May 7, 2008

Dear Hospice and Palliative Care Member:

As you know, over the past 18 months, 23 of the Federation’s hospice members participated in a Quality Initiative with Masspro, the CMS contracted Quality Improvement Organization program for Massachusetts. This pilot focused on improving the management of terminal delirium among hospice patients. However, the project provided education, consultation, and peer support to lead the hospices through a QAPI model that can be used for any future improvement project at their programs. Many thanks go to Margaret Johnson, Senior Director of Quality Improvement Services, Masspro, who led this unique project at no expense to the Federation or the hospices who participated. The project has gone a long way to prepare hospices for the new Quality Assessment/Performance Improvement (QAPI) rules in the Proposed Medicare Hospice of Conditions expected to be finalized in May 2008.

Many tools and information were developed during the course of this project. We have repackaged some of these tools in the enclosed kit and hope your team will find the tools useful for assessing and treating terminal delirium as well as reviewing a solid QAPI process.

Sincerely,

D. Rigney Cunningham  Margaret C. Murphy
Executive Director  Assistant Director
**Terminal Delirium Definition:** A change in mental status that has an acute or subacute onset with a fluctuation of symptoms in both severity and over time. There is also a waxing and waning of attention. Additional features may be increased or decreased psychomotor activity, a disorganized sleep-wake cycle, difficulty in coherent thinking (confusion), anxiety, restlessness, disturbing dreams and fleeting hallucinations.

Joanne Nowak MD

## Confusion Assessment Method

**THE CONFUSION ASSESSMENT METHOD**

1. **ACUTE ONSET AND FLUCTUATING COURSE**
   Is there evidence of an acute change in mental status from the patient’s baseline? Did this behavior fluctuate during the past day, that is, tend to come and go or increase and decrease in severity?

2. **INATTENTION**
   Does the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what was being said?

3. **DISORGANIZED THINKING**
   Is the patient’s speech disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

4. **ALTERED LEVEL OF CONSCIOUSNESS**
   Overall, how would you rate this patient’s level of consciousness?
   - Alert (normal)
   - Vigilant (hyperalert)
   - Lethargic (drowsy, easily aroused)
   - Stupor (difficult to arouse)
   - Coma (unarousable)

**THE DIAGNOSIS OF DELIRIUM REQUIRES A PRESENT/ABNORMAL RATING FOR CRITERIA: (1) AND (2) AND EITHER (3 or 4)**


Card provided courtesy of Hospice of Greater Lowell

## MINI MENTAL STATE EXAMINATION

<table>
<thead>
<tr>
<th>Maximum Score</th>
<th>Orientation</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>What is the (year) (season) (date) (day) (month)?</td>
<td>3 Name three objects: one second to say each. Ask the patient for all three after you have said them. Give one point for each correct answer. Repeat them until all three are learned. Count trials and record number.</td>
</tr>
<tr>
<td>5</td>
<td>Where are we (city) (state) (country) (hospital) (floor)?</td>
<td></td>
</tr>
</tbody>
</table>

**Attention and Calculation**

5 Serial sevens backwards from 100 (stop after five answers). Alternatively, spell WORLD backwards.

3 Ask for the three objects repeated above. Give one point for each correct answer.

**Language and Praxis**

2 Show a pencil and watch and ask subject to name both

1 Ask the patient to repeat the following “No ifs, ands or buts.”

3 (Three-stage command): “Take this paper in your right hand, fold it in half, and put it on the floor.”

1 “Read and obey the following:” Close your eyes

1 “Write a sentence”

1 “Copy this design” (interlocking pentagons)

=total/30

Delirium at End of Life - Presentation

Delirium at end of life
Suzane Makowski, MD
Medical Director, Hospice & Palliative Care of Cape Cod
Yarmouth, MA
JoAnne Nowak, MD
Medical Director, Partners Hospice
Wollaston, MA
Jennifer Reidy, MD
Medical Director, Merrimack Valley Hospice
Lawrence, MA

Delirium
- What is it?
- Why is it important?
- What causes it?
- How do you manage the patient with delirium near the end of life?

