

Using Rehabilitation Therapies to Reduce Antipsychotic Use and ED Visits in Individuals With Dementia



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ABSTRACT

Alzheimer's disease and related dementias represent a significant and growing health care burden in the United States. This article describes the implementation of a rehabilitation-driven, interdisciplinary care model and its impact on antipsychotic medication use and emergency department visits among individuals with dementia in skilled nursing facilities. The approach integrates a research-based dementia staging protocol into occupational, physical, and speech therapies to create individualized care plans that leverage preserved function and the development of customized care strategies. These plans are integrated into facility-wide practices through staff training and ongoing monitoring. Data from 3 affiliated skilled nursing facilities demonstrate significant reductions in antipsychotic use and emergency department visit rates following program implementation. The data suggest that a therapy-forward, person-centered care model can meaningfully reduce the risks associated with pharmacologic interventions and acute hospitalizations, offering an effective strategy for improving dementia care outcomes.

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Problem and Significance

Alzheimer's disease and related dementias (ADRDs) are one of the largest health care cost drivers in the United States, reaching \$360 billion in 2026 and expected to exceed \$1 trillion by 2050.¹ Nationally, 42% of residents in a long-term care (LTC) facilities have some degree of cognitive impairment with ranges from 31% to 70%.²

Risk factors for adverse health events and mortality with individuals with ADRD are myriad, but 2 notable risks are acute hospital management and use of high-risk medications.

Hospital management for residents of nursing facilities is commonly via an emergency department (ED) visit. ED visits are more expensive for individuals with dementia—with an average cost per Medicare/Medicaid beneficiary of \$6028 (vs \$4504 for individuals without ADRD), and ED visits for persons with dementia are more likely to result in inpatient admission and have a higher associated mortality.³

Antipsychotic agents can assist with the management of challenging resident behaviors, but research clearly establishes that these

medications increase health risks for older adults⁴ and the likelihood of hospitalization.⁵ Reducing the use of antipsychotics in skilled nursing facilities (SNFs) has been a national initiative for some time.

Research supports that a person-centered care approach is highly effective in reducing behavioral symptoms associated with dementia,⁶ reducing the need for antipsychotics and inpatient management. Despite this evidence, most nursing facilities report significant barriers to implementing nonpharmacologic interventions⁷ or effective person-centered care approaches.⁸ Medical directors and attending practitioners responsible for LTC populations often find themselves caught between competing imperatives where the care team is desperately in need of strategies, the most straightforward therapy is one that should be actively avoided, and the best alternatives are difficult to implement.

Study Design

This study represents a retrospective, pre-post program evaluation of administrative quality measure (QM) data across 3 affiliated SNFs. Outcomes were assessed using publicly reported Centers for Medicare & Medicaid Services (CMS) QM data collected before and after implementation of the rehabilitation-driven dementia care program at each facility. The primary outcomes of interest—antipsychotic medication use and ED visit rates—were extracted from CMS QM reporting periods spanning program

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implementation at each site and compared against pre-implementation baselines and contemporaneous national averages. This study was conducted as a quality improvement initiative and was not subject to institutional review board oversight, as no individually identifiable patient data were collected or analyzed.

Innovation

Leveraging the research in preserved function in individuals with dementia by Claudia Allen⁹ and utilizing the therapeutic principles of habilitation of function through adaptation and compensation, several affiliated SNFs employ a therapy-driven interdisciplinary approach to caring for dementia residents in a manner that reduces behavioral disorders with less reliance on psychoactive medications and, in turn, leads to a decrease in hospitalizations.

The approach was developed by occupational therapist Dr Gina Tucker-Roghi. Dr Tucker-Roghi used the Allen Cognitive Levels as a basis for the development of person-centered care pathways, utilizing the evaluation and treatment skills of rehabilitation professionals—occupational and physical therapists and speech-language pathologists—which are then transitioned to the facility care team for ongoing execution.

