Reducing Antipsychotics for Better Patient Outcomes

Care Providers Oklahoma
Annual Fall Fair
Sept. 18, 2018
Agenda and Objectives

• Review mechanisms of action, clinical characteristics and safety information for the classes of antipsychotic medications

• Review case studies to illustrate potential problems with antipsychotic medication use in the elderly

• Introduce and review strategies to decrease reliance on antipsychotic medications to treat Behavioral and Psychological Symptoms of Dementia (BPSD)
Why do we use antipsychotics?

• Historically used only to treat mental health related disorders such as schizophrenia, manifestations of psychotic disorders, bipolar disorder and usually only under the direction of a psychiatrist

• Also used for nausea and vomiting

• There are some “newer” indications for use, including as adjunct treatment for major depressive disorder

• The “off-label” use for Behavioral and Psychological Symptoms of Dementia (BPSD) and even delirium is the problem...
How do antipsychotics work?
Mechanism of Action

First Generation / Conventional Antipsychotic Medications

Block these receptors:

- Dopamine (D2)
- Muscarinic Cholinergic (M1)
- Alpha adrenergic (α1)
- Histamine (H1)

Has effect on:

- Improve disease, but movement side effects and affects prolactin
- Anticholinergic side effects including dry mouth, blurred vision, constipation, urinary retention, cognitive dysfunction
- Hypotension/Orthostasis
- Sedation
Mechanism of Action

Second Generation / Atypical Antipsychotic Medications

Block these receptors or impact neurotransmitters

- Dopamine (D1,2,3,4)
- Serotonin (almost all types)
- Muscarinic Cholinergic (M1)
- Alpha 1 & 2 (α1 + α2)
- Histamine (H1)
- Serotonin re-uptake blocked
- Norepinephrine re-uptake blocked

Has effect on:

- Too much to list!
Black Box Warnings (BBWs)

• Increased mortality in elderly patients with dementia-related psychosis (all antipsychotics)
  › Mostly due to Sudden Cardiac Death (SCD) and cerebrovascular accidents
  › SCD twice as likely in patients receiving antipsychotics

• Proarrhythmic effects including torsade de pointes (Thioridazine)

• Increased risk of suicidality in children, adolescents and young adults (Aripiprazole, Brexpiprazole, Lurasidone, Quetiapine)

• Myocarditis, cardiomyopathy, mitral valve incompetence, seizures, orthostatic hypotension, bradycardia, syncope and severe neutropenia (Clozapine)
Side Effects/Adverse Effects

- Sedation
- Hypotension
- Anticholinergic effects
- Extrapyramidal symptoms (EPS)
- Increased prolactin hormone (osteoporosis and fracture)
- Sexual dysfunction
- Agranulocytosis
- Cardiac arrhythmias (prolong the QT interval in heartbeat)
- Seizures
- Metabolic syndrome
## Antipsychotic Medication Reference

### User Guide
- Usual dosage ranges represent treatment of schizophrenia in healthy adults unless otherwise indicated. Dosage adjustments are often required based on patient age, renal and hepatic function, etc.
- Side effects/adverse effects are not necessarily listed in order of severity or frequency.
- Not all side effects/adverse effects are represented. Consult full prescribing information for complete list and frequency of side effects.
- Off-label uses identified by one or more references/compendia do not imply appropriate use.
- A Black Box Warning (BBW) provides an alert to serious or life-threatening risks with the use of a medication.

### 1st Generation Antipsychotics

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>FDA Approved Indications</th>
<th>Age Group for Which Approved</th>
<th>Off Label Uses</th>
<th>Side Effects/Adverse Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpromazine</td>
<td>Management of manifestations of psychotic disorders&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Adults and children (6 months to 12 years)&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Behavioral symptoms associated with dementia (elderly); psychosis; agitation associated with dementia&lt;sup&gt;2&lt;/sup&gt;</td>
<td>BBW: Increased mortality in elderly patients with dementia-related psychosis&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Treatment of schizophrenia&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td>Treatment of migraine in adults (intramuscular/intravenous)&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Brownish or bluish discoloration of skin, extrapyramidal symptoms (dystonia, motor restlessness, pseudoparkinsonism, tardive dyskinesia), neuroleptic malignant syndrome, lowering of seizure threshold, hyperprolactinemia, jaundice, hematologic disorders, agranulocytosis, hemolytic anemia, hypertensive effects, ECG changes, convulsive seizures, allergic reactions, endocrine disorders, autonomic reactions, changes in skin pigmentation, ocular changes, increase in appetite, peripheral edema, lupus-like syndrome, weight changes, and hypotension&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Control the manifestations of the manic type of manic-depressive illness&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
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<tr>
<td></td>
<td>Treatment of severe behavioral problems in children marked by combative ness and/or explosive hyperexcitable behavior&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
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<tr>
<td></td>
<td>Short-term treatment of hyperactive children who show excessive motor activity with accompanying conduct disorders consisting of ore or all of the following symptoms: impulsivity, difficulty sustaining attention, aggression, mood liability and poor frustration tolerance&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
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</tr>
</tbody>
</table>