Delirium
What is it?
Q: Delirium is experienced in up to what percentage of terminally ill cancer patients?
1. 10%
2. 23%
3. 50%
4. 85%

Q: Which symptom is characteristic of delirium?
1. Impairment of only short term memory
2. Impairment of attention
3. Agitation or restlessness
4. Delusions or hallucinations

Early Descriptions
- Hippocrates: 400 BCE
  "they move the face, hunt in empty air, pluck rap from the bedclothes...all these signs are bed, in fact deadly"
- Celsus: 1st Century CE
  "Sick people...lose their judgement and talk incoherently...when the violence of the fit is abated, the judgement presently returns..."
Synonyms
- Acute confusional state
- Acute mental status change
- Altered mental status
- Organic brain syndrome
- Toxic/metabolic encephalopathy
- Reversible dementia
- Subacute befuddlement

Synonyms
- Agitated
- Confused
- Combative
- Restless
- Crazy
- Lethargic
- Out of it
- Out to lunch
- Poor historian
- Seeing things
- Sleepy
- Uncooperative
- Wild man

Terminal Agitation
- A symptom or sign: thrashing or agitation that may occur in the last days or hours of life
- Broad differential, including:
  - Pain
  - Anxiety
  - Dyspnea
  - Delirium
Delirium

- Delirare: to be crazy
- De lira: to leave the furrows

DSM-IV Criteria: Delirium

- Disturbance in consciousness
  - Attention
- Change in cognition
  - E.g.: memory, orientation, language
- Develops over a short period of time
- Caused by the direct physiological consequences of a general medical condition

World Health Organization: ICD - 10

- Impairment of consciousness or attention
- Global disturbance of cognition
- Psychomotor disturbance
- Disturbance of the sleep-wake cycle
- Emotional disturbances
Essential Diagnostic Criteria

- Acute or subacute onset
- Fluctuating course
- Disordered attention and cognition
- Disturbance of psychomotor behavior
  - Agitation, somnolence, hallucinations, paranoia

Clinical Subtypes

- Hyperactive
  - Confusion, agitation, hallucinations, myoclonus
- Hypoactive
  - Confusion, somnolence, withdrawn
  - More likely to be under-diagnosed
- Mixed

Differentiating Delirium from Dementia

| Features         | Delirium          | Dementia
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset</td>
<td>Acute</td>
<td>Insidious</td>
</tr>
<tr>
<td>Course</td>
<td>Fluctuating</td>
<td>Progressive</td>
</tr>
<tr>
<td>Duration</td>
<td>Days to weeks</td>
<td>Months to years</td>
</tr>
<tr>
<td>Consciousness</td>
<td>Altered</td>
<td>Clear</td>
</tr>
<tr>
<td>Attention</td>
<td>Impaired</td>
<td>Normal except in severe dementia</td>
</tr>
<tr>
<td>Psychomotor changes</td>
<td>Increased or decreased</td>
<td>Often normal</td>
</tr>
<tr>
<td>Reversibility</td>
<td>Usually</td>
<td>Rarely</td>
</tr>
</tbody>
</table>
Symptoms in End Stage Dementia

Symptoms reported last year of person's life who die with dementia:

- Agitation 87%
- Confusion 83%

J. Geriatric Psychiatry 1997

Recognizing and naming delirium is the first step in its appropriate management

Delirium

Why is it important?
**Delirium is Common**

- Up to 80% of people experience delirium during the final week of life
- 15-20% hospitalized cancer patients experience some delirium

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**Patient Impact**

- Greater than >70% of seriously ill patients rate mental awareness as important
  - JAMA 2000;284(24):3476 - 3482
- 89% of seriously ill patients would not choose a treatment if the outcome is cognitive impairment; the more risk the less inclined to treatment

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**Caregiver Impact**

- 76% witnessed delirium or confusion
- 36% witnessed these symptoms daily
- Sense of fear and helplessness
- May contribute to caregiver risk for Major Depressive Disorder and quality of life impairments (in aggregate with prevalence and frequency of other distressing events)
Consequences of Delirium

- Causes a person to be frightened, agitated, and upset
- Interferes with the assessment and treatment of other symptoms
- Increased caregiver burden
- Increases the use of restraints
- Interferes with meaningful communication and interaction

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Delirium

What causes it?

