



LESS SEDATIVES FOR YOUR OLDER RELATIVES

**A toolkit for reducing inappropriate use of
benzodiazepines and sedative-hypnotics
among older adults in hospitals**

Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.

Canadian Geriatrics Society,
Choosing Wisely Canada recommendation #2

Canadian Society for Hospital Medicine,
Choosing Wisely Canada recommendation #3

Don't routinely continue benzodiazepines initiated during an acute care hospital admission without a careful review and plan of tapering and discontinuing, ideally prior to hospital discharge.

Canadian Psychiatric Association,
Canadian Academy of Geriatric Psychiatry,
Canadian Academy of Child and Adolescent Psychiatry,
Choosing Wisely Canada recommendation #9

Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia.

Canadian Psychiatric Association,
Canadian Academy of Geriatric Psychiatry,
Canadian Academy of Child and Adolescent Psychiatry,
Choosing Wisely Canada recommendation #13

Don't continue medications that are no longer indicated or where the risks outweigh the benefits.

Don't use a medication for long-term risk reduction if life expectancy is shorter than the time-to benefit of the medication.

Canadian Society of Hospital Pharmacists,
Choosing Wisely Canada recommendation #1

Don't routinely prescribe benzodiazepines or other sedative-hypnotics for promotion of sleep without first a trial of non-pharmacologic interventions.

Canadian Society of Hospital Pharmacists,
Choosing Wisely Canada recommendation #5

Don't prescribe or dispense benzodiazepines without building a discontinuation strategy into the patient's treatment plan (except for patients who have a valid indication for long-term use).

Canadian Pharmacists Association,
Choosing Wisely Canada recommendation #6



Inspiration for this Toolkit

At Sinai Health System in Toronto, 15.9% of patients who were not previously on benzodiazepines or other sedative hypnotics (BSH-naïve patients) were prescribed these medications during their hospital stay. Of these, 87% were inappropriately prescribed for insomnia. A multi-disciplinary team was established consisting of physicians, nurses, pharmacists and administrators, with the goal of reducing the monthly proportion of BSH-naïve inpatients prescribed a new BSH for sleep by 20% in one year. The initiative consisted of physician and nurse education, order set changes to improve appropriate prescribing, and the creation of a sleep-friendly environment. During the implementation period between September 2015 and July 2016, the rate of BSH-naïve patients who were prescribed these medications declined from 15.9% to 8.9%, a 44% decrease.

References:

Pek EA, MD, Remfry A, Pendrith C, et al. High prevalence of inappropriate benzodiazepine and sedative hypnotic prescriptions among hospitalized older adults. *J. Hosp. Med* 2017;5;310-316.

Soong C, Burry L, Cho HJ, et al. An Implementation Guide to Promote Sleep and Reduce Sedative-Hypnotic Initiation for Noncritically Ill Inpatients. *JAMA Intern Med*. Published online June 03, 2019;179(7):965–972.

Fan-Lun C, Chung C, Lee EHG, et al Reducing unnecessary sedative-hypnotic use among hospitalised older adults *BMJ Quality & Safety* Published Online First: 03 July 2019.

This toolkit was co-authored by Dr. Christine Soong, who led the initiative at Sinai Health System.



Introduction

This toolkit was created to support the implementation of interventions designed to reduce unnecessary use of benzodiazepines or other sedative-hypnotics (BSH) among older adults (age 65 and above) in your hospital. It can be used by physician groups, clinical services or organizations to help achieve significant reductions in overuse of BSH.

In order to select the most appropriate intervention, it is important to understand the main driver of inappropriate BSH use on your clinical service or institution. The most common reasons for BSH overuse are related to managing insomnia, delirium and agitation in hospital.

Based on the experience in your institution, this toolkit is suitable if the problem is that BSH are initiated to manage insomnia in hospital.



Make sure this toolkit is right for you

This toolkit is well suited for your institution, if you have confirmed that overuse of BSH is largely related to sleep management. Prior studies suggest that more than a quarter of hospitalized patients receive BSH for sleep, the majority of whom are naïve users. Patients who receive new prescriptions for BSH after leaving hospital are at increased risk of becoming dependent on this medication for sleep. Use of BSH is associated with preventable harm such as falls, fractures, and delirium.^{1,2}



Key ingredients of this intervention

This module may help your institution reduce BSH overuse by introducing the following changes:

- 1) Establish an interprofessional team and engage stakeholders
- 2) Create a consensus criteria for appropriate indications for BSH initiation
- 3) Implementing non-pharmacological strategies to promote sleep
- 4) Restrict initiation of BSH

It is important to establish steps #1-3 prior to moving on to #4. Creating an environment conducive to sleep has been shown to be effective at reducing BSH requests.^{3,4}



1) Establish an interprofessional team

A successful implementation team is a key factor in driving change and involves a group of multi-disciplinary participants representing all stakeholder groups. Key stakeholders to include on the team are: geriatricians, psychiatrists or geriatric psychiatrists, inpatient physicians (internists and hospitalists), nurses, pharmacists and patients and families.

