Maryland
DEPARTMENT OF HEALTH

PHARMACY
News & Views

SPRING 2026

Ensuring Appropriate Vaccine Administration: A Reminder for Pharmacists

Vaccines remain a critical public health tool, and pharmacists continue to play a vital role in improving access and protecting patient health. The Maryland Department of Health has released several provider communications and standing orders to preserve vaccine access and recommends that providers follow established, evidence-based clinical guidance for vaccinations.

Unintended duplicate vaccine administration may occur due to incomplete immunization assessments or failure to reverse claims when a vaccine is billed but not administered. Pharmacists are reminded to review the patient's immunization history in Immunet. Patients may access their immunization records electronically through MyIRMobile.

If a vaccine was billed but not administered (e.g., a patient scheduled an appointment but did not present for their appointment), the claim must be reversed promptly in accordance with COMAR 10.09.03.03. During audit reviews, inappropriately billed claims may be subject to recoupment and program integrity actions.

For more information, please see: https://bit.ly/4bnnCsf

A Dose of Doze: Managing Sleep Disorders in Practice

Sleep disorders impose a significant yet frequently underrecognized burden on patients, particularly those with multiple comorbid conditions. A 2024 survey by the U.S. Centers for Disease Control and Prevention (CDC) found that 38.7% of adults in Maryland reported averaging fewer than seven hours of sleep per night. Maryland county-level data are presented below.[1,2] Insomnia is the most prevalent sleep disorder, with estimates suggesting that one-third or more of U.S. adults experience difficulty sleeping or other symptoms of insomnia. Among these individuals, roughly 10% experience insomnia symptoms severe enough to result in daytime impairment such as irritability, inattention, or fatigue after waking.[1,3] In contrast, central disorders of hypersomnolence (CDH) such as narcolepsy and idiopathic hypersomnia are far rarer but equally impactful, with recent U.S. claims analyses estimating annual diagnosed prevalence at approximately 44 cases per 100,000 adults.[1] Despite its low prevalence, hypersomnia is associated with profound functional impairment, including persistent excessive daytime sleepiness, severe sleep inertia, and cognitive dysfunction.[3,4]

Sleep is divided into two types: rapid eye movement (REM) sleep and non-REM (NREM) sleep. NREM sleep consists of three stages that progress from light to deep sleep. Shortly after falling asleep, individuals enter stage 1 NREM, a transitional phase where they can be easily awoken. After a few minutes, this shifts to stage 2 NREM sleep, a deeper sleep stage that accounts for the largest portion of total sleep time when brain activity slows and eye movements stop. The next phase is stage 3 NREM, or slow-wave sleep. This is the deepest and most restorative stage and occurs predominantly in the first half of the night. A person awakened from stage 3 often feels disoriented or groggy due to sleep inertia, which can persist for up to 30 minutes. REM sleep becomes more prominent in the second half of the night, although brief REM periods alternate with NREM earlier in the sleep

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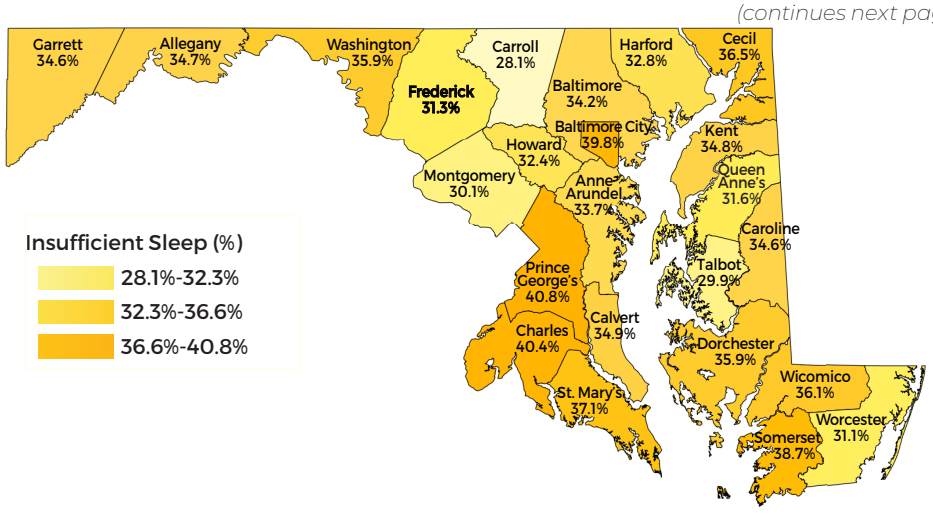
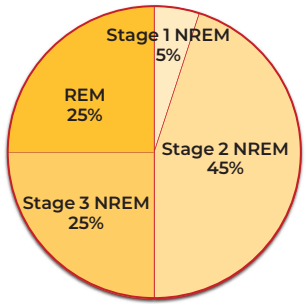