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Q: Which of the following medications can cause delirium?

1. Lorazepam
2. Hyoscymine
3. Dexamethasone
4. All of the above
5. None of the above
Q: Delirium is reversible in what percentage of cases?
1. ~50%
2. ~25%
3. ~10%
4. ~1%

Case: Paul
- 72 yo man with Alzheimer's disease, lung cancer
- Retired dentist, very active and "in charge" during his life
- Very agitated, combative, trying to get out of bed

Pathophysiology
- Poorly understood
- Acetylcholine deficiency
- Dopamine excess
- Cytokines
  - Increase blood-brain barrier permeability & alter neurotransmission
- Chronic stress
  - Activates sympathetic nervous system, hypothalamic-pituitary-adrenocortical axis
Which patients are at risk?

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Functional status</th>
</tr>
</thead>
<tbody>
<tr>
<td>age &gt; 65</td>
<td>Immobility, low activity</td>
</tr>
<tr>
<td>female sex</td>
<td>history of falls</td>
</tr>
<tr>
<td>Cognitive status</td>
<td>Sensory impairment</td>
</tr>
<tr>
<td>dementia</td>
<td>visual or hearing impairment</td>
</tr>
<tr>
<td>cognitive impair</td>
<td></td>
</tr>
<tr>
<td>depression</td>
<td></td>
</tr>
<tr>
<td>previous delirium</td>
<td></td>
</tr>
</tbody>
</table>

Patients at risk...

- **Decreased oral intake**
  - dehydration
  - malnutrition

- **Drugs**
  - psychoactive drugs
  - polypharmacy
  - alcohol abuse

- **Coexisting conditions**
  - terminal illness
  - multiple comorbidities
  - chronic renal, hepatic dx
  - CV, neurologic disease
  - metabolic derangements
  - fracture or trauma

What causes delirium?

- Medication side effect (most common)
  - Opioids
  - Corticosteroids
  - Benzodiazepines
  - Scopolamine
  - Hydroxyzine
  - Diphenhydramine
  - Hyoscymine

- Tricyclic antidepressants
- H2 blockers
- NSAIDs
- Moclopromide
- Alcohol/drugs
- withdrawal
Causes...

- Medical contributors
  - Infection
  - Brain metastasis
  - Hepatic encephalopathy
  - Renal failure
  - Hypocalcemia
  - Hypokalemia
  - Hypoxemia
  - Volume depletion
  - Immobilization
  - Pain
  - Urinary retention
  - Constipation

- Psychosocial contributors
  - Depression
  - Vision/hearing impairment
  - Emotional, spiritual distress
  - Unfamiliar environment

Paul: is he at risk of delirium?

- Predisposing conditions:
  - Dementia
  - Elderly frail
  - Metastatic lung cancer
  - Immobility
  - Poor oral intake
  - Polypharmacy

- Possible precipitating factors:
  - Drug side effect?
  - Hypoxemia?
  - Infection?
  - Constipation?
  - Urinary retention?
  - Metabolic disorder?
  - Brain metastases?
  - Emotional distress?

Assessment: history

- Hospice diagnosis, co-morbidities
- Onset of mental status change
- Oral Intake, urine output, bowel movements
- Recent medication history
History:
- Review of systems: fever, N/V, pain, dyspnea, cough, edema, decubiti
- Alcohol or illicit drug use
- Falls, safety
- Emotional, spiritual distress

Paul: history
- Metastatic non-small cell lung cancer
- Severe Alzheimer's disease
- More restless; combative in last 3 days
- Hand-fed small, pureed meals & thickened liquids but minimal in 3 days
- Small amount dark urine, no BM in 1 week

Paul...
- Increasing doses of lorazepam in last 1-2 weeks for sleep, anxiety
- Per family, no signs of pain, cough, respiratory distress, edema or falls
- Stage II decubitus on coccyx
- Family very outgoing, emotional; holding vigil at bedside -> distressed b/c Paul "pushes us away"
Assessment tools

- Confusion Assessment Method (CAM)
  - 94-100% sensitive, 90-95% specific
  - 10-15 minutes by trained interviewer

- Delirium Symptom Interview
  - 90% sensitive, 80% specific
  - > = 15 minutes by trained interviewer

Assessment tools...

