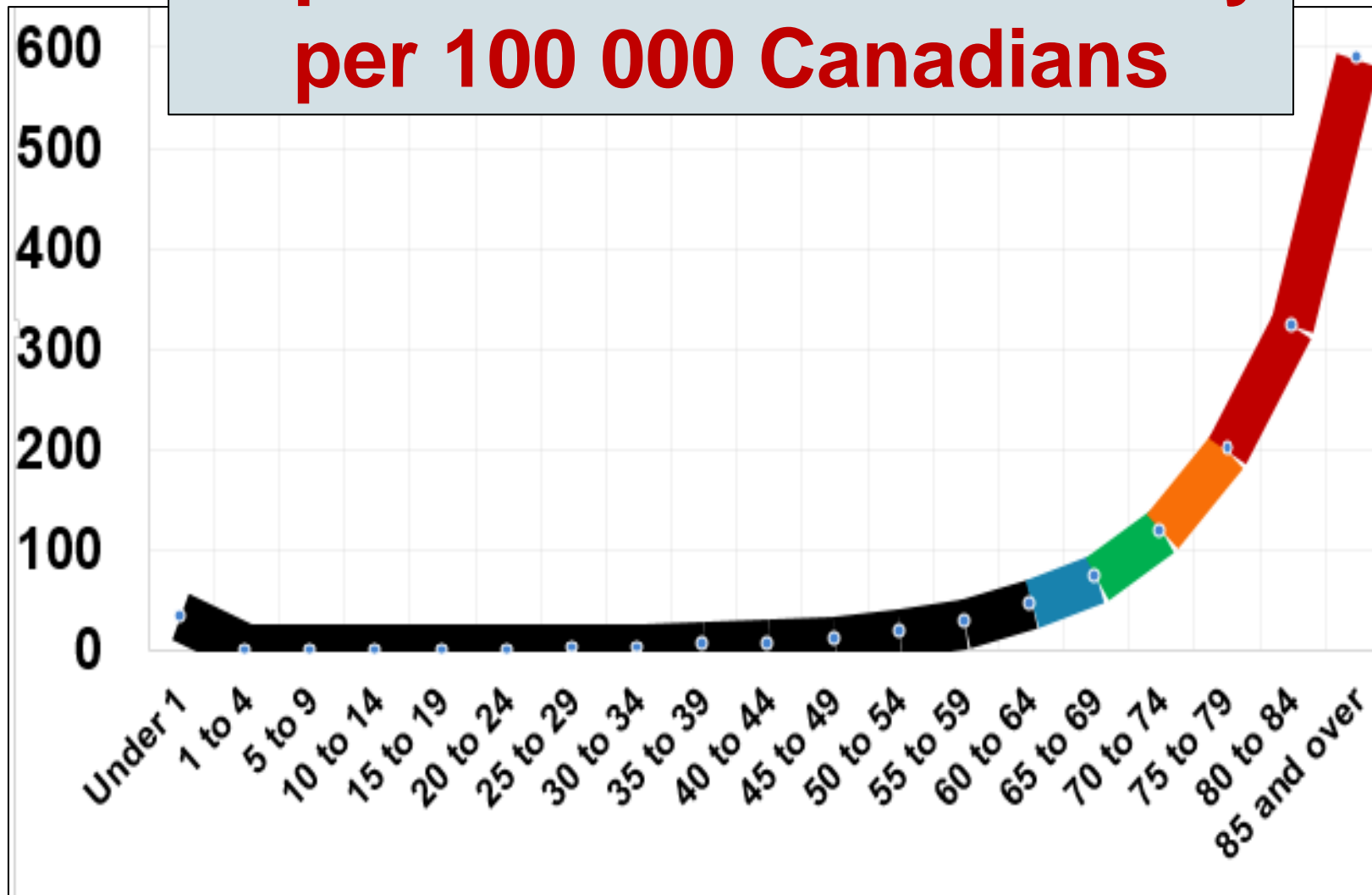
Treatment with antibiotics has many unwanted side-effects

Misdiagnosis means underlying cause of delirium is missed

**PUSH FLUIDS for 24 hours**



# Sepsis-associated mortality per 100 000 Canadians



Older adult age ranges

- 65 to 69
- 70 to 74
- 75 to 79
- 80 to 84
- 85 and over

**A. Known or Suspected Infection**

- Pneumonia, emphysema
- Urinary tract infection
- Acute Abdominal infection
- Meningitis
- Skin/soft tissue infection
- Bone/joint infection
- Wound infection
- Infection from Catheter
- Endocarditis
- Implantable device infection
- No known source other than clinical suspicion
- Other
- Severe pain associated with known or suspected source of infection

