

Agitation Associated With Dementia Due To Alzheimer's Disease In The Long-Term Care (LTC) Setting



October 2025 US.PSY.D.25.00032

This program is paid for by
Otsuka Pharmaceutical Development
& Commercialization, Inc. (OPDC).

Speakers are employees and/or paid
consultants of Otsuka Pharmaceutical
Development & Commercialization, Inc.

Objectives



Define agitation associated with dementia due to Alzheimer's disease including the symptoms and prevalence across care settings



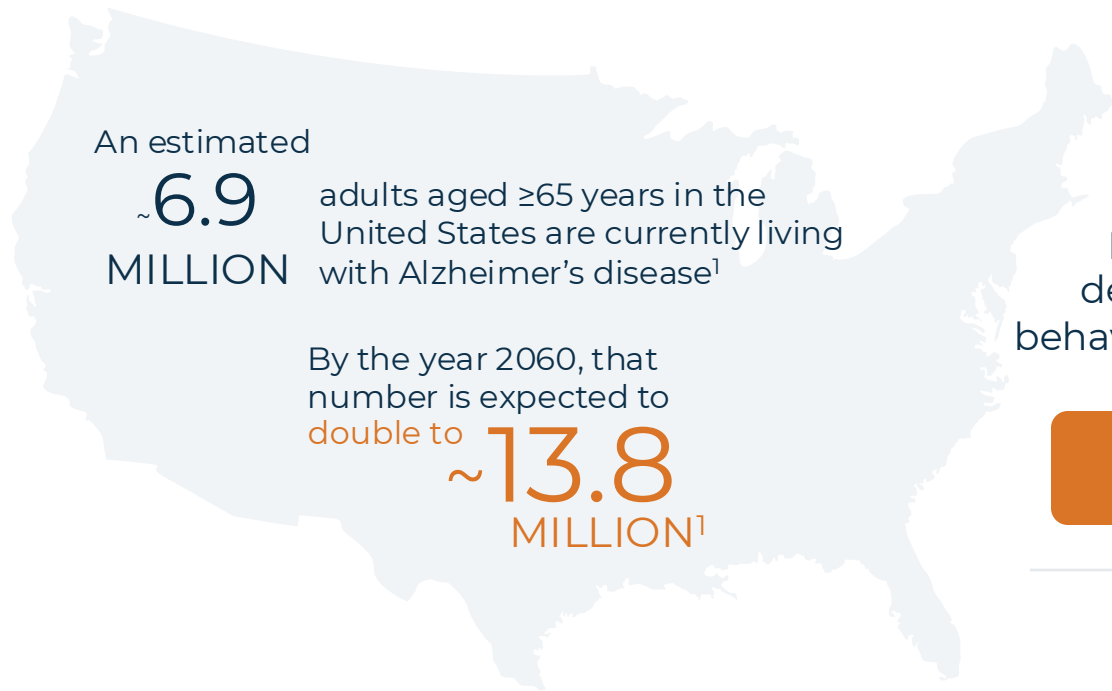
Discuss the impact of agitation on LTC residents and caregivers, the medical burden associated with managing agitated behaviors, and the risk of caregiver burnout



Review tools and clinical assessments used to identify agitation associated with dementia due to Alzheimer's disease and outline person-centered treatment planning with non-pharmacological and pharmacological interventions

LTC, long-term care.

Alzheimer's Dementia Is Highly Prevalent And Predicted To Increase Over Time¹



People with Alzheimer's dementia can experience behavioral and psychological conditions, with

agitation being one of the most common²



Agitation is present in

~1 out of 2

individuals with dementia due to Alzheimer's disease

Agitation is associated with increased chances of placement into long-term care (LTC)³

~65%
of people with Alzheimer's or other forms of dementia lived
in the community,
receiving more care from family members and other unpaid caregivers as their disease progressed¹



~75%

of people with Alzheimer's dementia at age 80 live in an

LTC facility

compared with 4% of the general population aged 80 years¹

References:

1. 2024 Alzheimer's disease facts and figures. *Alzheimers Dement.* 2024;20(5):3708-3821.
2. Halpern R, et al. *Int J Geriatr Psychiatry.* 2019;34(3):420-431.
3. Fillit H, et al. *Int J Geriatr Psychiatry.* 2021;36(12):1959-1969.

Agitation Presents A Broad Spectrum Of Symptoms

- Agitation associated with dementia due to Alzheimer's disease is a **common and treatable condition** with a broad range of symptoms. It requires distinct treatment options from those used for cognitive impairment¹⁻³
- Despite its prevalence, **agitation is often under-recognized** by caregivers and underdiagnosed by HCPs⁴⁻⁶

Symptoms of agitation manifest as both non-aggressive and aggressive behaviors, such as^{7,8}

EXCESSIVE MOTOR ACTIVITY:

Pacing, restlessness, repetitiveness, and gesturing



VERBAL AGGRESSION:

Screaming, using profanity, and asking repetitive questions

PHYSICAL AGGRESSION:

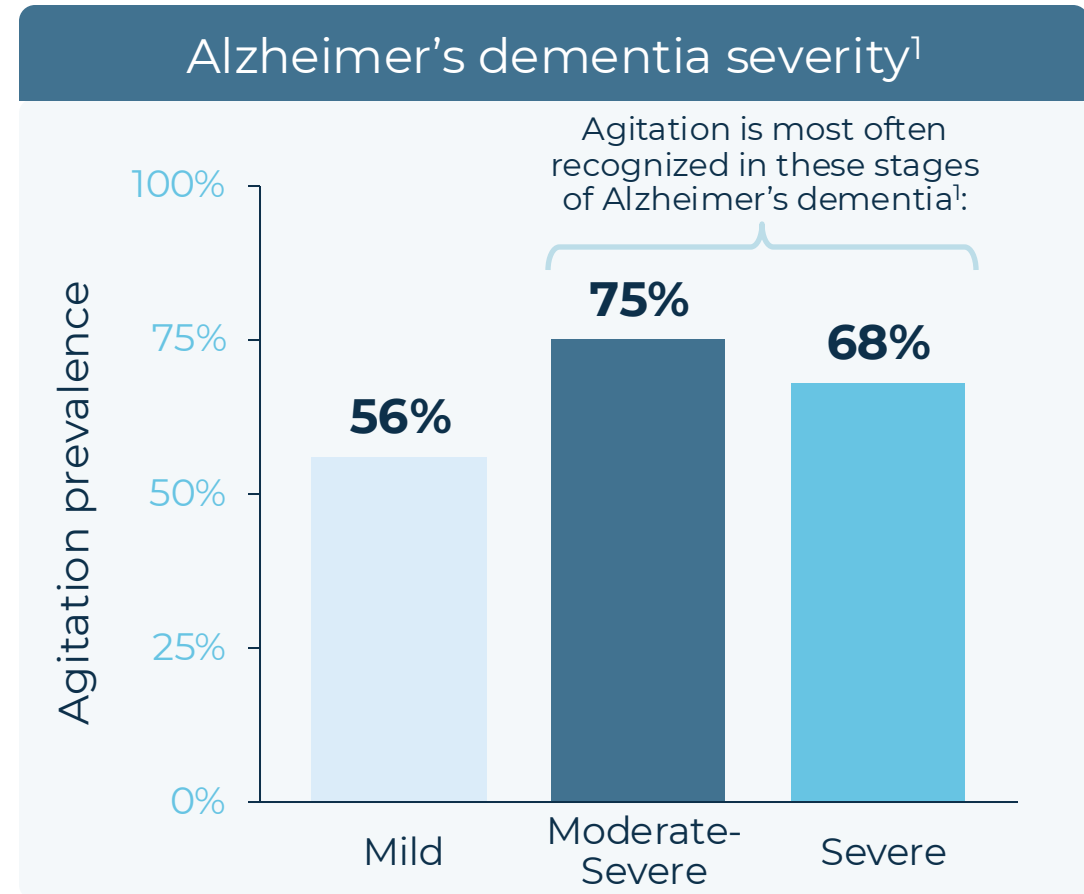
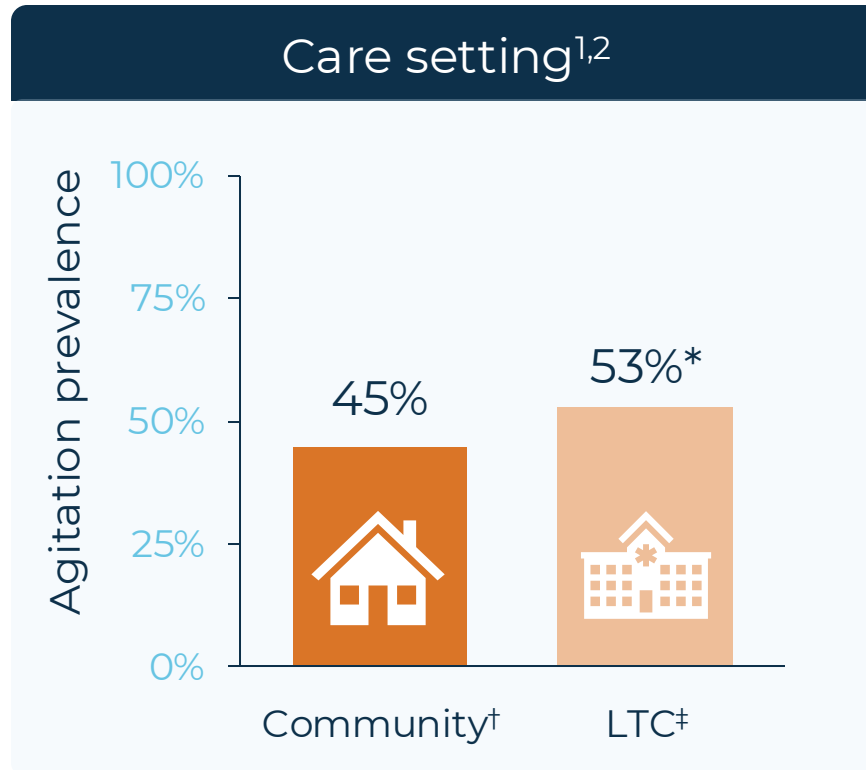
Hitting, kicking, punching, biting, and throwing things

HCP, health care provider.