- Delirium Rating Scale
  - Based on lengthy interview by psychiatrist

- Memorial Delirium Assessment Scale
  - 82% sensitive, 75% specific
  - > = 10 minutes by experienced mental health clinician; designed to rate severity, not screening or diagnosis.
Confusion Assessment Method

- Feature 1: Acute onset and fluctuating course
- Feature 3: Disorganized thinking
- Feature 4: Altered level of consciousness

* The diagnosis of delirium by CAM requires the presence of features 1 and 2 and either 3 or 4.

Assessment: physical exam

- Careful, gentle approach to patient
- Appearance, vital signs
- Focused exam based on history
- Consider rectal exam, catheter

Paul: exam

- Lethargic, frail, elderly man lying in hospital bed; fidgeting of arms, legs; slow but persistent attempts to sit up or slide between siderails; quiet but anxious expression
- CAM: all features present
Paul...
- Afebrile, BP 105/62, HR 95, RR 24
- Positive findings: MM dry; abd distended but soft, quiet BS; rectal +stool; bladder catheter w/cloudy, dark urine; decubitus stable w/o infection

Next steps...
- What are the goals of care?
- What is the patient's prognosis?
- Are the patient and caregivers safe?
- Does the patient appear in distress?
- How is the family coping with the current situation?

Next steps...
- What are the benefits and burdens of:
  - Labs, tests to search for reversible causes of delirium?
    - CBC, lfts, BUN/creatinine, calcium, glucose, UA, O2 sat
  - Treatments of underlying cause(s)?
    - Antibiotics, oxygen, bladder catheter, other
  - Treatments of agitated behavior?
    - Antipsychotics, sedative hypnotics
    - Change in setting of care
Follow-up: Paul

- Goals of care: peaceful death at home, no hospitalizations, no needlesticks
- Disimpacted & started daily laxative regimen
- Diagnosed UTI & treated w/ liquid Abx
- Weaned lorazepam from 2 mg SL q4 hrs pm to 0.25 mg SL q8 hrs pm

Follow-up (con't)

- Started haloperidol 0.5-1 mg SL q6h and q8 hrs pm
- Created a calmer environment
- Allowed Paul to express/use his energy safely
- In 2-3 days, Paul back to his baseline

Prevention

- Best treatment for delirium is to prevent it in the first place
- Delirium can be reversible in ~50% of episodes
  - Increased fluid intake, correct hypotension
- Targeted interventions can prevent delirium in hospitalized older adults
  - Sleep hygiene, scheduled physical & mental activities, correction of visual & hearing problems, hydration
How do you manage the patient with delirium near the end of life?

What is your first line medical treatment choice for agitated delirium?
1. Haloperidol
2. Chlorpromazine
3. Lorazepam
4. Olezapine or Risperidone
5. 1, 2, and 4

Which of the following is an appropriate initial intervention for delirium?
1. Music during turns/personal care
2. Minimize ambient sound (alarms, bells, voice)
3. Aromatherapy such as lavender or melissa with bed bath
4. Spiritual interventions such as prayer, ritual, meditation
5. Cognitive behavioral therapy for PTSD
6. Engaging family or familiar people in care
7. All of the above
Prevention & Early Intervention:
- Know the risk factors:
  - Who is most at risk for becoming delirious?
- Develop a prevention/intervention plan of care:
  - Physical Environment
  - Physical Suffering
  - Polypharmacy and physiology
  - Psychosocial Interaction
  - Existential

So now what?
- Prevention is too late or did not work...
- Assessment of agitation is completed:
  - Anxiety?
  - Dementia?
  - Pain?
  - Delirium?
- Causes of delirium are suspected, now what?