A Dose of Doze: Managing Sleep Disorders in Practice (continued)

period. REM is characterized by rapid eye movements, dreaming, and brain activity patterns similar to wakefulness, while most skeletal muscles are temporarily paralyzed. After REM sleep ends, a new sleep cycle typically restarts in stage 1 or stage 2 NREM. A normal sleep cycle takes 90 to 120 minutes, and healthy sleep consists of several cycles repeating throughout the night.[2,5]

NORMAL SLEEP PHASE DISTRIBUTION



Sleep disorders are diagnosed based on a combination of clinical symptoms and, when appropriate, objective testing. A sleep log is useful in evaluating nearly all sleep disorders, and several patient-administered questionnaires can further support diagnosis. Additional diagnostic tools such as overnight polysomnography, multiple sleep latency testing (MSLT), and actigraphy provide objective assessment of sleep architecture, circadian rhythm patterns, and the degree of daytime sleepiness.[1,4]

Untreated sleep disorders are not only disruptive and frustrating for patients but can also lead to significant health consequences. They are associated with mood disturbances such as irritability, depression, and reduced overall quality of life. Insufficient or poor-quality sleep increases the risk of motor vehicle and workplace accidents due to impaired attention and slowed reaction time. Chronic sleep disruption is also linked to cardiometabolic complications including hypertension, arrhythmias, heart disease, and stroke, as well as higher rates of all-cause mortality.[3]

Beyond insomnia and central disorders of hypersomnolence, the International Classification of Sleep Disorders (ICSD) identifies four other categories of sleep disorders including sleep-disordered breathing, circadian rhythm sleep–wake disorders, parasomnias, and sleep-related movement disorders, which are also prevalent but are not covered in this newsletter.[1,3]

Insomnia

The ICSD provides one framework for diagnosing and categorizing sleep disorders. According to the ICSD-3, a diagnosis of insomnia requires difficulty initiating sleep, maintaining sleep, or achieving restorative sleep despite having adequate opportunity to sleep. These nighttime symptoms must also be accompanied by daytime impairments, such as fatigue, reduced cognitive function, or mood disturbances. The ICSD further notes that the sleep disturbance and associated daytime symptoms must not be explained solely by another sleep disorder, medical or psychiatric condition, or medication or substance use. Insomnia is classified as chronic when symptoms occur at least three times per week and persist for three months or longer. Symptoms may remit and recur, often triggered by periods of increased stress, including medical illness, mental health challenges, or psychosocial stressors.[1,6]

The American Academy of Sleep Medicine (AASM) identifies the primary treatment goals for chronic insomnia as improving both sleep quality and sleep duration, as well as reducing insomnia-related daytime impairment.[7] Although good sleep hygiene is recommended for all patients, the AASM advises that sleep hygiene alone is insufficient and should not be used as a standalone treatment for chronic insomnia. Psychological and behavioral interventions are recommended as first-line

MEDICATIONS ASSOCIATED WITH INSOMNIA [1,4-11]

Medication Class	Examples	Notes
Alcohol (later in the night)	ethanol	Initially sedating but disrupts REM and causes early awakenings
Antiepileptics (select)	lamotrigine	May cause insomnia and vivid dreams in some
Beta agonists	albuterol, formoterol	CNS stimulation especially at higher doses
Corticosteroids	methylprednisolone, prednisone	Strong dose response relationship: morning dosing recommended
Decongestants	phenylephrine, pseudoephedrine	Sympathomimetic stimulation causes sleep difficulty
NDRIs	bupropion sr/xl	Activating antidepressant; avoid late day dosing
SSRIs/SNRIs	fluoxetine, sertraline, venlafaxine	Can increase insomnia and restlessness
Stimulants	amphetamine salts, methylphenidate	Used for ADHD; dose timing is important
Thyroid hormone	levothyroxine	Excess dosing increases metabolic activity and insomnia
Wake promoting agents	armodafinil, modafinil	May interfere with nighttime sleep

therapy for all adults with insomnia, regardless of age, comorbidities, or underlying cause. The most effective intervention is cognitive behavioral therapy for insomnia (CBT-I), which incorporates education about sleep regulation, stimulus control, sleep restriction therapy, and cognitive restructuring. Sleep diaries are used to guide treatment, which typically consists of 4 to 8 structured sessions.[8]

If behavioral interventions are unavailable, not tolerated, or not fully effective, pharmacologic therapy may be considered as an adjunct, with continued emphasis on behavioral treatment. Because much of the evidence for hypnotic medications is of low or moderate quality, the AASM makes conditional (weak) recommendations for several options, including the orexin receptor antagonist suvorexant, the melatonin receptor agonist ramelteon, short- or intermediate-acting benzodiazepines such as temazepam or triazolam, benzodiazepine receptor agonists ("Z-drugs") including eszopiclone, zaleplon, and zolpidem, and the low-dose tricyclic antidepressant doxepin.[7,9]

Other sedating medications such as quetiapine or trazodone are generally not recommended for the routine treatment of insomnia due to limited evidence and safety concerns but may be considered when treating patients for whom the primary therapeutic effect is also desirable. Over-the-counter sleep aids containing first-generation antihistamines or herbal/nutritional supplements such as melatonin or valerian are not recommended due to insufficient evidence of efficacy and limited safety data. Older agents historically used for insomnia, including barbiturates and chloral hydrate, are not recommended.