References:

1. Cummings J, et al. *Int Psychogeriatr*. 2015;27(1):7-17.
2. Cohen-Mansfield J. Instruction manual for the Cohen-Mansfield Agitation Inventory (CMAI). Research Institute of the Hebrew Home of Greater Washington; 1991.
3. Gilmore-Bykovskiy A, et al. *Gerontologist*. 2020;60(5):896-904.
4. Halpern R, et al. *Int J Geriatr Psychiatry*. 2019;34(3):420-431.
5. Lanctôt KJ, et al. *Alzheimers Dement (N Y)*. 2017;3(3):440-449.
6. Stella F, et al. *Int J Geriatr Psychiatry*. 2015;30(12):1230-1237.
7. Sano M, et al. *Int Psychogeriatr*. 2024;36(4):238-250.
8. Rabinowitz J, et al. *Am J Geriatr Psychiatry*. 2005;13(11):991-998.

Agitation Is Prevalent Across Care Settings And Alzheimer's Severities^{1,2}



*Nursing home percentage reported includes those with Alzheimer's dementia and other dementias.

[†]Residential homes.

[‡]Nursing homes/skilled nursing facilities.

LTC, long-term care.

References:

1. Halpern R, et al. Int J Geriatr Psychiatry. 2019;34(3):420-431.

2. Fillit H, et al. Int J Geriatr Psychiatry. 2021;36(12):1959-1969.

Agitation Can Worsen The Impact Of An Already Devastating And Burdensome Disease

Overall, agitation versus no agitation in patients with Alzheimer's dementia has been associated with¹⁻⁷:



In the LTC setting, agitation versus no agitation has been associated with a significantly increased risk of¹:



Falls



Fractures



Infections



Higher medication use



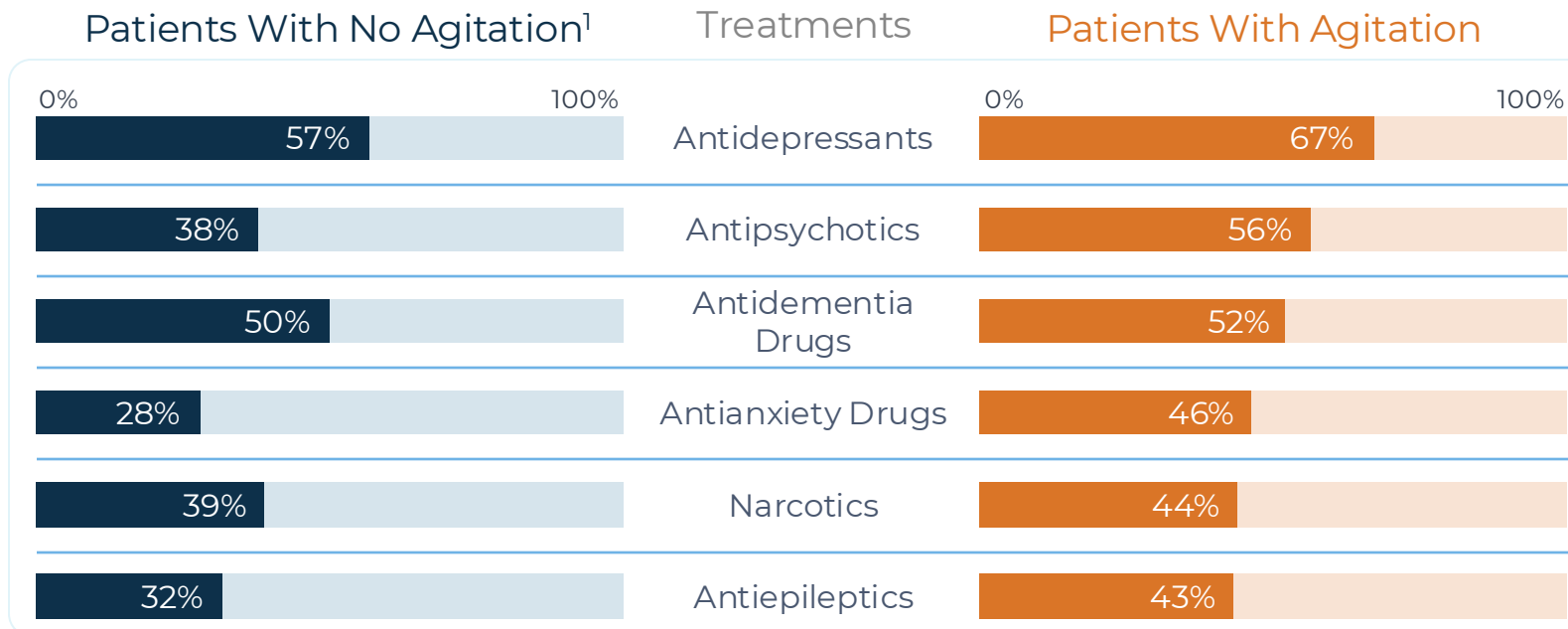
Other NPS*

*Includes depression, anxiety, delusion, and hallucinations.
LTC, long-term care; NPS, neuropsychiatric symptoms.

References:

1. Fillit H, et al. Int J Geriatr Psychiatry. 2021;36(12):1959-1969.
2. Jones E, et al. J Alzheimers Dis. 2021;83(1):89-101.
3. Halpern R, et al. Int J Geriatr Psychiatry. 2019;34(3):420-431.
4. Koenig AM, et al. Curr Psychiatry Rep. 2016;18(1):3.
5. Peters ME, et al. Am J Psychiatry. 2015;172(5):460-465.
6. Scarmeas N, et al. Arch Neurol. 2007;64(12):1755-1761.
7. Banerjee S, et al. J Neurol Neurosurg Psychiatry. 2006;77(2):146-148.

For Patients With Alzheimer's Dementia, Agitation Is Associated With Higher Medical Intervention*



Polypharmacy

- Associated with a high incidence of adverse drug reactions and drug-drug interactions and may manifest as neuropsychiatric symptoms in this elderly population^{1,2}
- Known to increase the possibility of a “prescribing cascade,” in which side effects of drugs are misdiagnosed as symptoms of another medical condition, resulting in further prescriptions and side effects²



Increased Risk Of Hospitalization^{3,†}

2× more mean visits in those with agitation vs without agitation



Increased Risk Of Institutionalization^{3,†}

3.7× higher rate in those with agitation vs without agitation

*Compared with patients with dementia and no agitation. †Compared with non-agitated patients with early cognitive impairment or Alzheimer's disease dementia, including mixed Alzheimer's disease and vascular dementia.

References:

1. Fillit H, et al. Int J Geriatr Psychiatry. 2021;36(12):1959-1969.

2. Aigbogun MS, et al. BMC Neurol. 2019;19(1):33.

3. Jones E, et al. J Alzheimers Dis. 2021;83(1):89-101.

Agitation Has Been Associated With Caregiver Burden, Which Increases With Severity of Alzheimer's Dementia

Many professional caregiving themes parallel those of family caregiving,² including caregiver outcomes³⁻⁹:



General health decline



Reduced quality of life



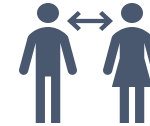
Depression



Anxiety



Embarrassment & guilt



Social isolation



Increased use of clinical services

Agitation is a risk factor for burnout, reduced workability, and generally weaker health among caregivers¹⁰

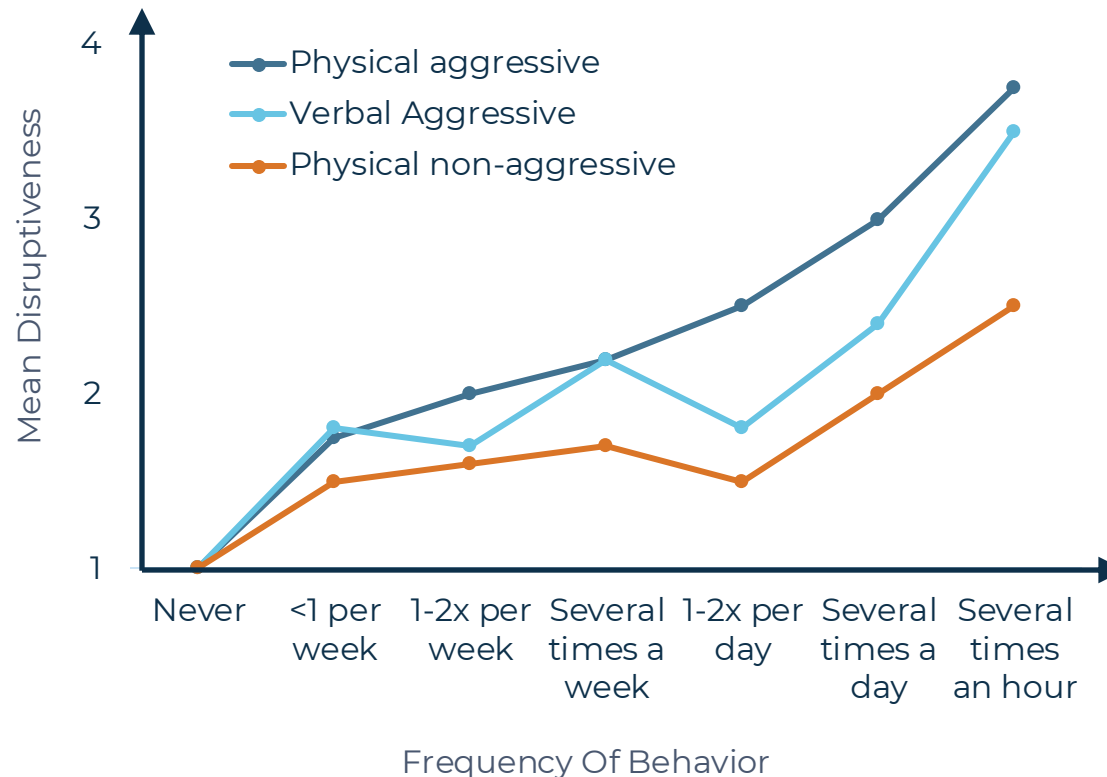
References:

1. Schein J, et al. J Alzheimers Dis. 2022;88(2):663-677.
2. McCarty EF, Drebing C. J Nurses Staff Dev. 2002;18(5):250-257.
3. Kales HC, et al. BMJ. 2015;350:h369.
4. Mohamed S, et al. Am J Geriatr Psychiatry. 2010;18(10):917-927.
5. Isik AT, et al. Int J Geriatr Psychiatry. 2019;34(9):1326-1334.
6. Brodaty H, Hadzi-Pavlovic D. Aust N Z J Psychiatry. 1990;24(3):351-361.
7. Thomas P, et al. Int J Geriatr Psychiatry. 2006;21(1):50-56.
8. Patrick KS, et al. Psychogeriatrics. 2022;22(5):688-698.
9. Cohen-Mansfield J. J Psychiatr Res. 2008;43(1):64-69.
10. Palm R, et al. J Alzheimers Dis. 2018;66(4):1463-1470.