Delirium is a Palliative Emergency
- Monitor carefully
  - Warrants GIP level of care.
- If patient responds negligibly or partially
  - Reevaluate diagnosis/presumed cause
  - Inquire about adherence to medication
  - Consider dosage adjustment
    - Titrate before rotate - just like with pain!
  - Consider a different medication
  - Refer to a specialist
- Remember the family and caregivers!
Treatment of Delirium

- Step 1: Treat underlying causes
- Step 2: Non-pharmacological
- Step 3: Pharmacological
- Address family, caregivers and other psychosocial impacts of delirium

Philip's Struggle

- 63 yo retired photographer with end-stage CHF, in the context of drug abuse history. He was estranged from his family and no longer active in his Jewish faith.
- Severe dyspnea. New over 2 weeks becoming increasingly confused multiple times each day. Sometimes confusion is agitated, sometimes somnolent.

Step 1: Treat underlying causes

- Drugs (Side effects, CO, MD)
- Emotion (Mood, Anxiety, Depression, Encephalopathy, Environmental change)
- Low Oxygen or Hearing/Seeing (Hypoxia, CHF, PE, COPD)
- Infection, Intracerebral event or metastasis
- Retention (Urine, Feces)
- Intake (Malnutrition, Dehydration), Immobility
- Uremia
- Metabolic (Thyroid, Organ Failure, Electrolytes, Calcium, SADH)
Address Physical Causes

- Pain:
  - Does the medicine match the pain?
- Dyspnea:
  - Oxygen - hypoxia can cause delirium
- Constipation/Retention
- Fevers:
  - Pharmacologic
  - Non-pharmacologic: Lemon foot wrap, other cooling techniques
- Others?

Philip's story continued

"Philip has terminal agitation, and I think he needs more...?"
- Is it terminal agitation, or something else?
- How can you find out?
- Step 1: Treat underlying cause
  (suspected)

Address Pharmacological Causes:
Remember - First do no harm
Consider stopping, rotating, weaning the following:
- Benzodiazepines (OD/WD, SE)
- Opioids
- Alcohol (OD/WD)
- Anticholinergics
- Anti-convulsants
- Steroids

Questions?
Philip's Medications
- MSContin and Roxinol for dyspnea
- Oxygen
- Lorazepam q4 hours prn for anxiety
- Furosemide qd for edema
- Metoprolol bid for CHF
- Lisinopril for CHF

Philip's story continued
- Opioids were rotated.
- Benzodiazepines were weaned.
- Assessment for UTI was negative.
- Poor hydration and nutrition status were difficult to reverse.
- Oxygen was increased.
- Chaplain was involved.
  - What happened?

Address Psychosocial Causes
- Post-traumatic stress disorder in veterans.
- Veterans with PTSD who receive a terminal diagnosis often want to:
  - Make sure their story has been heard.
  - Put the traumatic events into some sort of perspective in their lives.
  - Deal with the effects that PTSD has had on their lives, such as mending relationships, giving and accepting closeness and affection, and getting affairs in order.
Address Existential Causes

- Involve the chaplain
- Assess for possible existential crisis or other version of pre-death awareness
- Consider prayer, meditation, mantra, ritual

Mr. U's Existential Suffering

Mr. U's Existential Crisis

ID: 65 year old retired engineer with metastatic lung cancer to bone.

HPI: Severe pain, principally in area of leg requiring complex pain management. Now he is experiencing increased confusion, agitation, restlessness at night.

Past Medical History: Generally healthy until diagnosis.

Social History: Married to a non-catholic woman. Has 2 grown daughters. Raised Catholic but has not been to church much since his marriage.
Mr. U's Spiritual Pain

- Fear of the afterlife
- Unresolved regrets
- Sacraments
- Priest
- Never married in Church
- Importance of ritual
- Importance of witnessing, presencing and non-abandonment, non-judging.