Engaging nurses in promoting sleep

Nurse input and appreciation of the negative impact of poor sleep is essential to ensure that the hospital environment is optimized to support sleep. To engage nurse managers and front-line nurses, this intervention should be promoted as empowering them to play a more active role in creating a safe environment for older adults, rather than creating additional work for them. Designating sleep champions to foster unit-driven culture change can be an effective method to achieve desired results.

Engaging pharmacists in reducing inappropriate BSH initiation

Pharmacist input is extremely valuable in reducing unnecessary BSH use. Pharmacists can identify inappropriate prescriptions for BSH and provide education for patients and caregivers on safer alternatives. Structured medication reviews can be an effective strategy to reduce inappropriate BSH prescriptions.

2) Achieving consensus regarding appropriate indications for BSH

Achieving consensus among clinicians regarding the appropriate indications for BSH is a crucial step in the development of interventions to reduce BSH use. Inpatient physicians, geriatricians, geriatric psychiatrists, nurses and pharmacists should be engaged in creating a consensus criteria for BSH use.

Suggested criteria for appropriate clinical indications for benzodiazepine initiation among hospitalized patients.⁵

- Acute management of seizure disorder
- Alcohol and/or drug withdrawal
- Severe aggression posing imminent physical risk to patients and/or healthcare professional (excluding non-alcohol withdrawal related delirium)
- Pre-procedural sedation
- Severe generalized anxiety disorder unresponsive to other therapies
- Acute management of panic attack

Experts recommend considering pharmacological agents for sleep when non-pharmacological strategies have failed **and** when insomnia is negatively impacting the patient's daytime function. If BSH is initiated for sleep, consider the following principles:

- 1) Start at the lowest possible dose*
- 2) Use for the shortest possible duration* (consider one-time dose followed by close monitoring of effects)
- 3) Monitor for adverse effects (such as delirium, excessive daytime sleepiness due to "hangover effect")

*The optimal drug and dosing is unknown.

To adequately engage physicians and providers in discussion, the improvement team needs to ensure that clinicians recognize that their input is necessary to ensure safe sleep strategies in hospital. The ultimate goal is to achieve consensus between all stakeholders of your patient care area before proceeding to the next step.

3) Non-pharmacological strategies to support sleep in hospital

Once interprofessional clinician consensus has been reached regarding the criteria for appropriate BSH initiation, and stakeholders have been engaged in the process, a unit or hospital wide plan to create a sleep-friendly environment is key to success. Without this critical step, insomnia will continue to negatively impact patients, leading to further BSH use. Hospital administrative leaders, and inter-departmental stakeholders must be engaged for this stage to be successful.

Minimize interruptions

Hospital environments are disruptive to sleep. Multiple interruptions to restful sleep at night include medication administration, clinical monitoring, transfer of patients in/out of wards and early morning blood work. Creating a hospital environment conducive to sleep has been associated with a decrease in BSH prescriptions by half.³

Steps to implementation:

- a) Reduce frequency of vital checks and medication administration overnight. When possible, consider default medication administration times to allow a minimum of 6-8 hours of uninterrupted sleep time. Similarly, vital sign monitoring frequency for most (non-critically ill) ward patients can be reduced during sleep hours.
- b) Consider unit or hospital-wide default vital sign monitoring and medication administration times. Engage pharmacy, nursing, and senior leadership to create new policies to hard-wire practices and ensure changes are sustained.
- c) Engage necessary stakeholders such as the laboratory, physicians, nurses and informatics to modify the pre-set distribution of morning blood work requisitions.

Promote sleep

Using non-pharmacological strategies to improve sleep reduces BSH use.⁴ Strong nurse leadership and organizational support is necessary to ensure successful culture change.