Agitation Behaviors Have Been Associated With Substantial Burden To LTC Caregivers^{1,2}

In nursing homes caring for people with dementia, the disruptiveness of **agitated behaviors** measured using the Cohen-Mansfield Agitation Inventory (CMAI) **increases with frequency** for all behavior types³

Disruptiveness By Type And Frequency Of Behavior



LTC, long-term care.

References:

1. Fillit H, et al. Int J Geriatr Psychiatry. 2021;36(12):1959-1969;
2. Zeller A, et al. Geriatr Nurs. 2009;30(3):174-187;
3. Cohen-Mansfield J. J Psychiatr Res. 2008;43(1):64-69.

IPA Criteria Offer A Foundation For Recognition Of Agitation In Cognitive Disorders¹

The IPA definition of agitation in cognitive disorders includes 4 criteria:

1. The patient meets the criteria for cognitive impairment or dementia syndrome
2. The patient exhibits ≥ 1 agitation behavior(s) with emotional duress that is persistent or frequently recurrent for ≥ 2 weeks or the behavior represents a dramatic change from the patient's usual behavior*
3. The behaviors are severe and associated with excess distress or produce disability beyond that due to cognitive impairment
4. The behaviors cannot be attributed to another psychiatric disorder, medical condition (including delirium), suboptimal care conditions, or the physiological effects of a substance

Agitation behaviors include:



Excessive motor activity behaviors:

- Pacing
- Rocking
- Gesturing
- Pointing fingers
- Restlessness
- Performing repetitious mannerisms



Verbal aggression behaviors:

- Yelling
- Speaking in an excessively loud voice
- Using profanity
- Screaming
- Shouting



Physical aggression behaviors:

- Grabbing
- Shoving
- Pushing
- Resisting
- Hitting others
- Kicking objects or people
- Scratching
- Biting
- Throwing objects
- Hitting self
- Slamming doors
- Tearing things
- Destroying property

*In special circumstances, the ability to document the behaviors over 2 weeks may not be possible and other terms of persistence and severity may be needed to capture the syndrome beyond a single episode.

IPA, International Psychogeriatric Association.

Reference:

1. Sano M, et al. Int Psychogeriatr. 2024;36(4):238-250.

PsychU is supported by Otsuka Pharmaceutical Development & Commercialization, Inc. (OPDC) and Otsuka America Pharmaceutical, Inc. (OAPI) – committed supporters of the mental health treatment community. The information provided through PsychU is intended for the educational benefit of mental health care professionals and others who support mental health care. It is not intended as, nor is it a substitute for, medical care, advice, or professional diagnosis. Health care professionals should use their independent medical judgement when reviewing PsychU's educational resources. Users seeking medical advice should consult with a health care professional. No CME or CEU credits are available through any of the resources provided by PsychU. Some of the contributors may be paid consultants for OPDC and OAPI. ©2025 Otsuka Pharmaceutical Development & Commercialization, Inc. All rights reserved.

The CMAI Measures A Broad Range Of Behaviors Of Agitation Consistent With The IPA Definition Of Agitation

29 CMAI Behaviors^{1,2}

Grouping CMAI items into types of behaviors—defined by IPA criteria—provides a framework for agitation and inappropriate behaviors in patients with dementia^{1,2}:



Excessive motor activity behaviors



Verbal aggression behaviors







Physical aggression behaviors



Other behaviors

Pacing and aimless wandering	Cursing or verbal aggression	Throwing things	Spitting	Hiding things
Inappropriate dressing or disrobing	Making verbal sexual advances	Biting	Making physical sexual advances or exposing genitals	Hoarding things
Trying to get to a different place	Constant unwarranted request for attention and/or help	Scratching	Hitting self or others	Eating or drinking inappropriate substances
Handling things inappropriately	Repetitive sentences and questions	Hurting self or others	Kicking	Making strange noises
Performing repetitious mannerisms	Complaining	Tearing things or destroying property	Grabbing people or things inappropriately	Intentional falling
General restlessness	Negativism		Pushing	
	Screaming			



CMAI, Cohen-Mansfield Agitation Inventory; IPA, International Psychogeriatric Association.

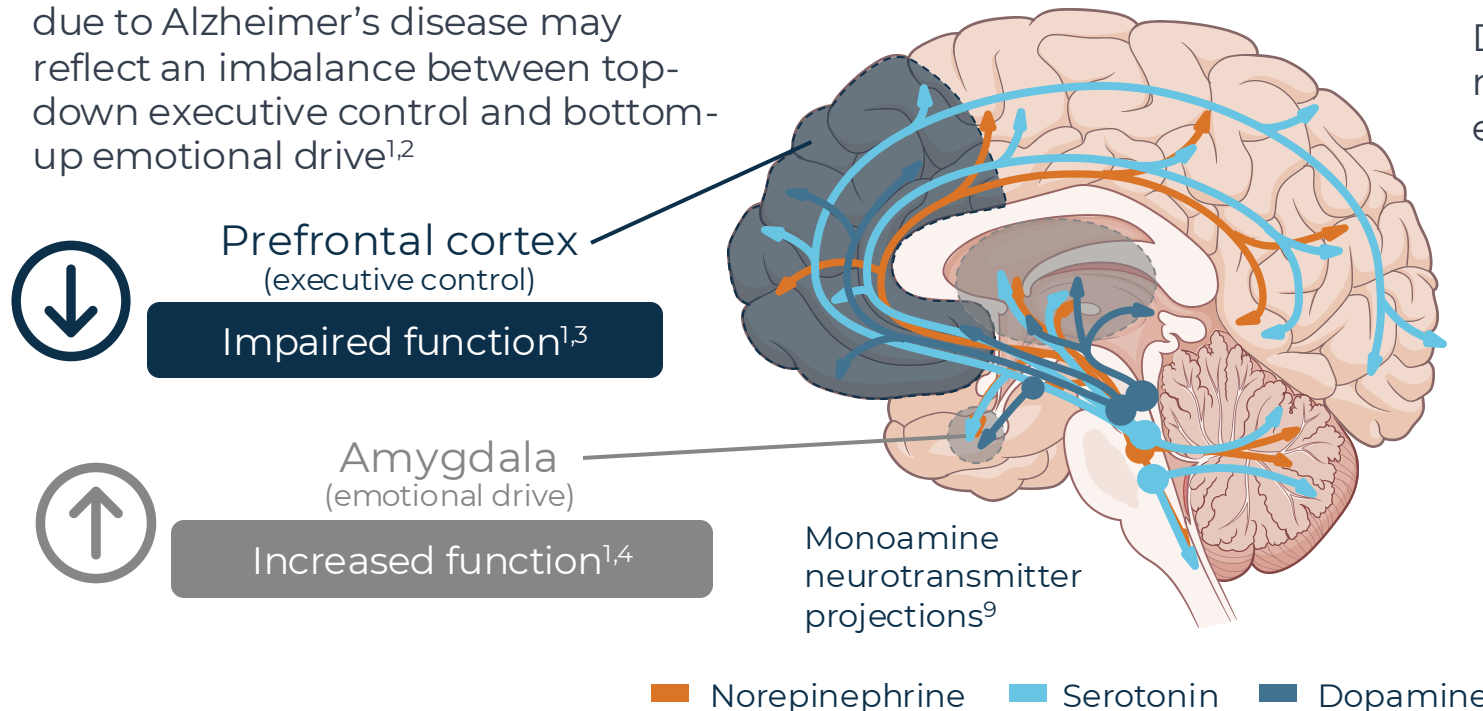
References:

1. Cummings J, et al. Int Psychogeriatr. 2015;27(1):7-17.
2. Cohen-Mansfield J. Instruction manual for the Cohen-Mansfield agitation inventory (CMAI). Research Institute of the Hebrew Home of Greater Washington; 1991.