## TMF’s Antipsychotic Reference Tool

### Relative Side-Effect Incidence of Commonly Used Antipsychotics

<table>
<thead>
<tr>
<th>Drug</th>
<th>Sedation</th>
<th>EPS</th>
<th>Anticholinergic</th>
<th>Orthostasis</th>
<th>Weight Gain</th>
<th>Prolactin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aripiprazole</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Asenapine</td>
<td>+</td>
<td>++</td>
<td>+/-</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Brexpiprazole</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Cariprazine</td>
<td>+</td>
<td>++</td>
<td>+/-</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>++++</td>
<td>+++</td>
<td>+++</td>
<td>++++</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Clozapine</td>
<td>++++</td>
<td>+</td>
<td>+++</td>
<td>++++</td>
<td>++++</td>
<td>+</td>
</tr>
<tr>
<td>Fluphenazine</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>++++</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>++++</td>
</tr>
<tr>
<td>Iloperidone</td>
<td>+</td>
<td>+/-</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Lurasidone</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>++++</td>
<td>+</td>
</tr>
<tr>
<td>Paliperidone</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>++++</td>
</tr>
<tr>
<td>Pimavanserin</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Perphenazine</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>++++</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Risperidone</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>++++</td>
</tr>
<tr>
<td>Thioridazine</td>
<td>++++</td>
<td>+++</td>
<td>+++</td>
<td>++++</td>
<td>+</td>
<td>++++</td>
</tr>
<tr>
<td>Thiothixene</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Ziprasidone</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
</tbody>
</table>

- EPS: extrapyramidal side effects; relative side-effect risk: ±, negligible; +, low; ++, moderate; ++++, high; ++++, very high; ? unknown.
- Side effects shown are relative risk based on doses within the recommended therapeutic range.
- Individual patient risk varies depending on patient-specific factors.

Consider two more adverse effects

• Prolongation of the QT interval
  › Concept of QT “burden”
  › Could this be contributing to the Sudden Cardiac Death seen in elderly patients with dementia as mentioned in the Black Box Warning?

• Hyponatremia
  › Is it drug-induced Syndrome of Inappropriate Antidiuretic Hormone (SIADH) or hyponatremia from other etiologies?
  › Antidepressants more associated with SIADH
  › Atypical antipsychotics associated with increase in 30-day risk of hospitalization with hyponatremia

A word about Delirium

• Many ways to describe delirium: acute confusion, altered mental status, toxic encephalopathy

• Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-V) definition: “requires a disturbance in attention and awareness that develops acutely and tends to fluctuate”

• It is the most common surgical complication among older adults (50 percent after high-risk hip fracture repair and cardiac surgeries)

• As high as 75 percent in ventilated patients in an Intensive Care Unit (ICU)
Are we assessing risk for Delirium?

- Confusion Assessment Method (CAM)
- Confusion Assessment Method for the ICU (CAM-ICU)
- INTERACT® Care Paths
  - Change in Behavior, Acute Mental Status Change

Confusion Assessment Method for the ICU (CAM-ICU)
Worksheet
Identifying Medication-Related Problems – The Prescribing Cascade

• Introduced in *The Lancet* in 1995

• Definition: The misinterpretation of an adverse drug event as a new or change in medical condition, which results in new medication(s) prescribed to treat the adverse drug event

• Example: 70-year-old female prescribed a medication for urinary incontinence, which causes confusion and decreased cognition, resulting in a diagnosis of dementia and a new prescription for an acetylcholinesterase inhibitor as a cognitive enhancer.

Rochan, PA; Gurwitz, JH The prescribing cascade revisited; The Lancet 2017; 389:1778-1780
Medications to avoid in the elderly