Steps to implementation:

- a) Establish “Quiet sleep time” routine and limit disruptions such as use of cleaning equipment (e.g., “Zamboni” floor cleaners, vacuums), loud conversations in shared areas, unit paging and alarm systems.
- b) Modify ambient lighting, temperature control – automated lights off in patient rooms, use of flashlights by healthcare personnel. Consider under-bed lighting, motion-censored night lights.
- c) Consider positioning patient near window, if possible.
- d) Address medical conditions associated with poor sleep such as pain, infection, prolonged NPO/fasting duration, distressing symptoms such as constipation, urinary retention, shortness of breath, or symptomatic conditions such as obstructive sleep apnea, benign prostatic hypertrophy, heart failure, gastroesophageal reflux disease.
- e) Provide aides to facilitate sleep (such as eye masks, ear plugs, non-caffeinated warm beverages, warm blankets)
- f) Engage and empower patients and caregivers in advocating for strategies that support the patient’s usual nighttime routine and other non-pharmacological strategies to promote sleep (such as calming music, reducing caffeinated food products after morning).

Respond to patients’ needs

Individualized care plans may be useful in achieving better sleep among select patients in hospital. Patients with dementia and behavioural issues will need tailored plans to address each behaviour. Engaging specialists such as geriatric psychiatrists, geriatricians and nurses

with specialty in gerontology can help your team create safe care plans to address patient needs.

Steps to implementation:

- a) Develop individualized care plans to address responsive behaviours or sleep cycle symptoms associated with dementia or delirium (see [Alberta Guideline on the Appropriate Use of Antipsychotic \(AUA\) Medications](#) (2013)).
- b) Actively engage patients in activity during the day (i.e., “wake therapy”) and minimize daytime sleeping
- c) Create routines for bedtime (e.g., continence care; toileting prior to bed)
- d) Address needs (temperature control, hunger, medications that affect sleep such as diuretic use)

Now that you have achieved consensus on appropriate BSH use, engaged nurses and pharmacists and created a sleep-friendly environment, you are now ready to actively reduce BSH initiation in hospital.

4) Restrictive initiation of BSH

The following are specific components of interventions that can reduce BSH initiation. Depending on the root causes of over-prescribing in your setting, some or all aspects can be deployed.

Education

Physician, patient/caregiver and nursing education can reduce initiation of BSH for sleep. This includes education on non-pharmacological sleep strategies and restrictive BSH use. Specific education targeting prescribers on the harms of BSH may be effective at dispelling the commonly held belief that z-drugs (such as Zopiclone/Imovane) are “safe” sedatives. Educational strategies include case-based learning modules, and expert-led seminars or rounds. Clinicians of all disciplines should be targeted, including physicians, nurses, pharmacists, and other inter-professional healthcare providers. Providing alternatives such as melatonin may be appropriate.

Pre-printed or electronic order set review

Order set review can uncover routine orders for BSHs and an opportunity to reducing initiation. Any routine orders for BSH for the indication of insomnia should be reviewed and removed. The key is to ensure that patients experiencing sleep disturbances are clinically assessed and non-pharmacological strategies optimized prior to considering initiation of pharmacological agents.

Pharmacy medication reviews

Pharmacy medication reviews can be an effective method to apply the consensus criteria in patients who have received BSHs. Pharmacists and/or other experts such as geriatricians or geriatric psychiatrists are excellent resources to provide real-time BSH reviews with clinician teams to ensure appropriate use through stewardship. In addition, patients who are pre-prescribed BSHs in the community without indication, may be appropriate candidates for home deprescribing interventions. Partnering with primary care providers is one effective strategy to ensure on-going deprescribing efforts. For stable patients who will be in hospital for prolonged periods awaiting discharge planning, it may be appropriate to initiate a deprescribing strategy.

Developed by a team of pharmacists, family physicians, specialists and medical researchers through the [Canadian Deprescribing Network](#), the following deprescribing algorithm can help you decide when and how to reduce benzodiazepines safely.



Why is patient taking a BZRA?

If unsure, find out if history of anxiety, past psychiatrist consult, whether may have been started in hospital for sleep, or for grief reaction.