Brain Pathology and Monoaminergic Dysfunction

Imbalance between executive control and emotional drive may arise from the accumulation of tau pathology and neurodegeneration within key brain regions. A consequence of this pathology is the dysfunction of the monoamine/NSD neurotransmitter systems¹

Agitation associated with dementia due to Alzheimer's disease may reflect an imbalance between top-down executive control and bottom-up emotional drive^{1,2}



Dysfunction of NSD neurotransmitter system may contribute to imbalance between executive control and emotional overdrive^{1,5-8}



Norepinephrine system^{1,5}

Increased activity



Serotonin system^{1,7}

Decreased activity



Dopamine system^{1,8}

Dysregulation

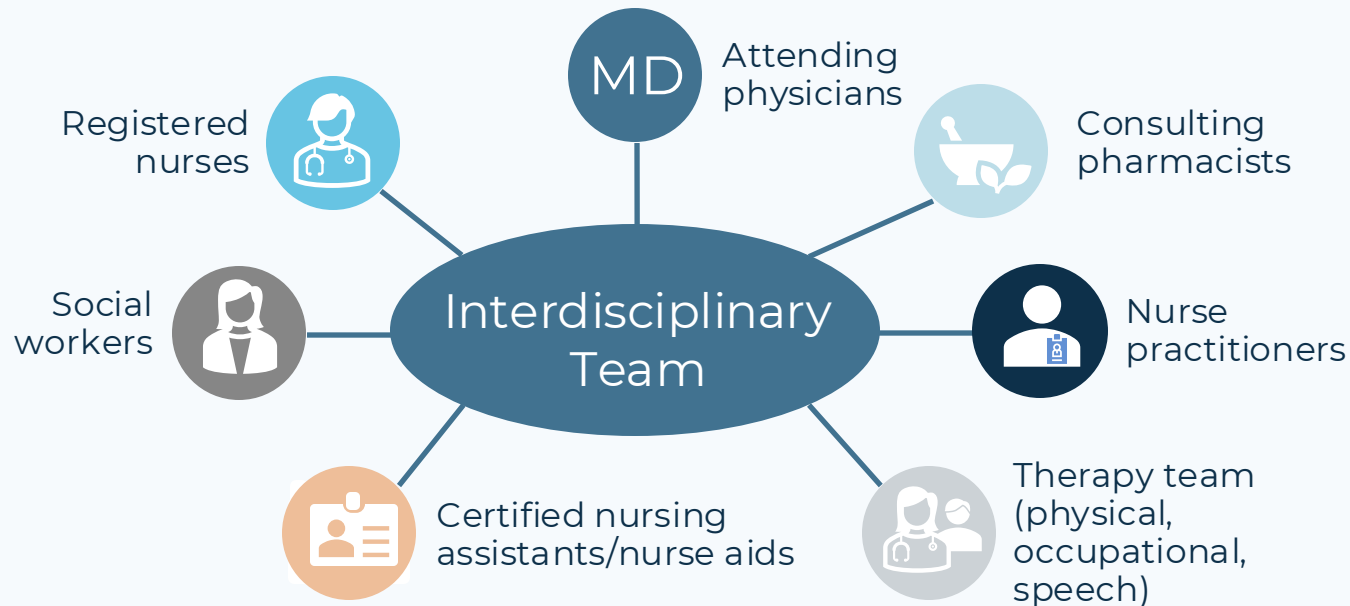
NSD, norepinephrine, serotonin, and dopamine.

References:

1. Cummings JL, et al. *CNS Spectr*. 2024;1-10.
2. Rosenberg PB, et al. *Mol Aspects Med*. 2015;43-44:25-37.
3. Banno K, et al. *Neuropsychiatr Dis Treat*. 2014;10:339-348.
4. Wright CI, et al. *Biol Psychiatry*. 2007;62(12):1388-1395.
5. Jacobs HI, et al. *Mol Psychiatry*. 2021;26(3):897-906.
6. Arnsten AFT, et al. *Neurobiol Stress*. 2015;1:89-99.
7. Lanctôt KL, et al. *J Neuropsychiatry Clin Neurosci*. 2001;13(1):5-21.
8. Lindenmeyer JP. *J Clin Psychiatry*. 2000;61(Suppl 14):5-10.
9. Carandini T, et al. *Neuroimage Clin*. 2021;30:102587.

The Goal Of The Interdisciplinary Team Is To Provide Patient-Centered Care¹

The interdisciplinary team varies by setting and facility, but can be comprised of the following care providers¹:



The interdisciplinary team assesses, coordinates, and manages comprehensive health care for each resident's varying needs^{1,2}:



References:

1. Galvin JE, et al. Neurodegener Dis Manag. 2014;4(6):455-469;
2. Stefanacci RG, Cusack CL. Ann Longterm Care. 2016;24(4):17-20.

Current Treatment Paradigm For A Comprehensive Management Plan

American Psychiatric Association Practice Guideline On The Use Of Antipsychotics
To Treat Agitation Or Psychosis In Patients With Dementia



Differential Diagnosis

General medical,
psychiatric, environmental,
or psychosocial problems



Individualize

Understand individual
circumstances and triggers



Nonpharmacologic Intervention

First-line treatment



Pharmacologic Intervention

If nonpharmacologic
measures are unsuccessful
or behaviors are dangerous
or distressing

Reference: Reus VI, et al. Am J Psychiatry. 2016;173(5):543-546.

Person-Centered Treatment Planning For Agitation Associated With Dementia Due To Alzheimer's Disease In Alzheimer's Dementia

A person-centered treatment plan should involve collaboration between the clinician, caregiver, and—if possible—the patient¹



Patient²

- Understand patient triggers and any underlying medical conditions



Environment^{1,3,4}

- Simplify environments to avoid over- and under-stimulation
- Facilitate routine and pleasurable activities
- Incorporate nonpharmacologic strategies (eg, sensory enhancement/relaxation)



Caregiver¹

- Understand the history and current state of relationship between the patient and caregiver
- Determine caregiver needs, expectations, and perceptions

References:

1. Desai A. J Gerontol Nurs. 2017;43(2):9-17.
2. Reus VI, et al. Am J Psychiatry. 2016;173(5):543-546.

3. Gitlin LN, et al. JAMA. 2012;308(19):2020-2029.
4. Abraha I, et al. BMJ Open. 2017;7(3):e012759.

Nonpharmacologic Interventions to Treat Agitation In Residents With Alzheimer's Dementia



Caregiver Interventions¹

Caregiver education and support, connection to external organizations and services



Remove Stressors^{2,3}

Separate the patients from stimuli and environments that worsen symptoms, assess medication effects



Sensory Enhancement/Relaxation^{1,4,5}

Hand massage, individualized music or art, sensory modulation, multisensory environments, supportive interactions, orienting stimuli



Improve Environment¹

Control temperature, facilitate and simplify activities, decrease environmental noise



Purposeful Activity^{1,4}

Helping tasks/volunteer roles, inclusion in group activity programs, access to outdoors, physical activity



Social Contact⁴

Pet therapy, one-to-one visits

Treatment goals of nonpharmacologic approaches include prevention, management, reduction, or elimination of behavioral occurrences (frequency, severity); reduction of caregiver distress; and/or prevention of adverse consequences including harm to caregiver or patient¹

References:

1. Gitlin LN, et al. JAMA. 2012;308(19):2020-2029.

2. Desai A. J Gerontol Nurs. 2017;43(2):9-17.

3. Carrarini C, et al. Front Neurol. 2021;12:644317.

4. Abrahams J, et al. BMJ Open. 2017;7(3):e012759.

5. James IA, et al. Clin Interv Aging. 2023;18:219-230.

Pharmacologic Interventions: Considerations For Treating Agitation In Residents With Alzheimer's Dementia

If nonpharmacologic measures are unsuccessful or symptoms are severe, dangerous, and/or cause significant distress, then judicious pharmacologic intervention is recommended¹



There is only one FDA-approved drug for treatment of agitation associated with dementia due to Alzheimer's disease, and it is classified as an atypical antipsychotic²

However, clinicians may prescribe other unapproved pharmacologic treatments, including^{1,3-6}:

- Antipsychotics (typical and atypical)
- Anticonvulsants
- Anxiolytics or sedative-hypnotics
- Antidepressants
- Other medications

Pharmacologic treatments can be associated with adverse events^{1,4,5,7,8}:



Sedation*



Extrapyramidal symptoms



Orthostatic hypotension



Cognitive worsening



Fractures and falls



Cerebrovascular and cardiovascular complications

*Some family caregivers of patients with Alzheimer's disease and other forms of dementia find sedative effects distressing and unhelpful.⁸

FDA, Food and Drug Administration.

References:

1. Rabins PV, et al. Am J Psychiatry. 2007;164(12 Suppl):5-56.
2. Lee D, et al. JAMA Neurol. 2023;80(12):1307-1316.

3. Aigbogun MS, et al. J Alzheimers Dis. 2020;77(3):1181-1194.
4. Schneider LS, et al. Am J Geriatr Psychiatry. 2006;14(3):191-210.
5. Porsteinsson AP, et al. JAMA. 2014;311(7):682-691.

6. Caraci F, et al. F1000 Res. 2020;9:F1000 Faculty Rev-686.
7. Marcinkowska M, et al. CNS Drugs. 2020;34(3):243-268.
8. Harding R, et al. Med Law Rev. 2013;21(2):243-277.

Pharmacologic Interventions: Use Of Antipsychotics In The LTC Setting Is Highly Regulated

CMS's regulatory oversight for psychotropic medications ensures proper use^{1,*}

Requirements for proper use:

Psychotropics* cannot be prescribed without a documented diagnosis, and certain drug classes have additional regulations¹

Additional monitoring requirements:

If psychotropics are prescribed, behavioral symptoms must be reviewed at least quarterly to determine if the dose can be reduced or discontinued (ie, GDR)¹

Auditing for inaccurate coding:

CMS will audit LTC facilities' MDS documentation and assessments of schizophrenia due to historically erroneous diagnoses and concern for residents being prescribed unnecessary antipsychotics²

Consequences of inaccurate coding:

CMS will downgrade quality measure ratings in cases of inaccurate coding (eg, lacking comprehensive psychiatric evaluations or noting behaviors related to dementia versus schizophrenia)²

*Includes antipsychotic, antidepressant, anxiolytic, and hypnotic drugs.

CMS, Centers for Medicare & Medicaid Services; GDR, gradual dose reduction; LTC, long-term care; MDS, minimum data set.

References:

1. Centers for Medicare & Medicaid Services (CMS). State operations manual appendix PP – Guidance to surveyors for long term care. Rev. 225. Accessed October 13, 2024. <https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf>.
2. Centers for Medicare & Medicaid Services (CMS). Updates to the nursing home care compare website and five star quality rating system: adjusting quality measure ratings based on erroneous schizophrenia coding, and posting citations under dispute. QSO-23-05-NH, 1-18-23. Accessed October 13, 2024. <https://www.cms.gov/medicare/provider-enrollment-and-certification/surveycertificationgeninfo/policy-and-memos-states/updates-nursing-home-care-compare-website-and-five-star-quality-rating-system-adjusting-quality>.