All sedative-hypnotic medications should be used at the lowest effective dose for the shortest necessary duration, with regular evaluation for tapering or discontinuation. CBT-I can support deprescribing efforts and should be considered for patients with chronic, refractory insomnia, including those on long-term hypnotic therapy.[7,9]

MEDICATIONS ASSOCIATED WITH SEDATION [1,4-11]

Medication Class	Examples	Notes
Anticonvulsants	gabapentin, pregabalin, topiramate	Often used for neuropathic pain; increases sleepiness
Antidepressants (sedating)	doxepin (low dose) mirtazapine, trazodone	Often used off label for insomnia
Antihistamines (1st generation)	diphenhydramine, doxylamine, hydroxyzine	Strong anticholinergic burden; common OTC sleep aid component
Antipsychotics	chlorpromazine, olanzapine, quetiapine	Sedation due to antihistaminic and
Benzodiazepines	clonazepam, lorazepan, temazepam	Significant sedation and psychomotor impairment
Beta blockers (lipophilic)	propranolol	May cause fatigue and sedation in some patients
Muscle relaxants	baclofen, cyclobenzaprine, tizanidine	Stronger sedation when combined with other CNS depressants
Non-benzodiazepine hypnotics	eszopiclone, zaleplon, zolpidem	Residual next day sedation risk, especially in older adults
Opioids	hydrocodone, morphine, oxycodone	Can cause sedation and respiratory depression
Wake promoting agents	armodafinil, modafinil	May interfere with nighttime sleep

Central Disorders of Hypersomnolence (CDH)

CDH include several conditions characterized by excessive daytime sleepiness (EDS), with narcolepsy type 1 (NT1) and narcolepsy type 2 (NT2) being the most common. According to the ICSD-3, a diagnosis of NT1 requires daily EDS for at least three months and one or both of the following: 1) cataplexy (loss of muscle tone provoked by intense emotions, such as laughter) and mean sleep latency ≤8 minutes and ≥2 sleep-onset REM periods (SOREMP) on MSLT diagnostic testing OR SOREMP within 15 minutes of sleep onset on a nocturnal polysomnogram or 2) low CSF hypocretin-1 concentration. NT2 presents with the same EDS and MSLT findings as NT1; however, cataplexy is absent, CSF hypocretin-1 levels are normal, and symptoms cannot be better explained by another sleep disorder, medication, or substance use.[6,10] Both NT1 and NT2 are also associated with sleep paralysis and hypnagogic hallucinations, which are vivid sensory experiences during transitions into or out of sleep.[4]

The AASM recommends several pharmacologic options for adults with narcolepsy, including the wake-promoting agent modafinil, histamine H3 receptor antagonist inverse agonist pitolisant, gamma-hydroxybutyrate derivative sodium oxybate, and the norepinephrine–dopamine reuptake inhibitor solriamfetol. Conditional recommendations are made for armodafinil, dextroamphetamine, and methylphenidate, largely due to limited quantity or quality of supporting evidence. All recommended agents have demonstrated clinically meaningful reductions in EDS and narcolepsy severity. Additionally, pitolisant and sodium oxybate have shown benefit for cataplexy, while modafinil and solriamfetol have each demonstrated improvements in quality of life.[10]

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Dose of Doze (continued)

See a patient-friendly guide to healthy sleep: https://bit.ly/3PBR6uU

Although pharmacotherapy is the primary treatment approach for narcolepsy, lifestyle strategies remain essential to optimize outcomes and safety. These include maintaining a consistent sleep–wake schedule, incorporating scheduled daytime naps, avoiding situations where severe sleepiness could pose safety risks (e.g., driving), and requesting reasonable workplace accommodations to support these behavioral strategies.[3,10]

In conclusion, sleep disorders are highly prevalent, often underrecognized, and closely linked to overall health, making their identification and management essential across all areas of clinical practice. Pharmacists are uniquely positioned to identify medications contributing to sleep disturbances, evaluate underlying risk factors, and support appropriate management. By incorporating routine sleep assessment, thoughtful medication review, and patient-centered education into daily care, clinicians can significantly improve patients' functioning, safety, and long-term well-being.

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