<table>
<thead>
<tr>
<th>Cardiovascular</th>
<th>Analgesics</th>
<th>Musculoskeletal</th>
<th>Central Nervous System</th>
<th>Coagulation</th>
<th>Endocrine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral alpha blockers:</td>
<td>Non-COX-2 NSAIDs:</td>
<td>Carisoprodol, Chlorzoxazone, Metaxalone, Methocarbamol, Orphenadrine</td>
<td>Anticholinergic Antidepressants:</td>
<td>Dipyridamole – oral, short-acting, monotherapy only</td>
<td>Androgens</td>
</tr>
<tr>
<td>Doxazosin, Prazosin, Terazosin</td>
<td>Aspirin &gt; 325mg/day</td>
<td>Amtriptyline, Amoxapine, Clomipramine, Desipramine, Doxepin (&gt; 60mg/d)</td>
<td>Amitriptyline, Desipramine, Doxepin</td>
<td>Ticlopidine</td>
<td>Methyltestosterone</td>
</tr>
<tr>
<td>Central alpha blockers:</td>
<td>Diclofenac, Diflunisal, Etodolac, Fenoprofen, Ibuprofen, Ketoprofen, Meloxicam, Naproxen</td>
<td>Naproxen, Oxaprozin, Piroxicam, Sulindac, Tolmetin</td>
<td>Nortriptyline, Paroxetine, Protriptyline</td>
<td>Warfarin used with Amiodarone</td>
<td>Testosterone</td>
</tr>
<tr>
<td>Clonidine, Guanabenz, Methyldopa, Guanfacine</td>
<td>Mefenamic acid, Meloxicam, Naproxen, Oxaprozin, Piroxicam, Sulindac, Tolmetin</td>
<td>Indomethacin, Ketorolac</td>
<td>Antipsychotics – All</td>
<td>Warfarin used with NSAIDs</td>
<td>Desiccated Thryoid</td>
</tr>
<tr>
<td>Others:</td>
<td>Meperidine</td>
<td>Others:</td>
<td>Butabarbital, Butalbital, Mephobarbital, Pentobarbital, Phenobarbital, Secobarbital</td>
<td>Butabarbital, Butalbital, Mephobarbital, Pentobarbital, Phenobarbital, Secobarbital</td>
<td>Estrogens with or without progesterone</td>
</tr>
<tr>
<td>Dsipirmidone</td>
<td>Pantoprazole</td>
<td>Others:</td>
<td>Benzodiazepines (BZDs):</td>
<td>Benzodiazepines (BZDs):</td>
<td>Growth hormone</td>
</tr>
<tr>
<td>Dronedrene, Amiodarone</td>
<td></td>
<td></td>
<td>Short- and intermediate-acting:</td>
<td>Long-acting BZDs:</td>
<td>growth hormone</td>
</tr>
<tr>
<td>Digoxin</td>
<td></td>
<td></td>
<td>Alprazolam, Estazolam, Lorazepam, Oxazepam, Temazepam, Triazolam</td>
<td>Clorazapate, Chloridiazepoxide, Clonazepam, Diazepam, Flurazepam, Quazepam</td>
<td>Insulin – when used according to sliding scale</td>
</tr>
<tr>
<td>Niludipine (immediate release form)</td>
<td>Meperidine</td>
<td>Meperidine</td>
<td>Non-BZD &quot;Z&quot; Drugs:</td>
<td>Non-BZD &quot;Z&quot; Drugs:</td>
<td>Megestrol</td>
</tr>
<tr>
<td>In patients with heart failure:</td>
<td>Pentazocine</td>
<td>Pentazocine</td>
<td>Eszopiclone, Zaleplon, Zolpidem</td>
<td>Eszopiclone, Zaleplon, Zolpidem</td>
<td>Long-acting Sulfonylurases:</td>
</tr>
<tr>
<td>NSAIDs, COX-2 inhibitors, non-dihydropyridine calcium channel blockers, thiazolidinediones, clostatol, dronedrene</td>
<td></td>
<td>STOPP Criteria</td>
<td></td>
<td></td>
<td>Chlorpropamide</td>
</tr>
<tr>
<td>STOPP Criteria</td>
<td></td>
<td>Use of oral or transdermal &quot;strong&quot; opioids as first line therapy for mild pain</td>
<td>Long-term use of NSAIDs (&gt; 3 months) for relief of osteoarthritis symptom pain where paracetamol has not been tried (use simple analgesics first)</td>
<td>&gt; 160 mg daily long-term use</td>
<td>Glyburide</td>
</tr>
<tr>
<td>&gt; Digoxin for heart failure</td>
<td></td>
<td>Examples: Morphine, Oxycodone, Fentanyl, Buprenorphine</td>
<td>Long-term corticosteroid use (&gt; 3 months) as monotherapy for rheumatoid arthritis</td>
<td>With history of Peptic Ulcer Disease (PUD) without concomitant Proton Pump Inhibitor (PPI)</td>
<td>STOPP Criteria</td>
</tr>
<tr>
<td>&gt; Diltiazem and Verapamil in New York Heart Association (NYHA) class 3-4 heart failure</td>
<td></td>
<td></td>
<td>Oral corticosteroid use for osteoarthritis</td>
<td>Plus clopidogrel as secondary stroke prevention</td>
<td>Non-BZD &quot;Z&quot; Drugs in patients with heart failure</td>
</tr>
<tr>
<td>&gt; Beta Blockers when heart rate less than 50 beats/min</td>
<td></td>
<td>STOPP Criteria</td>
<td>Long-term NSAID or</td>
<td>Vitamin K antagonist, direct thrombin inhibitor or factor Xa inhibitors</td>
<td>Rosiglitazone</td>
</tr>
<tr>
<td>&gt; Amiodrone first line for SVT loop diuretic for: HTN first line</td>
<td></td>
<td>&gt; Use of oral or transdermal &quot;strong&quot; opioids as first line therapy for mild pain</td>
<td></td>
<td>With Antiplatelet agents in patients with stable coronary, cerebrovascular or peripheral arterial disease without a clear indication for antiplatelet therapy</td>
<td>Plegitazone</td>
</tr>
<tr>
<td>HTN with urinary incontinence</td>
<td></td>
<td>Examples: Morphine, Oxycodone, Fentanyl, Buprenorphine</td>
<td></td>
<td></td>
<td>Beta-blockers in patients with diabetes mellitus with frequent hypoglycemic</td>
</tr>
</tbody>
</table>

https://www.tmfqin.org/Portals/0/Resource%20Center/Readmissions/Beers%20STOPP%20comparison%20reference%20for%20medications%20to%20avoid%20in%20the%20elderly-QIN_MS_MC_final_508.pdf
## Medications to avoid in the elderly