PsychU is supported by Otsuka Pharmaceutical Development & Commercialization, Inc. (OPDC) and Otsuka America Pharmaceutical, Inc. (OAPI) – committed supporters of the mental health treatment community. The information provided through PsychU is intended for the educational benefit of mental health care professionals and others who support mental health care. It is not intended as, nor is it a substitute for, medical care, advice, or professional diagnosis. Health care professionals should use their independent medical judgement when reviewing PsychU's educational resources. Users seeking medical advice should consult with a health care professional. No CME or CEU credits are available through any of the resources provided by PsychU. Some of the contributors may be paid consultants for OPDC and OAPI. ©2025 Otsuka Pharmaceutical Development & Commercialization, Inc. All rights reserved.

Summary



Agitation associated with dementia due to Alzheimer's disease is highly prevalent and associated with caregiver burden^{1,2}



Agitation associated with dementia due to Alzheimer's disease is associated with higher health care resource utilization and costs^{3,4}



There is only one FDA-approved drug for treatment of agitation associated with dementia due to Alzheimer's disease, and it is classified as an atypical antipsychotic. However, clinicians may prescribe other unapproved medications⁵⁻¹⁰



Antipsychotic use is highly regulated by CMS in an effort to curb inappropriate use and ensure appropriate use, including use in specific situations where antipsychotic medications may be indicated¹¹

CMS, Centers for Medicare & Medicaid Services; FDA, Food and Drug Administration.

References:

1. Schein J, et al. J Alzheimers Dis. 2022;88(2):663-677.
2. Halpern R, et al. Int J Geriatr Psychiatry. 2019;34(3):420-431.
3. Fillit H, et al. Int J Geriatr Psychiatry. 2021;36(12):1959-1969.
4. Jones E, et al. J Alzheimers Dis. 2021;83(1):89-101.

5. Rabins PV, et al. Am J Psychiatry. 2007;164(12 Suppl):5-56.
6. Lee D, et al. JAMA Neurol. 2023;80(12):1307-1316.
7. Aigbogun MS, et al. J Alzheimers Dis. 2020;77(3):1181-1194.
8. Schneider LS, et al. Am J Geriatr Psychiatry. 2006;14(3):191-210.
9. Porsteinsson AP, et al. JAMA. 2014;311(7):682-691.

10. Caraci F, et al. F1000Res. 2020;9:F1000 Faculty Rev-686.
11. State Operations Manual Appendix PP – Guidance to Surveyors for Long Term Care. Centers for Medicare & Medicaid Services (CMS). Rev. 225. Accessed October 13, 2024. <https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf>.

For more information or to request a more detailed live presentation on this topic from your local Medical Science Liaison, please visit www.PsychU.org/contact

[**www.PsychU.org**](http://www.PsychU.org)

Get Your Resources On The Go

Download the PsychU app
from Google Play or from
the Apple App Store!



Subscribe to
The PsychU Community
Podcast on the Spotify app
or on the Apple Podcasts app.



Thank you for attending today's live program!

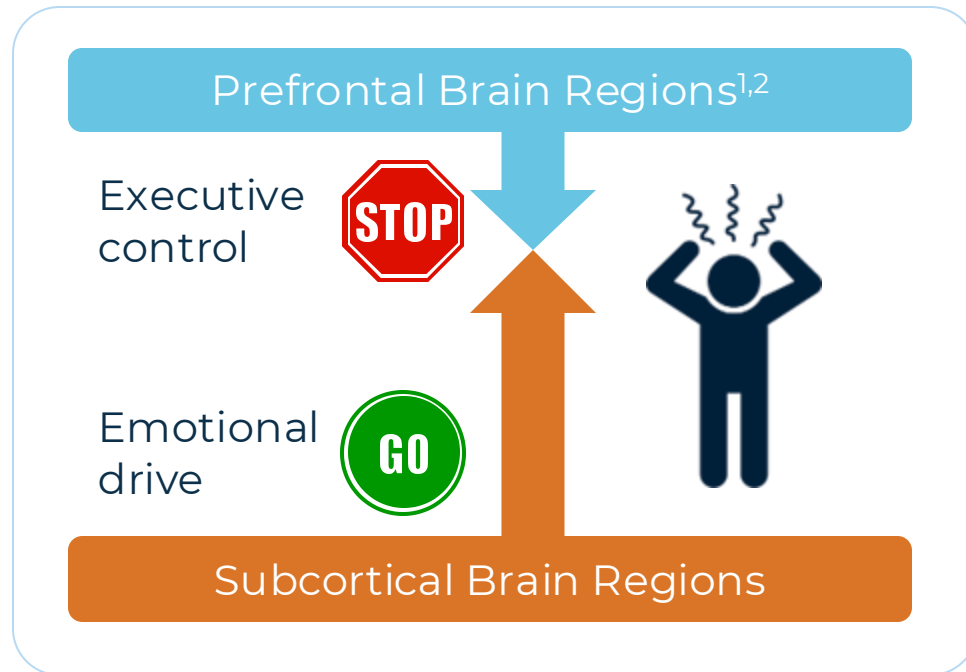
Tell us what you thought by scanning the QR code and taking a quick survey. We look forward to seeing you again!

Agitation Associated With Dementia Due To Alzheimer's Disease In The Long-Term Care (LTC) Setting



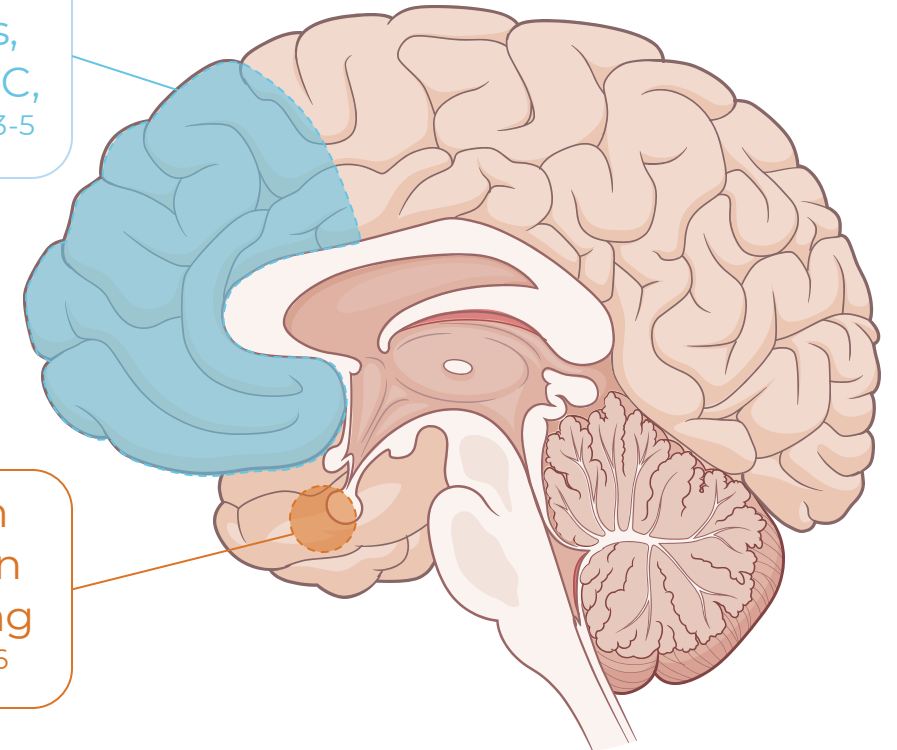
October 2025 US.PSY.D.25.00032

Agitation Is Associated With An Imbalance Between Executive Control And Emotional Drive



Hypoactivity in prefrontal regions, including the dlPFC, vmPFC, and OFC^{1,3-5}

Hyperactivity in subcortical brain regions, including the amygdala^{1,6}



dlPFC, dorsolateral prefrontal cortex; OFC, orbitofrontal cortex; vmPFC, ventromedial prefrontal cortex.

References:

1. Cummings JL, et al. CNS Spectr. 2024;1-10.
2. Rosenberg PB, et al. Mol Aspects Med. 2015;43-44:25-37.

3. Hirono N, et al. Arch Neurol. 2000;57(6):861-866.
4. Banno K, et al. Neuropsychiatr Dis Treat. 2014;10:339-348.
5. Ng KP, et al. Transl Neurodegener. 2021;10(1):1.
6. Wright CI, et al. Biol Psychiatry. 2007;62(12):1388-1395.

Current Approaches And The Unmet Needs In Recognition Of Agitation In Patients With Alzheimer's Dementia

Agitation symptoms, particularly non-aggressive ones, are among the earliest and most common occurrences in Alzheimer's dementia, yet they are often under-recognized.¹

Recognition of agitation symptoms²⁻⁴

Timely recognition, correct diagnosis, and appropriate management may improve outcomes for most patients and their caregivers

Available rating scales that measure agitation⁵



Cohen-Mansfield Agitation Inventory (CMAI)



Neuropsychiatric Inventory (NPI) and NPI-C

Current scales may not aid patient care²⁻⁵:

- 1 Not designed to quickly and exclusively screen for agitation
- 2 Often scored differently by caregivers and HCPs
- 3 Not widely or easily used in clinical practice

Unmet needs identified⁵:

- There is no agitation screener tool exclusively designed for caregivers of individuals with Alzheimer's dementia
- There is no clinical tool that is easy and quick to use in clinical practice

HCP, health care provider; NPI-C, Neuropsychiatric Inventory–Clinician Rating Scale.

References:

1. Lanctôt KJ, et al. *Alzheimers Dement* (NY). 2017;3(3):440-449.
2. Grossberg G, et al. *Dementia* (London). Published online May 14, 2025.
3. Stella F, et al. *Int J Geriatr Psychiatry*. 2015;30(12):1230-1237.
4. Gilmore-Bykovskiy A, et al. *Gerontologist*. 2020;60(5):896-904.
5. Richler LG, et al. *Harv Rev Psychiatry*. 2023;31(1):22-27.
6. Clevenger C, et al. One minute to recognition: The Agitation in Alzheimer's Screener for Caregivers (AASC®). Presented at: Gerontological Society of America Annual Scientific Meeting; November 8-12, 2023; Tampa, FL.