**High Risk Patients:**

- Post operative
- Diabetic
- Splenectomy
- Chemotherapy
- Elderly
- Neonates
- Immunocompromised
- Chronic Illness ex. COPD, Substance Abuse, Renal Failure
- Postpartum

**B. S.I.R.S. (Systemic Inflammatory Response Syndrome) criteria**

- Hyperthermia > 38° C
- Hypothermia < 36° C
- Tachycardia > 90 bpm
- Tachypnea > 20 rpm
- Acutely altered mental status (GCS <15) prior to sedation
- Leukocytosis (WBC count >12.0 X 10E9/L)
- Presence of any bands

**C. Primary RN: If patient has a Known or Suspected Infection from Section A, and ≥ 2 S.I.R.S. criteria from Section B , then:**

- Immediately notify charge nurse of patient.
- Confirm patient's priority number and if required, have it changed. Ensure patients are seen quickly
- Place Sepsis Package with patient's chart
- Refer Suspected Septic Patient Nursing Guideline on back of form

**At anytime throughout a patient stay screening for suspected sepsis may occur.**

# A. Known or Suspected Infection

- Pneumonia, emphysema
- Urinary tract infection
- Acute abdominal infection
- Meningitis
- Skin/soft tissue infection
- Bone/joint infection
- Wound infection
- Infection from catheter
- Endocarditis
- Implantable device infection
- No known source other than clinical suspicion
- Other
- Severe pain associated with known or suspected source of infection

## High Risk Patients

- Post-Operative
- Diabetic
  - Splenectomy
  - Chemotherapy
- Elderly
  - Neonates
- Immunocompromised
- Chronic Illness (e.g. COPD, Substance Abuse, Renal Failure)
- Postpartum



## B. SIRS CRITERIA

(Systemic Inflammatory Response Syndrome)

- Hyperthermia  $> 38^{\circ}\text{C}$
- Hypothermia  $< 36^{\circ}\text{C}$
- Tachycardia  $> 90$  bpm
- Tachypnea  $> 20$  / min
- Acutely altered mental status (GCS  $< 15$ ) prior to sedation
- Leukocytosis (WBC count  $> 12 \times 10^9/\text{L}$ )
- Presence of any bands

# **SIRS - Considerations for Older Adults**

Hyperthermia  $> 38^{\circ}\text{C}$

Hypothermia  $< 36^{\circ}\text{C}$

**1.3 $^{\circ}\text{C}$  change from baseline**

(consider Normal Aging Changes, Medications)

Tachycardia  $>90$  bpm

**Heart Rate – change from baseline**

(consider Normal Aging Changes and Medication effects)

Tachypnea  $>20$  min

**Respiratory Rate – change from baseline**

GCS  $<15$

**Delirium detection (e.g. CAM)**

Leukocytosis (WBC $>12$ )

**Leukocytosis**

Presence of any bands

**Bands**

# Stress Prevention Strategies

- Assess for discomfort e.g. pain, urine retention
- Avoid physical restraints
- Support sleep
- Reduce noise and overstimulation
- Consistent caregivers
- Meaningful activities
- Therapeutic napping



# Surgery and Delirium Prevention

## Pre-Op



- Nutrition
- Limited fasting!
- Patient education
- Carbohydrate loading
- Appropriate analgesia
- Medication review**

## Operative



- Appropriate analgesia
- Minimal access surgery
- Normal temperature
- Minimal anaesthesia (“freezing” & epidurals vs “going under”)
- Minimize fluid replacement