### Drugs That Increase Risk of Falls

<table>
<thead>
<tr>
<th>Anticholinergics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beers List</td>
</tr>
<tr>
<td>Anticonvulsants</td>
</tr>
<tr>
<td>Antipsychotics</td>
</tr>
<tr>
<td>Benzodiazepines</td>
</tr>
<tr>
<td>Tricyclic antidepressants (TCAs)</td>
</tr>
<tr>
<td>Serotonin reuptake inhibitors (SSRIs)</td>
</tr>
<tr>
<td>Opioids</td>
</tr>
<tr>
<td>Non-benzodiazepine, benzodiazepine receptor agonists (Non-BZD “Z” drugs)</td>
</tr>
<tr>
<td>Eszopiclone</td>
</tr>
<tr>
<td>Zaleplon</td>
</tr>
<tr>
<td>Zolpidem</td>
</tr>
</tbody>
</table>

### STOPP Criteria

**Benzodiazepines (BZDs)**
- Neuroleptic drugs with persistent postural hypotension
- Alpha-1 receptor blockers
- Calcium channel blockers
- Nitrates (long-acting)
- ACE inhibitors
- ARBs
- Minoxidil
- Hydralazine

**Antihypertensive Non-benzodiazepine, benzodiazepine receptor agonists (Non-BZD “Z” drugs)**
- Eszopiclone
- Zaleplon
- Zolpidem

### Anticholinergics

- First Generation Antihistamines
- Brompheniramine, Carbinoxamine, Chlorpheniramine, Clemastine, Cyproheptadine,
  Dextromethorphan, Dextropheniramine, Dimehydrinate, Diphenhydramine, Doxylamine,
  Hydroxyzine, Medizine, Promethazine, Tripelennamine

### Antiemetics

- Promethazine

### Gastrointestinal and Genitourinary

<table>
<thead>
<tr>
<th>Beers List – Gastrointestinal</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSAIDs (non-COX and COX-selective, oral and parenteral) in chronic kidney disease (CKD) stage IV or creatinine clearance &lt; 30 ml/min</td>
</tr>
<tr>
<td>Reduce dose if CrCl: Ezoxiban 50-50 ml/min, Enoxaparin &lt; 30 ml/min, Rivaroxaban 30-30 ml/min, Gabapentin &lt; 60 ml/min, Leveticetain = 80 ml/min, Premabalin &lt; 60 ml/min, Tramadol immediate release &lt; 50 ml/min, Cimetidine &lt; 50 ml/min, Famotidine &lt; 50 ml/min, Nizatidine &lt; 50 ml/min, Ranitidine &lt; 50 ml/min, Colchicine &lt; 30 ml/min</td>
</tr>
</tbody>
</table>

### Renal

- Drugs that lower serum threshold:
  - Bupropion, Chlorpromazine, Clozapine, Maprotiline, Olanzapine, Thioridazine, Thiothixene, Tramadol

### Miscellaneous

- Drugs that can induce or worsen delirium:
  - Anticholinergics
  - Antipsychotics
  - Benzodiazepines
  - Chlorpromazine
  - Corticosteroids, H2-receptor antagonists, Mepentidine, Sedative hypnotics

- Drugs that worsen dementia or cognitive impairment:
  - Anticholinergics, H2-receptor antagonists, Antipsychotics, non-BZD “Z” drugs (Eszopiclone, Zaleplon, Zolpidem)

### STOPP Criteria

- Respiratory
  - Theophylline as monotherapy for COPD
- Systemic corticosteroids instead of inhaled corticosteroids for maintenance therapy in moderate-severe COPD
- Anti-muscarinic bronchodilators with history of glaucoma or bladder outlet obstruction
- Benzodiazepines with acute or chronic respiratory failure
Focus Example: Delirium
Why the need to reduce antipsychotic use in nursing homes?

• Findings from a 2011 Office of Inspector General (OIG) report showed during Jan. 1 - June 30, 2007:
  › 14 percent of nursing home residents had Medicare claims for atypical antipsychotic drugs
  › 83 percent of those claims were associated with “off-label” conditions and 88 percent associated with condition(s) specified in the FDA Black Box Warning
  › 51 percent of those drug claims did not comply with reimbursement criteria = $116M
  › 22 percent of the atypical antipsychotic drug claimed not administered in accordance with the Centers for Medicare and Medicaid Services (CMS) standards regarding unnecessary drug use in nursing homes
Background – Antipsychotic medication use in nursing homes

- March 2012 – new CMS and American Health Care Association (AHCA) initiative aimed at improving behavioral health and safeguarding residents from unnecessary antipsychotic medications

- May 2012 – Partnership to Improve Dementia Care in Nursing Homes
  - Partnership includes: federal, state, nursing facilities, advocacy groups and caregivers
  - National goal:
    - Reduce unnecessary antipsychotic medications in nursing facilities by 15 percent by 12/31/12
Antipsychotic use in nursing homes

- Two CMS quality measures evaluating the use of antipsychotic medications in persons residing in nursing homes
  - Short-stay (temporary resident receiving therapy)
  - Long-stay (custodial care)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Arkansas</th>
<th>Missouri</th>
<th>Oklahoma</th>
<th>Texas</th>
<th>Nation</th>
</tr>
</thead>
<tbody>
<tr>
<td>% short stay residents who got antipsychotic medication for the first time</td>
<td>2.0%</td>
<td>2.0%</td>
<td>2.8%</td>
<td>2.6%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