The Agitation In Alzheimer's Screener For Caregivers (AASC®)

The AASC® was based on and assessed against the IPA criteria for agitation in cognitive disorders to support its clinical utility^{1,2}

Goals of the AASC®

- To educate caregivers about agitation symptoms¹
- To facilitate caregiver-HCP conversations about agitation¹
- To help HCPs in screening for agitation associated with dementia due to Alzheimer's disease¹

AASC®
Agitation in Alzheimer's Screener for Caregivers

A person with Alzheimer's dementia may become easily upset, frustrated, or angry. These feelings may be associated with agitation, a common symptom of Alzheimer's. The following questions ask about behaviors associated with agitation that you may have observed in the individual for whom you provide care. Your answers to these questions can help you talk with your person's healthcare professional. Please select one response for each question.

Patient Name _____ Date _____

1. Are you noticing any of the following that represent a change from the individual's usual or past behavior?

a. Repeating motions or behaviors (e.g., rocking, raising fist, pointing finger)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. Pacing or restlessness (cannot be still)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
c. Cursing/using profanity or lashing out verbally	<input type="checkbox"/> Yes	<input type="checkbox"/> No
d. Raising voice or yelling or screaming	<input type="checkbox"/> Yes	<input type="checkbox"/> No
e. Resisting assistance or care	<input type="checkbox"/> Yes	<input type="checkbox"/> No
f. Throwing or hitting or breaking things	<input type="checkbox"/> Yes	<input type="checkbox"/> No
g. Trying to hurt self or others (e.g., grabbing, kicking, hitting, biting)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

2. Do any of these behaviors make the individual's day-to-day activities or interactions with others more challenging?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

Disclaimer: This screener was developed by Otsuka Global Medical Affairs along with a panel of multidisciplinary experts and was funded by Otsuka Pharmaceutical Development & Commercialization, Inc. The AASC® is a screening tool and is not a diagnostic tool.

Agitation criteria based on the International Psychogeriatric Association (IPA) definition (Baro et al., 2023).

References: 1. Grossberg G, et al. Validation of the Agitation in Alzheimer's Screener for Caregivers (AASC®), a Novel Clinical Tool to Screen for Agitation in Alzheimer's Dementia. The American Association of Geriatric Psychiatry (AAGP) Annual Meeting, March 14-17, 2025, Phoenix, AZ. 2. Gross G, Cummings J, Auer S, et al. In: Psychogeriatr. 2023;17:1-6. © 2023 Otsuka Pharmaceutical Development & Commercialization, Inc. All rights reserved.

The AASC® is the first clinical tool based on IPA criteria¹

Items screen for both the presence and impact of agitation symptoms¹

Can be completed in <1 minute¹

Simple to score

A positive screen for agitation in Alzheimer's dementia requires¹:

☒ 'Yes' to any symptoms in Question 1 AND ☒ 'Yes' to Question 2

Use the digital version or download and print the AASC® at www.theaasc.com



The AASC® is available in 4 other languages:

Traditional Chinese, Simplified Chinese, Spanish, and Japanese

HCP, health care provider; IPA, International Psychogeriatric Association.

References:

1. Clevenger C, et al. One minute to recognition: The Agitation in Alzheimer's Screener for Caregivers (AASC™). Presented at: Gerontological Society of America Annual Scientific Meeting; November 8-12, 2023; Tampa, FL.
2. Grossberg G, et al. Validation of the Agitation in Alzheimer's Screener for Caregivers (AASC®), a novel clinical tool to screen for agitation in Alzheimer's dementia. Presented at: The American Association of Geriatric Psychiatry Annual Meeting; March 14-17, 2025; Phoenix, AZ.

PsychU is supported by Otsuka Pharmaceutical Development & Commercialization, Inc. (OPDC) and Otsuka America Pharmaceutical, Inc. (OAPI) – committed supporters of the mental health treatment community. The information provided through PsychU is intended for the educational benefit of mental health care professionals and others who support mental health care. It is not intended as, nor is it a substitute for, medical care, advice, or professional diagnosis. Health care professionals should use their independent medical judgement when reviewing PsychU's educational resources. Users seeking medical advice should consult with a health care professional. No CME or CEU credits are available through any of the resources provided by PsychU. Some of the contributors may be paid consultants for OPDC and OAPI. ©2025 Otsuka Pharmaceutical Development & Commercialization, Inc. All rights reserved.

The NPI Evaluates 12 Neuropsychiatric Symptoms, Including Agitation

The Neuropsychiatric Inventory (NPI) evaluates
12 neuropsychiatric symptoms common in dementia, including:

- | | | |
|------------------|----------------|------------------------------------|
| ✓ Delusions | ✓ Anxiety | ✓ Disinhibition |
| ✓ Hallucinations | ✓ Apathy | ✓ Aberrant motor behavior |
| ✓ Agitation | ✓ Irritability | ✓ Night-time behavior disturbances |
| ✓ Depression | ✓ Elation | ✓ Appetite and eating changes |



The Neuropsychiatric Inventory – Nursing Home version (NPI-NH) rating scale is a screening instrument for neuropsychiatric symptoms in patients with dementia residing in a nursing home

- The NPI-NH adapts the original NPI scale by rephrasing the questions and changing the caregiver distress scale to an occupational disruptiveness scale that captures the impact of the behavioral changes on daily life and the effectiveness of the professional caregiver
- Used to characterize the frequency and severity of symptoms

Reference: Cummings J.J. *Geriatr Psychiatry Neurol.* 2020;33(2):73-84.

ICD Codes Allow Providers To Capture Additional Information On Dementia Conditions, Including Presence Of Agitation^{1,2}

The new ICD-10-CM codes are intended to help provider organizations develop appropriate management strategies for interventions

Previous ICD-10 codes

- Identified types of dementia
- Identified presence of behavioral disturbances

New ICD-10 codes

- Added specificity on the stage of dementia severity* (ie, unspecified, mild, moderate, or severe)
- More fully identify types of behavioral symptoms of dementia (ie, agitation, psychosis, or mood disturbances)

*Selection of the appropriate severity level requires an HCP's clinical judgment. If the individual's health record provides no information about the severity of dementia, HCPs are to use the appropriate code for unspecified severity. HCP, health care provider; ICD, International Classification of Diseases.

References:

1. The Centers for Medicare and Medicaid Services. Updated April 1, 2023. Accessed October 15, 2024. <https://www.cms.gov/files/document/fy-2023-icd-10-cm-coding-guidelines-updated-01/11/2023.pdf>.
2. Department of Health and Human Services. Updated August 10, 2022. Accessed October 15, 2024. <https://public-inspection.federalregister.gov/2022-16472.pdf>.

ICD-10 Codes For Agitation In Dementia

Secondary ICD-10-CM codes related to agitation effective as of October 1, 2022:

ICD-10-CM Code	Description
F02.811	Dementia in other diseases classified elsewhere, unspecified severity, with agitation
F02.A11	Dementia in other diseases classified elsewhere, mild, with agitation
F02.B11	Dementia in other diseases classified elsewhere, moderate, with agitation
F02.C11	Dementia in other diseases classified elsewhere, severe, with agitation

These codes are included as potential examples of how agitation might be coded using the ICD system.
These are not exhaustive and are not related to any specific medication or treatment.

ICD, International Classification of Diseases.

Reference: Department of Health and Human Services. Updated August 10, 2022. Accessed October 15, 2024. <https://public-inspection.federalregister.gov/2022-16472.pdf>.

Management Of Agitation In LTC Residents With Alzheimer's Dementia Is Associated With Significant Health Care Resource Utilization And Costs¹

~1.3 million persons receive care in
~15,000 nursing homes across the US
each year^{2,3}



Annual costs
exceed
\$191B

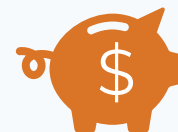


Projected to
exceed
\$300B
by 2030

The total incremental cost of institutionalization associated
with agitation in individuals with Alzheimer's dementia^{4,*}:

85,089 Individuals with agitation in
institutionalized settings

× **\$50,588** Average annual incremental
costs per individual



\$4.3B Overall annual total incremental cost
of institutionalization

*According to a recent retrospective report, 2018 US dollars.

B, billion; LTC, long-term care.

References:

1. Fillit H, et al. Int J Geriatr Psychiatry. 2021;36(12):1959-1969.

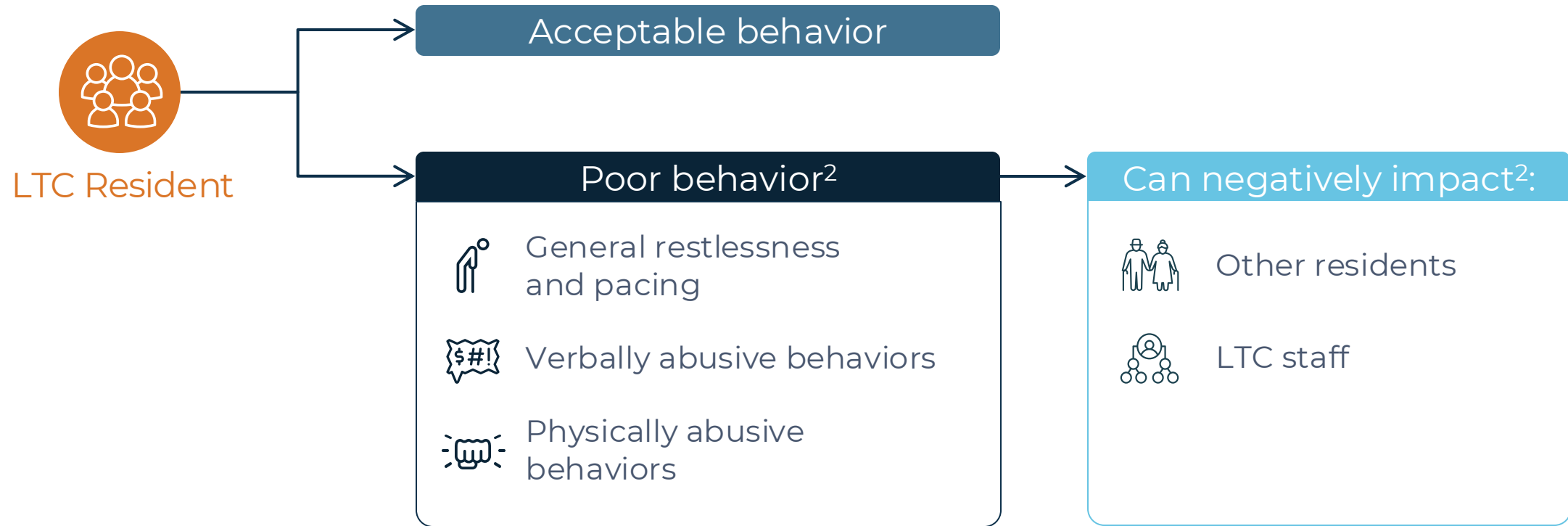
2. National Academies of Sciences, Engineering, and Medicine. The National Imperative to Improve Nursing

Home Quality: Honoring Our Commitment to Residents, Families, and Staff. National Academies Press; 2022.