Step 2:
Non-Pharmacological Treatments

- Environmental factors
  - Materials (like calendars, clocks) to orient
  - Adequate soft lighting
  - Identify all individuals
  - Limit number of different individuals
  - Limit stimulation
  - Sitters for safety
  - Engage family, if possible
  - Music therapy

Physical Environment

- Sight:
  - Light/Dark Cycles
  - Visual stimuli/cues
  - Familiar faces
- Sounds:
  - Ambient noise
  - Music therapy
  - Familiar voices
- Smells:
  - Aromatherapy, other?
- Touch
Agitation & Aromatherapy

- Aromatherapy massage RCT showed short-term benefit in anxiety in patients with cancer related anxiety.
- Lavandula angustifolia (Lavender) aromatherapy
  - agitation in elderly patients with dementia.
  - Cross-over randomized study, N=70
  - Improvement in Agitation (p<0.0000), Irritability (p<0.001), physical aggression, physical behavior non-aggressive, and verbally agitated behavior (p<0.001).
  - Other studies showed cutaneous application of oil for effect, given decrease in olfactory function in elderly.

Step 3: Pharmacological Intervention

- What options do we have?
- What is the evidence?
**Use of Antipsychotics In Delirium**

The Cochrane Collaboration 2005
Review of drug therapy for delirium in terminally ill patients
Multi-database search (1966-2003) for prospective studies w/ or w/o randomization and/or blinding
Of 13 studies only one met criteria:
Further research essential

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**Delirium Study**

**Methods:**
- 30 patients consented on admission & q week
- 3 arm blinded study using Lorazepam, Haloperidol-or Chlorpromazine
- Doses Doubled At Intervals

**Results:**
- Haloperidol & Chlorpromazine Effective;
- Lorazepam Worsened Delirium

Bracht et al. J of Psych 1996

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**Why Chlorpromazine?**

**Pharmacological Parameters**

<table>
<thead>
<tr>
<th>Pharmacological Parameter</th>
<th>Chlorpromazine</th>
<th>Haloperidol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedation</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>EPS</td>
<td>++</td>
<td>++++</td>
</tr>
<tr>
<td>Anticholinergic</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Orthostatic Hypotension</td>
<td>+++</td>
<td>+</td>
</tr>
</tbody>
</table>

+++ = very high incidence, +++ = high incidence, ++ = moderate incidence, + = low incidence

Drug Facts and Comparisons (Oct 2023)
Chlorpromazine (Thorazine): Routes of Administration

- PO:PR:IV/IM = 4:2:1
- PO not recommended; bioavailability ~8%; highly variable
- IV - high peaks cause hypotension
- PR recommended if patient able/willing
- Intermittent SC - irritating
- Continuous SC - w/dexamethasone 2mg

Antipsychotics

<table>
<thead>
<tr>
<th>3-7 Days</th>
<th>0.5 Sed</th>
<th>0.25 Sed</th>
<th>0.125 Sed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol IM, PO, SC</td>
<td>Chlorpromazine IM, PO, SC</td>
<td>Quetiapine IM, PO</td>
<td></td>
</tr>
<tr>
<td>SCF</td>
<td>SCF</td>
<td>SCF</td>
<td></td>
</tr>
<tr>
<td>&gt;7 Days</td>
<td>Perphenazine PO, IM, SCF</td>
<td>Olanzapine IM, PO</td>
<td>Ziprasidone PO, IM, SCF</td>
</tr>
<tr>
<td>Tid, qid, qid (tid, qid, qid)</td>
<td>Tid, qid, qid (tid, qid, qid)</td>
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</tr>
<tr>
<td>(noct)</td>
<td>(noct)</td>
<td>(noct)</td>
<td></td>
</tr>
</tbody>
</table>

Antipsychotics: Black Box Warning

- The FDA has reported that 5106 elderly patients with dementia treated with atypical (second generation) antipsychotics in 17 randomized controlled trials had a higher mortality rate (4.5% vs. 2.6%) than those receiving placebo.
- cardiovascular
- and infectious causes
- What to do about this information?
Philip's Story continues:

Step 3: Add antipsychotic medication
- He began to have fewer hyperactive delirious episodes, but still his mental status waxed and waned.
- Haloperidol was started initially given hypoactive delirium.