Accessed through [https://www.medicare.gov/nursinghomecompare/](https://www.medicare.gov/nursinghomecompare/) on 8-30-2018
CMS measure for long-stay residents receiving antipsychotic medication – progress made/current status

<table>
<thead>
<tr>
<th>State/Nation</th>
<th>Q42011</th>
<th>Q42017</th>
<th>% Change</th>
<th>National rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nation</td>
<td>23.9%</td>
<td>15.1%</td>
<td>-36.6%</td>
<td>n/a</td>
</tr>
<tr>
<td>Arkansas</td>
<td>26.1%</td>
<td>14.5%</td>
<td>-44.5%</td>
<td>17</td>
</tr>
<tr>
<td>Missouri</td>
<td>26.1%</td>
<td>18.6%</td>
<td>-29.0%</td>
<td>47</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>27.3%</td>
<td>19.5%</td>
<td>-28.5%</td>
<td>51</td>
</tr>
<tr>
<td>Texas</td>
<td>28.8%</td>
<td>14.7%</td>
<td>-49.0%</td>
<td>23</td>
</tr>
</tbody>
</table>

National Partnership to Improve Dementia Care in Nursing Homes: Antipsychotic Medication Use Data Report (April 2018)
https://www.nhqualitycampaign.org/files/AP_package_20180416.pdf
Some Case Studies

• What are we missing?
• Do we know enough about our residents?
• What can we do differently?
Case Study: Constant Hollering

• 85-year-old resident with dementia and other co-morbid conditions. Hip fracture with open reduction internal fixation (ORIF) two years ago. Since hip fracture, resident relatively immobile in bed.

• Director of Nursing asks pharmacist, “Can you take a look at her meds? We’ve tried everything and are using Ativan®/Benadryl®/Haldol® (ABH) gel every six hours to try to help calm her.”

• Learned from nurse that fracture repair did not set right and leg is crooked. No routine orders for pain medication on chart.

• Added routine pain medication, resident stopped hollering.
Case Study: POLICE!

- 88-year-old gentleman on hospice service for end-stage dementia
- Continues to yell out, “Police, police!”
- Staff nurse states, “We’ve tried everything — ABH gel, Haldol — and don’t know what to do”
- Hydrocodone/Acetaminophen ordered only “as needed” (PRN) and available as liquid. No routine pain medication noted.
- Dose administered, resident quiet, but not asleep
Case Study: Night Watchman

• 80-year-old male resident with dementia
• Walked around the facility at night (after 9 p.m.) checking for locked doors and opening doors
• Drove the nurses crazy — multiple trials of sedatives/hypnotics; diagnosed with insomnia
• Learned he was a night watchman/security guard for 30 years
• Nurses redirected resident, telling him his shift was over at 10 p.m. so he would go to bed.
Hospital use of antipsychotics – is it a concern?

• Meta-analysis study in 2016 concluded that the current scientific evidence does not support the use of antipsychotic medications for the prevention and treatment of delirium in hospitalized adults.

• In 2016, CMS contracted with Mathematica Policy Research to develop the “Use of Antipsychotics in Older Adults in the Inpatient Hospital Setting” (AP) measure
  › CMS response to one public comment: “This measure is intended to characterize the prevalence of the use of antipsychotics in the inpatient setting and encourage exploration of underlying medical issues. Expert feedback has suggested that antipsychotics are too often used as a first line of therapy, and are not used consistently or in a way that has demonstrated effectiveness in treating these symptoms.”
  › Will we see a future requirement to report use?

What happens at discharge?

• A study in the Journal of Critical Care found patients with higher Acute Physiologic Assessment and Chronic Health Evaluation (APACHE II) scores upon admission to ICU and increased treatment days with benzodiazepines were more likely to be discharged with a new prescription for an antipsychotic medication
  
  › 24 percent of patients were discharged from the hospital with a new antipsychotic medication prescription

  › 67% of those patients did not have a documented indication for use

• What one care setting does or doesn’t do, impacts the next care setting

Rowe, AS et al; Risk factors for discharge on a new antipsychotic medication after admission to an intensive care unit; Journal of Critical Care 30 (2015) 1283-1286
Antipsychotic medications in hospice care

In 2013 the World Health Organization (WHO) released its recommendations for Essential Medicines in Palliative Care for 11 symptoms occurring in advanced/end-stage conditions:

- Anorexia
- Anxiety
- Constipation
- Delirium
- Depression
- Diarrhea
- Fatigue
- Nausea
- Vomiting
- Pain
- Respiratory tract secretions
Diagnosis matters

• Haloperidol frequently used in hospice care for nausea and vomiting

• “Terminal delirium”

• If hospice care performed while resident of a nursing facility, hospice use of antipsychotic medications is not exempted from the reduction intervention

• Nursing facilities and hospice providers need to collaborate
Getting Started

Having a systematic approach is key as there will always be new orders added from hospitals, hospices and other sources.
Quality Assurance Process Improvement – QAPI

**PLAN**
Meet with stakeholders: medical director, staff, families, pharmacist
Identify champion
Map process/plan
Build toolkit (forms, training tools)

**DO**
Identify residents with orders for antipsychotics
Identify low-hanging fruit
Schedule evals for dose reduction
Engage pharmacist and pharmacy

**CHECK**
Track progress – have all been evaluated?
Monitor outcomes
Bring information to meeting monthly

**ACT**
What worked? What still needs improvement?
Do we need to understand more about resident history? i.e. mental health history?
Start planning improvements
Recognize potential barriers to reducing reliance on antipsychotic medications

- Lack of communication or poor communication of reduction initiative with physicians, families and nursing facility staff
- Staff turnover – incorporate into orientation
- Lack of buy-in from staff, physicians, etc.
- Data needed to review is not collated
- Lack of tools/resources
- Does the facility have a **systemic approach?**
How do we reduce and discontinue antipsychotic medications?