3. CMS. National Health Expenditures Projections. Accessed October 9, 2024. <https://www.cms.gov/data-research/statistics-trends-and-reports/national-health-expenditure-data/projected>.

4. Cloutier M, et al. Alzheimers Dement (NY). 2019;5:851-861.

The Level Of Disruptiveness Of Agitated Behaviors Increases With Frequency For All Types Of Behavior^{1*}



*Measured using the CMAI.

CMAI, Cohen-Mansfield Agitation Inventory; LTC, long-term care.

Reference:

1. Cohen-Mansfield J. J Psychiatr Res. 2008;43(1):64-69; 2. Fillit H, et al. Int J Geriatr Psychiatry. 2021;36(12):1959-1969.

Resident-To-Resident Mistreatment In The LTC Setting Is A Large And Pervasive Problem

The most common forms of recorded resident-to-resident mistreatment include:



Verbal: 9%

Screaming

47%

Profanity

45%



Physical: 5%

Hitting

11%

Pushing

10%



Other: 5%

Trespassing

24%

Stealing/
touching
property

19%

LTC, long-term care.

Reference: Lachs MS, et al. Ann Intern Med. 2016;165(4):229-236.

Burnout Has Been Recognized As An Occupational Hazard For Both Professional And Family Caregivers^{1,2}

Multiple assessments have been created to characterize burnout based on physical, mental, and emotional aspects³⁻⁵

These 3 examples can be used to define burnout in caregivers of patients with Alzheimer's dementia:



Maslach Burnout Inventory³

- ✓ Overwhelming exhaustion
- ✓ Feelings of cynicism and detachment from the job
- ✓ Sense of ineffectiveness and lack of accomplishment



Burnout Measure⁴

- ✓ Physical exhaustion
- ✓ Mental exhaustion
- ✓ Emotional exhaustion



ICD-11 of the WHO⁵

- ✓ Feelings of energy depletion or exhaustion
- ✓ Increased mental distance from one's job, or feelings of negativism or cynicism related to one's job
- ✓ Reduced professional efficacy

ICD-11, International Classification of Diseases, 11th Revision; WHO, World Health Organization.
References:

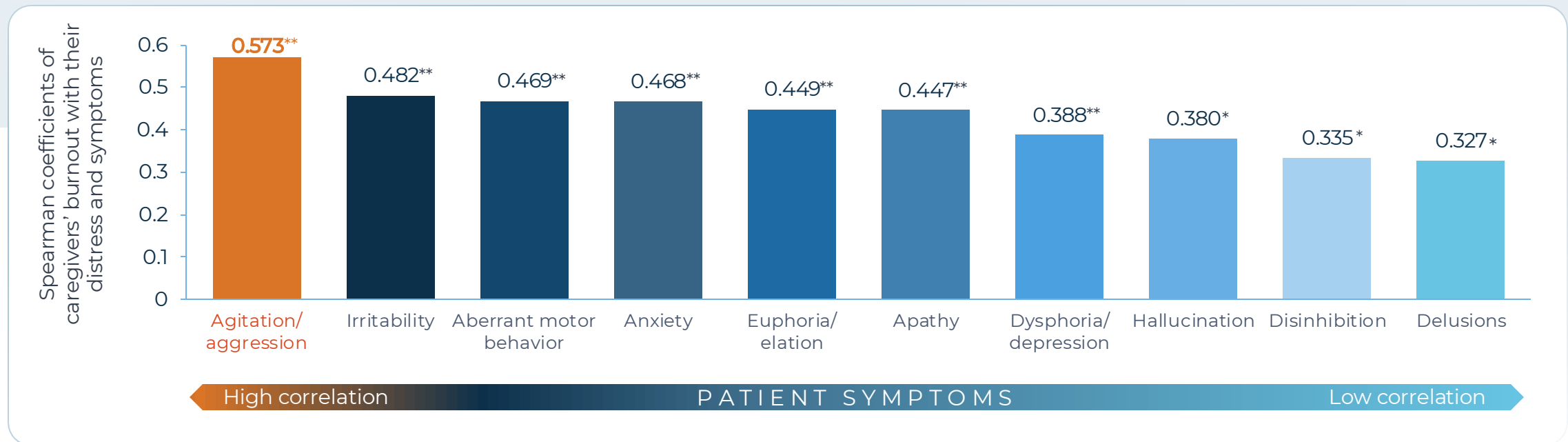
1. Hiyoshi-Taniguchi K, et al. Clin Gerontol. 2018;41(3):249-254.
2. Palm R, et al. J Alzheimers Dis. 2018;66(4):1463-1470.
3. Maslach C, Leiter MP. World Psychiatry. 2016;15(2): 103-111.

4. Malach-Pines A. Int J Stress Manag. 2005;12(1):78-88.
5. World Health Organization. May 28, 2019. Accessed October 8, 2024. <https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases>.

PsychU is supported by Otsuka Pharmaceutical Development & Commercialization, Inc. (OPDC) and Otsuka America Pharmaceutical, Inc. (OAPI) – committed supporters of the mental health treatment community. The information provided through PsychU is intended for the educational benefit of mental health care professionals and others who support mental health care. It is not intended as, nor is it a substitute for, medical care, advice, or professional diagnosis. Health care professionals should use their independent medical judgement when reviewing PsychU's educational resources. Users seeking medical advice should consult with a health care professional. No CME or CEU credits are available through any of the resources provided by PsychU. Some of the contributors may be paid consultants for OPDC and OAPI. ©2025 Otsuka Pharmaceutical Development & Commercialization, Inc. All rights reserved.

Among Behaviors Observed In Patients With Dementia, Agitation Has Been Shown To Have The Strongest Correlation With Caregiver Burnout

Correlation Of Burnout Scores With Caregiver Distress By Dementia Symptom



Caregivers experienced higher burnout when patients showed behaviors such as agitation/aggression, irritability, and aberrant motor behavior vs more passive symptoms like apathy, depression, and delusions.

*P<0.05; **P<0.01.

Reference: Hiyoshi-Taniguchi K, et al. Clin Gerontol. 2018;41(3):249-254.

Comprehensive Treatment Plans May Include Nonpharmacologic And Pharmacologic Interventions

The following guidelines recommend treating agitation and other behavioral symptoms with nonpharmacologic interventions and adding pharmacologic interventions when indicated

APA

The 2007 APA practice guideline for the treatment of patients with Alzheimer's disease and other dementias¹

The 2016 APA practice guideline on the use of antipsychotics to treat agitation or psychosis in patients with dementia²

Harvard South Shore Program

The 2021 Harvard South Shore Program updated treatment algorithm for behavioral and psychological symptoms in dementia³

AAN

The 2018 AAN guidelines for mild cognitive impairment⁴

AAN, American Academy of Neurology; APA, American Psychiatric Association.
References:

1. Rabins PV, et al. Am J Psychiatry. 2007;164(12 Suppl):5-56.
2. Reus VI, et al. Am J Psychiatry. 2016;173(5):543-546.
3. Chen A, et al. Psychiatry Res. 2021;295:113641.
4. Petersen RC, Neurology. 2018;90(3):126-135.

Inappropriate Use Of Psychotropic Drugs In LTC Settings

There has long been concern about inappropriate use of psychotropic drugs, namely antipsychotics, in LTC residents¹



A 1986 investigation into quality of care in nursing homes found that psychotropic drugs were being used inappropriately to sedate patients to keep behavioral- and workforce-related issues at bay¹



In 2006, the Psychosocial Outcome Severity Guide implemented strategies to reduce inappropriate use of psychotropic drugs in LTC settings²



In 2012, CMS amplified monitoring use of psychotropic drugs in nursing home residents through targeted quality measures for both short- and long-term stays²



CMS continues to monitor psychotropic drug use in nursing home residents, with a focus on appropriate utilization²

CMS, Centers for Medicare & Medicaid Services; LTC, long-term care.

References:

1. Hughes C, Lapane K. Drugs Aging. 2005;22(4):339-351.
2. Grimm CA. Long-term trends of psychotropic drug use in nursing homes. US Department of Health and Human Services; 2022.

PsychU is supported by Otsuka Pharmaceutical Development & Commercialization, Inc. (OPDC) and Otsuka America Pharmaceutical, Inc. (OAPI) – committed supporters of the mental health treatment community. The information provided through PsychU is intended for the educational benefit of mental health care professionals and others who support mental health care. It is not intended as, nor is it a substitute for, medical care, advice, or professional diagnosis. Health care professionals should use their independent medical judgement when reviewing PsychU's educational resources. Users seeking medical advice should consult with a health care professional. No CME or CEU credits are available through any of the resources provided by PsychU. Some of the contributors may be paid consultants for OPDC and OAPI. ©2025 Otsuka Pharmaceutical Development & Commercialization, Inc. All rights reserved.