## Post-Op

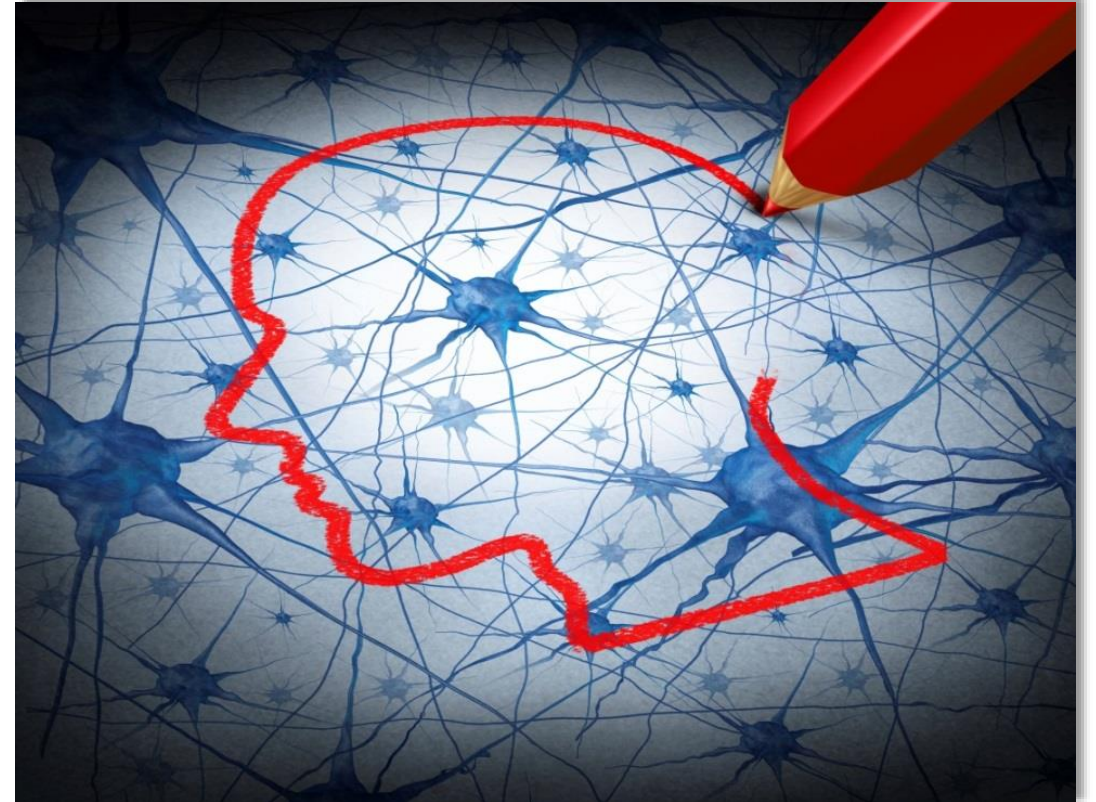


- Early removal of tubes and drains
- Early nutrition
- Early ambulation
- Nausea and vomiting prophylaxis (**cautious**)
- Appropriate (and pre-emptive) analgesia
- F/U after discharge

# Acetylcholine and Parkinson's Disease

Parkinson's disease and the resulting medications increase risk of delirium

Best treatment is to reduce Parkinson's medications.



# End of Life Delirium

Current practice supports antipsychotics at end of life

Evidence is unfolding to suggest supportive nursing care and gentle hydration (e.g. hypodermoclysis) may be more effective.



# Do antipsychotics treat delirium?

**Antipsychotic may cause or worsen delirium**

**Antipsychotics are a last resort when:**

- Distressing/dangerous psychosis *and* non-pharmacologic strategies are ineffective
- Psychosis is an obstacle to crucial treatment
- Short term (e.g. one dose) while treating underlying causes
- Low dose: e.g. 0.25 to 0.5 mg haloperidol (Haldol)

*Antipsychotics do not treat delirium.*



# Summary

Those with dementia are already at increased risk of delirium

Delirium has many causes, including:

- Too many medications
- Dehydration
- Malnutrition
- Stress
- Infection
- Surgery
- Parkinsons Disease



*While delirium is a multifactorial process, it is estimated that medications alone may account for 12%-39% of all cases of delirium.*

Alagiakrishnan and Wiens 2004



# DELIRIUM is a **MEDICAL EMERGENCY**



Like chest pain  
Like anaphylaxis  
Like stroke

**Intervene IMMEDIATELY**

# Site Assessment

What are you already doing well?

Where do you have room for improvement?

What are your priorities and next steps?

Team Action Plan for Delirium Prevention

How is your unit/facility doing in the following areas?	Needs Improvement	Average	Great
Medication review to reduce pill and anticholinergic burden, antipsychotics, sedatives			
Support sleep			
Appropriate use of Drugs for Bugs			
Reduce stress: pain			
Reduce stress: overstimulation (e.g. call bells, bed alarms, overhead paging)			
Reduce stress: person-centred care plan			
Reduce stress: minimal use of physical restraints			
Support of hydration			
Support of nutrition			
Early delirium detection			
Rapid delirium response			
Other:			

1. Place a check mark to indicate how you think your team is doing in each area listed.
2. Compare results as a team: what areas are you doing well? Celebrate!
3. Compare results as a team: where is improvement most needed?
4. Select at least 1 Quality Improvement Focus.
5. Determine next steps. (see reverse)