• Engage your pharmacy team
• Create a culture where we don’t look to antipsychotics as first line to treat behaviors
• Don’t be afraid to re-look at processes that have been “working” for a long time – maybe they really aren’t working as well as they could?
• Be open to non-pharmacological approaches to help manage behavioral and psychological symptoms of dementia
Step 1: The List

- Does consultant pharmacist have a list of all patients receiving antipsychotic medications with or without diagnoses?
  - Screen for other medications that can worsen cognition and prescribing cascades

- Schedule gradual dose reductions (GDRs)
  - Suggestion: Do not take all patients on antipsychotics and do GDR the same month
  - Set a quarterly schedule for GDR for each patient
  - What kinds of forms will be used?

- Who will update and maintain list?

- Will dispensing pharmacy provide reports?
Step 2: Low-Hanging Fruit

• Look for antipsychotics ordered as needed
  › Evaluate frequency of use
  › Get rid of orders for PRN injectable antipsychotics (unless long-acting form for treatment of mental health disorders)

• Look for patients with more than one antipsychotic ordered

• Look for low-dose Quetiapine (25 mg)

• Review your Minimum Data Set (MDS) – Are you coding correctly?
## TMF Psychoactive Tip Sheet for MDS

### Psychoactive and Opioid Drug Reference Sheet for Minimum Data Set (MDS)

*This list is meant for use by MDS Nurses. It does not supersede obtaining consent where required.*

#### ANTIPSYCHOTICS

<table>
<thead>
<tr>
<th>First Generation (Typical)</th>
<th>Second Generation (Atypical)</th>
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<tbody>
<tr>
<td>Chlorpromazine (Thorazine*)</td>
<td>Aripiprazole (Abilify*/Aristada*)</td>
</tr>
<tr>
<td>Droperidol (Inapsine*)</td>
<td>Asenapine (Saphris*)</td>
</tr>
<tr>
<td>Haloperidol (Haldol*)</td>
<td>Brexpiprazole (Rexulti*)</td>
</tr>
<tr>
<td>Loxapine (Loxitane*)</td>
<td>Cariprazine (Vraylar*)</td>
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<tr>
<td>Molidone (Moban*)</td>
<td>Clozapine (Clozaril®)</td>
</tr>
<tr>
<td>Perphenazine (Trilafon®)*</td>
<td>Iloperidone (Fanapt®)</td>
</tr>
<tr>
<td>Pimozide (Orap*)</td>
<td>Lurasidone (Latuda*)</td>
</tr>
<tr>
<td>Prochlorperazine (Compazine®)</td>
<td>Olanzapine (Zyprexa®)*</td>
</tr>
<tr>
<td>Thoridazine (Mellaril®)</td>
<td>Paliperidone (Invega*)</td>
</tr>
<tr>
<td>Thioguanine (Navane®)</td>
<td>Pimavanserin (Nuplazid®)</td>
</tr>
<tr>
<td>Triluoperazine (Stelazine®)</td>
<td>Quetiapine (Seroquel*/Seroquel XR*)</td>
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</table>

#### SEDATIVE/HYPNOTICS

<table>
<thead>
<tr>
<th>Benzodiazapines*</th>
<th>Estazolam (Prosom*)</th>
<th>Flurazepam (Dalmane®)</th>
<th>Midazolam (Versed®)</th>
<th>Quazepam (Doral®)</th>
<th>Temazepam (Restoril®)</th>
<th>Triazolam (Halcion®)</th>
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<tbody>
<tr>
<td>“Z” Drugs</td>
<td>Eszopiclone (Lunesta®)</td>
<td>Zaleplon (Sonata®)</td>
<td>Zolpidem (Ambien*/Ambien CR*/Edluar*/Intermezzo*)</td>
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Barbiturates
# ANTIDEPRESSANTS