The Interdisciplinary Team Is Important For Ensuring Appropriate Use Of Antipsychotics In The LTC Setting



The Interdisciplinary Team must address any triggers of distress, including¹:



Psychological



Medical



Physical



Environmental

CMS.gov²

- Tracks use of antipsychotics in nursing homes
- Seeks to discourage overutilization of psychotropic medications in nursing homes

Documentation¹

- Nonpharmacological approaches must be documented first
- Indication for antipsychotic prescriptions must be well-documented

Limited Antipsychotic Use¹

- Given only when necessary to treat a specific diagnosed and documented condition
- Received in conjunction with GDR and other nonpharmacologic interventions
- As-needed orders limited to 14 days

CMS, Centers for Medicare & Medicaid Services; GDR, gradual dose reduction; LTC, long-term care.

1. State operations manual appendix PP – Guidance to surveyors for long term care. Centers for Medicare & Medicaid Services (CMS). Rev. 225. Accessed October 13, 2024. <https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf>.

2. Oliveira I, et al. Antipsychotic medication prescribing in long-term care facilities increased in the early months of the COVID-19 pandemic. Assistant Secretary for Planning and Evaluation. Published March 8, 2022. Accessed October 13, 2024. <https://aspe.hhs.gov/sites/default/files/documents/0fee85bc07c28a700da764d0e9517664/antipsychotic-medication-ltcf.pdf>.

The LTC Industry Is Currently Facing A Serious Labor And Economic Crisis*



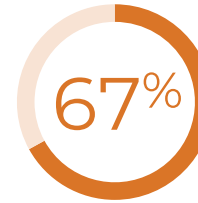
The ongoing struggle to find caregivers in this setting may affect quality of care for patients



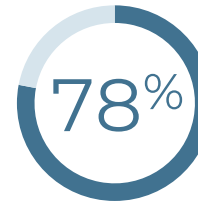
CMS plans to propose a new federal staffing mandate to address current staffing challenges in nursing homes



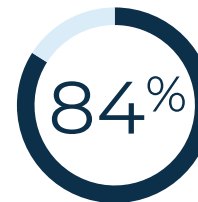
Are having to turn away prospective residents



Are concerned their facility may have to close due to persistent workforce challenges



Have hired temporary agency staff to adjust for staffing shortages



Are facing moderate to high levels of staffing shortages†

*According to a recent AHCA survey of 524 NH providers. †Defined as: "On one or more occasion, you could not fill all your shifts without agency or asking people to work overtime/extra shifts."

AHCA, American Health Care Association; CMS, Centers for Medicare & Medicaid Services; LTC, long-term care; NH, nursing home.

Reference:

American Health Care Association. 2023. Accessed October 11, 2024. <https://www.ahcancal.org/News-and-Communications/Fact-Sheets/FactSheets/SNF-Survey-December-2022.pdf>.

CMS Maintains Focus On Regulating Inappropriate Antipsychotic Use

Challenges associated with antipsychotic use in LTC facilities can include:



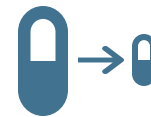
Questions about appropriate use counting against facilities' overall antipsychotic measures¹



Ambiguity around family involvement in antipsychotic decision-making for patients with dementia²



Risk of negative impact on regulatory and quality measures associated with antipsychotic use¹



High burden of documentation to support appropriate utilization, including gradual dose reduction³

There is a need for increased guidance surrounding appropriate antipsychotic use in LTC facilities⁴

CMS, Centers for Medicare & Medicaid Services; LTC, long-term care.

References:

1. AMA. Accessed October 13, 2024. <https://www.ama-assn.org/system/files/a22-703.pdf>.

2. Tjia J, et al. J Am Geriatr Soc. 2017;65(1):59-65.

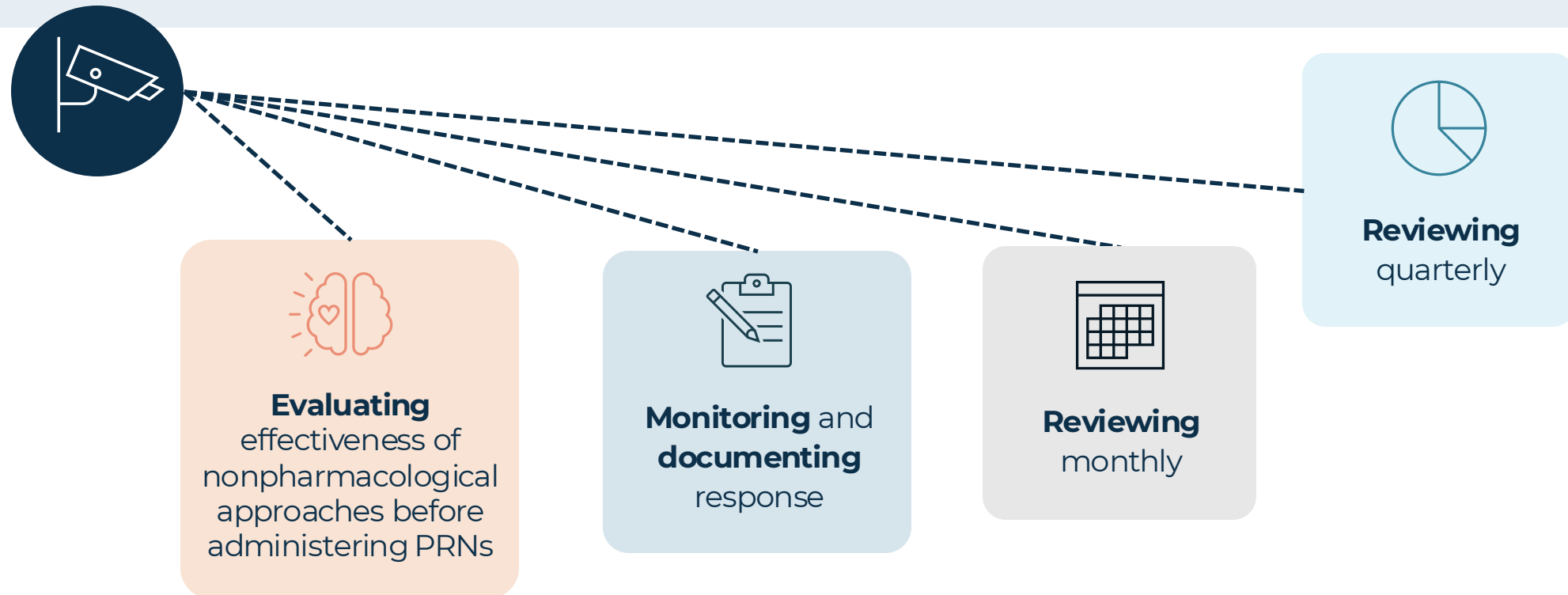
3. Ghairatmal M, et al. Am J Geriatr Psychiatry. 2020;28:4S.

4. Hughes C, Lapane K. Drugs Aging. 2005;22(4):339-351.

PsychU is supported by Otsuka Pharmaceutical Development & Commercialization, Inc. (OPDC) and Otsuka America Pharmaceutical, Inc. (OAPI) – committed supporters of the mental health treatment community. The information provided through PsychU is intended for the educational benefit of mental health care professionals and others who support mental health care. It is not intended as, nor is it a substitute for, medical care, advice, or professional diagnosis. Health care professionals should use their independent medical judgement when reviewing PsychU's educational resources. Users seeking medical advice should consult with a health care professional. No CME or CEU credits are available through any of the resources provided by PsychU. Some of the contributors may be paid consultants for OPDC and OAPI. ©2025 Otsuka Pharmaceutical Development & Commercialization, Inc. All rights reserved.

Medications Are Subject To Regular Monitoring For Each Resident

Required medication monitoring specified by CMS includes:



CMS, Centers for Medicare & Medicaid Services; PRN, as-needed.

Reference: State operations manual appendix PP – Guidance to surveyors for long term care. Centers for Medicare & Medicaid Services (CMS). Rev. 225. Accessed October 13, 2024.
<https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf>.

Certain Circumstances Warrant Evaluation Of A Resident And Medication(s), Although The Content And Extent Of The Evaluation May Vary With The Situation

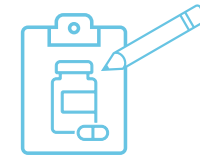
The evaluation process is important when selecting initial medications and/or nonpharmacological approaches and when deciding whether to modify or discontinue a current medication



- New, persistent, or recurrent clinically significant symptom or problem
- Worsening of an existing problem or condition
- Clinically significant change in condition/status
- Admission or readmission



Orders for PRN antipsychotics which are not prescribed to treat a diagnosed specific condition or do not meet the PRN requirements for psychotropic and antipsychotic medication



- Irregularity identified in the pharmacist's medication regimen review
- New medication order or renewal of orders

PRN, as-needed.

Reference: State Operations Manual Appendix PP – Guidance to Surveyors for Long Term Care. Centers for Medicare & Medicaid Services (CMS). Rev. 225. Accessed October 13, 2024.
<https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf>.

Specific Situations May Require Consideration Of Antipsychotic Medication

Patient-centered care, including a complete assessment and nonpharmacologic strategies, should be attempted prior to initiating pharmacologic therapy with antipsychotic medication¹



Dangerous/distressing symptoms were not relieved with multiple nonpharmacologic approaches (if not clinically contraindicated)¹



Dangerous/distressing symptoms returned after gradual dose reduction attempt



Symptoms are significantly distressing to the resident



Behavioral symptoms present a danger to resident or others

Examples of groups focused on reducing inappropriate antipsychotic use:



DRIVE TO DEPRESCRIBE
Optimizing Medication Use in PALTC

With resources from AMDA to help optimize medication use in long-term care facilities²



MDS provides a system of checks and balances to improve antipsychotic oversight³

AMDA, American Medical Directors Association; MDS, Minimum Data Set

1. State operations manual appendix PP – Guidance to surveyors for long term care. Centers for Medicare & Medicaid Services (CMS). Rev. 225. Accessed October 13, 2024. <https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf>.

2. Post-Acute and Long-Term Care Medical Association. Accessed October 13, 2024. <https://paltmed.org/drive-deprescribe>.

3. Project Pause: effective solutions for improving clinical care in long-term care settings. Published 2020. Accessed October 13, 2024. https://www.agingresearch.org/wp-content/uploads/2020/12/Project_PAUSE_Final.pdf.