Targeted Pharmacological Therapy
- Antipsychotic therapy is first choice.
- Choose based on level of behavior
  - If more hyperactive, consider chlorpromazine
  - If more hypoactive, consider haloperidol
- Titrate medication if initial dose is not effective.
- Consider switching medication if:
  - Lengthy treatment anticipated
  - Lack of response despite increase dose.

If antipsychotics do not work
- Reassess cause - again, depending on goals of care.
- Consider second line option of sedation if needed.
  - This is where recommendations for benzodiazepines, barbiturates or propofol comes into play.
  - This is palliative sedation!
Use of Pharmacotherapy in Delirium

Multi-database search 1966-2002 for "best available evidence"; 14 of 72 met criteria

Recommendations for Terminal Restlessness and Delirium:

<table>
<thead>
<tr>
<th>First Line</th>
<th>Preferred</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haldol</td>
<td>Haloperidol</td>
<td>Chlorpromazine</td>
</tr>
<tr>
<td>Second Line (sedation as goal)</td>
<td>Midazolam (or other benzo)</td>
<td>Propofol</td>
</tr>
</tbody>
</table>


Philip's story: conclusion
- Despite aggressive interventions, he awoke with more alertness for a brief period of time.
- Now he showed signs of active dying:
  - Motting of hands and feet
  - Irregular breathing patterns
- Chlorpromazine suppositories were given.
- He died peacefully 7 days later.

Terminal Delirium
- Diagnosis of exclusion
- Delirium during the dying process
  - Signs of the dying process
- Multiple causes, often irreversible
- Sedating antipsychotics
- Lorazepam or midazolam to settle, back-up option
Summary

Agitation is a sign, not a diagnosis
Know the difference: Delirium, Dementia, Anxiety
If it is delirium, assess possible causes
Terminal Delirium is a diagnosis of exclusion, should not be presumed.
Use step-wise approach to treat:
1. Address the underlying cause
2. Use non-pharmacological interventions
3. Use targeted pharmacological interventions
4. Sedation if need be (non-targeted therapy)
# Confusion Assessment Method

| Feature 1: Acute Onset and Fluctuating Course | This feature is usually obtained from a family member or nurse and is shown by positive responses to the following questions: Is there evidence of an acute change in mental status from the patient's baseline? Did the (abnormal) behavior fluctuate during the day, that is, tend to come and go, or increase and decrease in severity? |
| Feature 2: Inattention | This feature is shown by a positive response to the following question: Did the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what was being said? |
| Feature 3: Disorganized thinking | This feature is shown by a positive response to the following question: Was the patient's thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject? |
| Feature 4: Altered Level of consciousness | This feature is shown by any answer other than “alert” to the following question: Overall, how would you rate this patient’s level of consciousness? (alert [normal]), vigilant [hyperalert], lethargic [drowsy, easily aroused], stupor [difficult to arouse], or coma [unarousable]) |

The diagnosis of delirium by CAM requires the presence of features 1 and 2 and either 3 or 4.
Delirium References
Suzana Makowski, MD
JoAnne Nowak, MD
Jennifer Reidy, MD


## Terminal Delirium and Agitation Chart Audit

### Exclusion Criteria

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<th>Age less than 18</th>
<th>Yes, stop</th>
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1. Was there a diagnosis of terminal delirium/agitation?

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2. Documentation of signs and symptoms of terminal agitation

Check all that apply

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Comments:

Documented by

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Comments:

7. Were there telephone calls to on-call or after hours service regarding the onset/management of Sx

| Yes        | 25 |
| No         | 5  |

8. If Yes, what was the response

| a. Home visit | |
| b. Medication adjustment | 20 |
| c. ER/hospital   |   |
| Not documented  | 10 |

Comments:

9. Were the symptoms relieved prior to death?

| Yes        | 25 |
| No         | 5  |
| Not documented |   |

Comments:

Confusion Assessment Method (CAM) Diagnostic Algorithm

Number of cases that met CAM criteria | 10 |