<table>
<thead>
<tr>
<th>Tricyclics</th>
<th>OPIOIDS</th>
<th>Opiate Agonists Anti-Diarrheal</th>
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<tbody>
<tr>
<td>Amitriptyline (Elavil®)</td>
<td><strong>Opia Agonist Analgesics</strong></td>
<td>Diphenoxylate (Lomotil®/Lonox®)</td>
</tr>
<tr>
<td>Amitriptyline &amp; Perphenazine (Triavil®)*</td>
<td>Alfentanil</td>
<td>Diphenoxin (Motofen®)</td>
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<tr>
<td>Amitriptyline &amp; Chlordiazepoxide*</td>
<td>Belladonna + Opium</td>
<td>Opium Tincture (Paregoric®)</td>
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<tr>
<td>Amoxapine (Asendin®)</td>
<td>Codeine (and codeine-containing products)</td>
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<tr>
<td>Clomipramine (Anafranil®)</td>
<td>Fentanyl (Abstral®, Actiq®, Duragesic®)</td>
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<tr>
<td>Desipramine (Norpramin®)</td>
<td>Fenotra®, Ionsys®/Lazanda®, Subsys®)</td>
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<tr>
<td>Doxepin (Adapin®, Sinequan®, Silenor®)*</td>
<td>Hydrocodone (Vicodin®, Norco®,</td>
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<tr>
<td>Imipramine (Tofranil®)</td>
<td>Ibudone®, Hysingla®, Reprexain®,</td>
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<tr>
<td>Nortriptyline (Pamelor®)</td>
<td>Vicoprofen®, Xylon®, Zohydro®)</td>
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<td>Protriptyline (Vivactil®)</td>
<td>Hydromorphone (Dilaudid®, Exalgo®)</td>
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<tr>
<td>Trimipramine (Surmontil®)</td>
<td>Meperidine (Demerol®)</td>
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<tr>
<td><strong>Selective Serotonin Reuptake Inhibitors – SSRIs</strong></td>
<td>Methadone (Dolophine®, Methadose®)</td>
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<tr>
<td>Citalopram (Celexa®)</td>
<td>Morphine (Arymo®, Astramorph PF®,</td>
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<tr>
<td>Escitalopram (Lexapro®)</td>
<td>Depodur®, Duramorph PF®, Infumorph®,</td>
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<tr>
<td>Fluoxetine (Prozac®)</td>
<td>Kadian®, Morphabond®, MS Cont®/</td>
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<tr>
<td>Fluvoxamine (Luvox®)</td>
<td>Embeda®</td>
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<tr>
<td>Olanzapine &amp; Fluoxetine (Symbyax®)*</td>
<td>Levorphanol (Levo-dromoran®)</td>
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<td>Paroxetine (Paxil®/Paxil CR®)</td>
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<td>Sertraline (Zoloft®)</td>
<td>Roxicodone (Tvampza®)</td>
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<tr>
<td>Vilazodone (Viibryd®)</td>
<td>Oxymorphone (Opana®)</td>
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<tr>
<td>Vortioxetine (Brintellix®)</td>
<td>Remifentanil</td>
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<td></td>
<td>Sufentanil (Sufenta®)</td>
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<td></td>
<td>Tramadol (Conzip®, Theratramadol®,</td>
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<td></td>
<td>Ultram®</td>
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<thead>
<tr>
<th>Mixed Opiate Agonists/Antagonists Analgesics</th>
<th>Opioid Agonists Substance Abuse</th>
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<tbody>
<tr>
<td>Buprenorphine (Belbuca®, Bunavail®,</td>
<td>Methadone (Dolophine®, Methadose®)</td>
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<tr>
<td>Butrans®, Probuphine®, Sublocade®, Suboxone®, Zubsolv®</td>
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<tr>
<td>Butorphanol (Stadol®)</td>
<td></td>
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<tr>
<td>Nalbuphine (Nubain®)</td>
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<tr>
<td>Pentazocine (Talwin®)</td>
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<table>
<thead>
<tr>
<th>Mixed Opiate Agonists/Antagonists Substance Abuse Agents</th>
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<tbody>
<tr>
<td>Buprenorphine (Probuphine®)</td>
<td></td>
</tr>
<tr>
<td>Buprenorphine + Naloxone (Suboxone®, Zubsolv®)</td>
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</table>
Step 3: Monitor and Evaluate

• Monitor patients’ responses to dose reductions

• Clean up diagnoses if possible
  › May need to ask family about mental health history

• Evaluate new patient admissions for antipsychotic medication orders
  › Do we know the diagnosis for use?

• The goal is not to eliminate use completely from facility, but to decrease use rate

• Some patients may demonstrate continued need
  › Lowest possible effective dose
One Home’s Journey

Total antipsychotic medication reduction of 25 percent in six months
January Data

• Identification of residents with orders for antipsychotics — used homemade Excel tracking form

• Baseline established with the information:
  › 46 orders for Antipsychotics (APs)
  › 19 orders were as needed (PRN)
  › 37 unique patients (five on hospice)
  › Average daily census = 134
  › Antipsychotic usage rate: 27.6 percent

• Worked with consultant pharmacist and medical director
March Data

- Tracking continued on the Excel spreadsheet
- March results:
  - Total AP orders decreased 19.1 percent to 37
  - PRN AP orders decreased 52.6 percent to nine
  - Total unique patients decreased 18.9 percent to 30
  - AP use rate decreased by 19.9 percent to 22.1 percent
June Data

• Use of spreadsheet continued
  › Total AP orders increased from March 2 percent to 38
  › PRN AP orders increased from March by 44 percent to 13
  › Unique patients decreased from March 6 percent to 28
  › Hospice prescriptions increased 150 percent to five
  › AP usage percentage decreased 6.3 percent to 20.7 percent

  › Overall six-month PRN AP usage decreased 31.5 percent
  › Overall six-month total AP usage decreased 25 percent
Potentially Helpful Resources
Antipsychotic de-prescribing

What are antipsychotics?
Antipsychotics are a class of drugs used to treat behavioral and psychological symptoms of dementia (BPSD), such as hallucinations, aggression, and agitation. They are also used to treat psychiatric conditions such as bipolar disorder and schizophrenia. More recently, they have started to be used to treat insomnia.