- Insomnia on its own OR insomnia where underlying comorbidities managed
For those ≥ 65 years of age: taking BZRA regardless of duration (avoid as first line therapy in older people)
For those 18-64 years of age: taking BZRA > 4 weeks

- Other sleeping disorders (e.g. restless legs)
- Unmanaged anxiety, depression, physical or mental condition that may be causing or aggravating insomnia
- Benzodiazepine effective specifically for anxiety
- Alcohol withdrawal

Engage patients (discuss potential risks, benefits, withdrawal plan, symptoms and duration)

Recommend Deprescribing

- Continue BZRA**
- Minimize use of drugs that worsen insomnia (e.g. caffeine, alcohol etc.)
 - Treat underlying condition
 - Consider consulting psychologist or psychiatrist or sleep specialist

Taper and then stop BZRA

(taper slowly in collaboration with patient, for example ~25% every two weeks, and if possible, 12.5% reductions near end and/or planned drug-free days)

- For those ≥ 65 years of age (strong recommendation from systematic review and GRADE approach)
- For those 18-64 years of age (weak recommendation from systematic review and GRADE approach)
- Offer behavioural sleeping advice; consider CBT if available (see reverse)

Monitor every 1-2 weeks for duration of tapering

Expected benefits:

- May improve alertness, cognition, daytime sedation and reduce falls

Withdrawal symptoms:

- Insomnia, anxiety, irritability, sweating, gastrointestinal symptoms (all usually mild and last for days to a few weeks)

Use non-drug approaches to manage insomnia

Use behavioral approaches and/or CBT (see reverse)

If symptoms relapse:

Consider

- Maintaining current BZRA dose for 1-2 weeks, then continue to taper at slow rate

Alternate drugs

- Other medications have been used to manage insomnia. Assessment of their safety and effectiveness is beyond the scope of this algorithm. See BZRA deprescribing guideline for details.

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Pottie K, Thompson W, Davies S, Grenier J, Sadowski C, Welch V, Holbrook A, Boyd C, Swenson JR, Ma A, Farrell B. Evidence-based clinical practice guideline for deprescribing benzodiazepine receptor agonists. Can Fam Physician 2018;64:339-51 (Eng), e209-24 (Fr)

This algorithm and accompanying advice support recommendations in the NICE guidance on the use of zaleplon, zolpidem and zopiclone for the short-term management of insomnia, and medicines optimisation. National Institute for Health and Care Excellence, February 2019



BZRA Availability

BZRA	Strength
Alprazolam (Xanax®) †	0.25 mg, 0.5 mg, 1 mg, 2 mg
Bromazepam (Lectopam®) †	1.5 mg, 3 mg, 6 mg
Chlordiazepoxide ^c	5 mg, 10 mg, 25 mg
Clonazepam (Rivotril®) †	0.25 mg, 0.5 mg, 1 mg, 2 mg
Clorazepate (Tranxene®) ^c	3.75 mg, 7.5 mg, 15 mg
Diazepam (Valium®) †	2 mg, 5 mg, 10 mg
Flurazepam (Dalmane®) ^c	15 mg, 30 mg
Lorazepam (Ativan®) †, ^s	0.5 mg, 1 mg, 2 mg
Nitrazepam (Mogadon®) †	5 mg, 10 mg
Oxazepam (Serax®) †	10 mg, 15 mg, 30 mg
Temazepam (Restoril®) ^c	15 mg, 30 mg
Triazolam (Halcion®) †	0.125 mg, 0.25 mg
Zopiclone (Imovane®, Rhovane®) †	5mg, 7.5mg
Zolpidem (Sublinox®) ^s	5mg, 10mg

T = tablet, C = capsule, S = sublingual tablet

BZRA Side Effects

- **BZRAs have been associated with:**
 - physical dependence, falls, memory disorder, dementia, functional impairment, daytime sedation and motor vehicle accidents
- **Risks increase in older persons**

Engaging patients and caregivers

Patients should understand:

- The rationale for deprescribing (associated risks of continued BZRA use, reduced long-term efficacy)
- Withdrawal symptoms (insomnia, anxiety) may occur but are usually mild, transient and short-term (days to a few weeks)
- They are part of the tapering plan, and can control tapering rate and duration

Tapering doses

- No published evidence exists to suggest switching to long-acting BZRAs reduces incidence of withdrawal symptoms or is more effective than tapering shorter-acting BZRAs
- If dosage forms do not allow 25% reduction, consider 50% reduction initially using drug-free days during latter part of tapering, or switch to lorazepam or oxazepam for final taper steps

Behavioural management

Primary care:

1. Go to bed only when sleepy
2. Do not use bed or bedroom for anything but sleep (or intimacy)
3. If not asleep within about 20-30 min at the beginning of the night or after an awakening, exit the bedroom
4. If not asleep within 20-30 min on returning to bed, repeat #3
5. Use alarm to awaken at the same time every morning
6. Do not nap
7. Avoid caffeine after noon
8. Avoid exercise, nicotine, alcohol, and big meals within 2 hrs of bedtime