There are many different types of antipsychotic drugs:
- Chlorpromazine
- Haloperidol (Haldol®)
- Loxapine (Meeva®)
- Olanzapine (Zyprexa®)
- Quetiapine (Seroquel®)
- Risperidone (Risperdal®)
- Glycine (Glycin®)

Why use less of, stop, or change antipsychotics?
Antipsychotics can cause dry mouth, dizziness, balance problems, spasms, tremors, jerky movements, falls, and fatigue. They may increase the risk of bladder infections, weight gain, diabetes, heart attacks, strokes, and death. The chance of side effects may be higher the longer the antipsychotic is used and as people get older.

People need to weigh the benefits of continuing the antipsychotic with the risks of these side effects.

Reducing or stopping antipsychotics once BPSD has been treated for more than three months and symptoms are under control, or there has been no response to therapy, has been shown to be feasible and safe. There is little evidence that antipsychotics are useful or safe for insomnia.

Therefore, because antipsychotics can cause side effects, it is reasonable to try and reduce the dose or stop taking them if BPSD symptoms are under control, or if antipsychotics are prescribed for insomnia.

Stopping an antipsychotic is not for everyone
Some patients need to continue taking their antipsychotic drug for a very specific reason. Never reduce or stop an antipsychotic without your doctor's advice.

People who may need to continue an antipsychotic include those with any of the following:
- Schizophrenia
- Schizoaffective disorder
- Bipolar disorder
- Acute delirium
- Tourette's syndrome
- Tic disorders
- Autism
- Less than 3 months duration of psychosis in dementia

How to safely reduce an antipsychotic
People who have been taking an antipsychotic for BPSD for at least 3 months, or people who have been taking an antipsychotic for insomnia, should talk to their health care provider about whether stopping the antipsychotic is the right choice for them.

Doctors, nurse practitioners or pharmacists can help to decide on the best approach to using less of an antipsychotic. They can advise on how to reduce the dose, change medications, or what to stop it altogether.

They can also give advice on how to use non-drug approaches that can help manage BPSD symptoms or insomnia.

For BPSD symptoms, slowly reducing the dose of an antipsychotic over several weeks is recommended. This allows health care providers to carefully monitor for any return of symptoms. If used in low doses for insomnia, antipsychotics can be stopped completely without first reducing the dose.

Your QIN-QIO: www.tmfqin.org
Set up your free account and join the networks

Nursing Home Quality Improvement

Welcome

As a member of Nursing Home Quality Improvement, you have access to the latest news, resources, learning opportunities and forum discussions. Read an overview of the Nursing Home Quality Improvement project (PDF) for information about our purpose and goals.

Click these resource buttons to view specific resources for these categories.
## Tools and Resources

### Reducing Antipsychotic Medication Use

**Individualized music program associated with improved outcomes for U.S. nursing home residents with dementia**

This study compares improvement outcomes before and after the implementation of an individualized music program MUSIC & MEMORY (M&M), designed to address the behavioral and psychological symptoms of dementia (BPSD). The results offer evidence that the M&M individualized music program is associated with reductions in antipsychotic medication use, anxiolytic medication use and BPSD symptoms among long-stay nursing home residents with Alzheimer’s disease and related dementias.

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<tr>
<th>Web link</th>
<th>Date Added: 09/14/2017</th>
<th>Date Last Modified: 09/12/2017</th>
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### VA Resources for PTSD

This link to the National Center for Post-Traumatic Stress Disorder (PTSD) website has extensive information, resources and training on PTSD and trauma.

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<thead>
<tr>
<th>Web link</th>
<th>Date Added: 09/15/2017</th>
<th>Date Last Modified: 09/12/2017</th>
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### Antipsychotic Medication Reference

Providing information about antipsychotic (AP) medication indications, appropriate age groups, off-label uses, side effects, adverse effects and black box warnings, this medication reference guide is a useful reference in prescribing and monitoring antipsychotic medication.

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<thead>
<tr>
<th>Adobe PDF</th>
<th>Date Added: 05/31/2018</th>
<th>Date Last Modified: 05/30/2018</th>
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### MDS Tip Sheet - Antipsychotics (Long-Stay)

This Minimum Data Set (MDS) tip sheet will assist in correctly documenting antipsychotic medication use.

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<tr>
<th>Adobe PDF</th>
<th>Date Added: 09/29/2017</th>
<th>Date Last Modified: 09/27/2017</th>
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### Hand in Hand: A Training Series for Nursing Homes Toolkit

This toolkit, developed by the Centers for Medicare & Medicaid Services (CMS), focuses on providing nurse aides quality training on abuse prevention and person-centered care of...
Closing thoughts

• Why do we want to use antipsychotic medications in our elderly patients with dementia?

• What are our alternatives and are they effective?

• Are we having conversations with our hospitals about antipsychotic use?

• Do we need more information about how to identify and possibly treat delirium?

• What kinds of outcomes will we see with fewer antipsychotic medications?
  › Quality measures? Fewer falls? More smiles?
Questions?

Hennie Garza, MS Pharm, RPh
Project Director, Pharmacist
TMF Quality Innovation Network

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www.TMFQIN.org