Institutional care:

1. Pull up curtains during the day to obtain bright light exposure
2. Keep alarm noises to a minimum
3. Increase daytime activity & discourage daytime sleeping
4. Reduce number of naps (no more than 30 mins and no naps after 2 pm)
5. Offer warm decaf drink, warm milk at night
6. Restrict food, caffeine, smoking before bedtime
7. Have the resident toilet before going to bed
8. Encourage regular bedtime and rising times
9. Avoid waking at night to provide direct care
10. Offer backrub, gentle massage

Using CBT

What is cognitive behavioural therapy (CBT)?

- CBT includes 5-6 educational sessions about sleep/insomnia, stimulus control, sleep restriction, sleep hygiene, relaxation training and support

Does it work?

- CBT has been shown in trials to improve sleep outcomes with sustained long-term benefits

Who can provide it?

- Clinical psychologists usually deliver CBT, however, others can be trained or can provide aspects of CBT education; self-help programs are available

How can providers and patients find out about it?

- Some resources can be found here: <https://mysleepwell.ca/>

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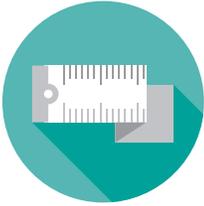
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This algorithm and accompanying advice support recommendations in the NICE guidance on the use of zaleplon, zolpidem and zopiclone for the short-term management of insomnia, and medicines optimisation. National Institute for Health and Care Excellence, February 2019



deprescribing.org





Measuring your performance

Choose a family of measures

1) Outcome measures: These are the main improvement outcomes that you are trying to achieve. An example is the proportion of BSH-naïve patients who receive a new prescription for BSH for sleep while in hospital. While this measure helps to reduce a patient's exposure to potential harm, you may also wish to track the number of patients who actually receive a sleep aid. Other clinical outcome(s) of interest:

- Falls
- Delirium
- Sleep quality (consider administering sleep surveys)

2) Process measures: These measures are developed to ensure that each aspect of the intervention is being carried out and delivered as intended. Examples include: proportion of providers who received an educational intervention to reduce BSH prescribing; proportion of eligible patients who receive appropriate pharmacy medication review

3) Balancing measures: Any intervention may create new unintended consequences that need to be measured. Examples include: occurrence of any inappropriate abrupt discontinuation of chronic pre admission BSH prescriptions; withdrawal incidents, prescription rates of other sedating medications (e.g., quetiapine, trazodone, dimenhydramine)

Determine a collection method

There are many ways to measure BSH use in your institution. The first step is to decide on the measurement tool:

1) Chart audits:

- a) Count the number of patients prescribed BSH at home (A)
- b) Count the number of patients prescribed any BSH for sleep in hospital, excluding patients who are home BSH users (B)
- c) Count the total number of patients in hospital during a given period (ie., 1 month) (C)
- d) Proportion of BSH-naïve patients receiving BSH for sleep = $B/(C-A)*100$
- e) These audits can be performed weekly or monthly by the improvement team or logged daily by front-line staff and plotted on a graph to visual effect over time and response to interventions

2) Electronic medication order entry:

- a) Institutions with computer physician order entry may have electronic pharmacy drug databases that can be queried to provide a list of patients prescribed BSHs while in hospital. This function can be useful in creating a drug database for the basis of focused chart reviews.



Sustaining early successes

Once the intervention to reduce BSH initiation has been implemented and refined resulting in significant reduction in BSH prescriptions, there are several important ways to help sustain this performance:

- Non-pharmacological strategies to promote sleep should become institutional policy. This information should be provided to all new nurses and physicians joining the institution.
- Posters of these indications can be created and displayed on inpatient units.



Additional Resources

Sleep and sedative reduction resources:

- 1) [Alberta Guideline on the Appropriate Use of Antipsychotic \(AUA\) Medications \(2013\)](#).
- 2) [Rx Files: Chronic insomnia in older adults](#).
- 3) [RNAO: Managing responsive behaviours](#).

QI resources:

- 1) Health Quality Ontario, QI Tools & Resources
<https://quorum.hqontario.ca/en/Home/QI-Tools-Resources/QI-Essentials>
- 2) Institute for Healthcare Improvement, Model for Improvement
<http://www.ihl.org/resources/Pages/HowtoImprove/default.aspx>



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