The role of the therapists is 3-fold. First is resident evaluation and treatment to establish the individual resident's optimal care facilitations and adaptations. In contrast to rehabilitative treatment plans where improvement in function through therapeutic intervention is the objective, treatment plans here are developed to optimize and maintain function via adaptations and compensations specific to the resident's preserved abilities, medical presentation, neurosensory function, and life history. As treatment planning of this type is within the scope and skill of physical, occupational, and speech therapists, this can then be the doorway through which a systematic program of person-centered care for individuals with AD/DR becomes accessible. It can be theorized that care providers who report difficulty with nonpharmacologic solutions are struggling *because* they are trying to apply a one-size-fits-most approach. The therapist's ability to glean the resident's unique preserved abilities and then trial multiple adaptive techniques until success is achieved is at the core of the approach's success.

The next role of the therapist is to train the resident's care team in those specific facilitations and adaptations, and it is here where the commitment of the facility's interdisciplinary team (IDT) is critical. Facilities that adopt the programming approach employ resident-specific communication techniques, cueing systems, care adaptations, conversational topics, and environmental adjustments—as developed by the treating therapist—to all care and social encounters. The nursing and certified nursing assistant (CNA) teams who bear the largest responsibility for daily care and treatment then have a patient-specific inventory of strategies that are most likely to facilitate care tolerance and decrease potentially adverse behavioral responses. Activities teams similarly have an expanded repertoire of ability-specific enrichment activities that facilitate meaningful engagement.

The final role of the therapist is ongoing monitoring and adjustment. Rapid detection of change and care plan adjustment are essential as individuals with AD/DR are a continuously changing population—strategies that are effective in the spring may no longer be effective by autumn. The relevant therapy professionals reassess and re-establish an updated care delivery approach when existing strategies lose effectiveness. It is not viable to assume that a care team can simply adapt in real time to advancing disease and changing behaviors. A theoretical case and care strategies sheet can be found in the supplemental materials.

Implementation

Facility adoption and rollout of the program is organized into preparation, implementation, and maintenance phases. See [Figure 1](#) for an implementation roadmap that visualizes these steps.

In preparation, the operation selects an evidence-based dementia staging framework to use as a uniform tool for assessment and establishing a facility-wide vocabulary. There are many approaches to person-centered care for individuals with AD/DR; for example: the Positive Approach to Care, the 4Ms Framework, or the Montessori method. The innovation detailed here employs the Allen Cognitive Model, selected in part for the inclusion of a dementia staging component. Utilizing a care approach that either integrates a dementia staging system or one that can be easily partnered with a dementia staging scale is recommended—the ability to easily orient care team members (nurses, CNAs, activities, and social services personnel) to the patient's level of abilities as it corresponds to their stage of dementia expedites the care response.

Once a framework has been selected, the facility identifies one or more lead therapists to become dementia subject matter experts, then organizes and delivers training and education to the facility. The majority of effort and expense occurs here via lead therapist enhanced-dementia training (typically a single-day continuing education course offered in person or virtually), staff time for both giving and receiving training, and materials purchases (including workbooks and assessment tools in the chosen staging method and the facility's choice of environmental systems, such as shadowboxes or whiteboards). A facility may choose to pursue formal dementia training for as few as 1 to 2 therapists or expand to include multiple IDT members depending on facility size. Once the team has a qualified therapist, large-scale facility training is the most significant effort, as effective rollout depends on 1 to 2 hours of training for *all* staff members in all departments, focusing on the specific support activities that can be provided by each team (nursing, activities, housekeeping, environmental services, etc).

In the implementation phase, therapy staff screens residents for program candidacy, initiating treatment plans for those who will benefit, and engaging in ongoing staff training both for individuals on caseload and more generally to continually reinforce the systems and processes developed in phase 1. Costs here may be offset by revenue—evaluation and treatment time by qualified therapists may be eligible for reimbursement through Medicare Part B or other benefits, which includes time spent in staff education and training for resident-specific cues and care techniques when delivered as part of a physician-approved therapy treatment plan.

The duration of the preparation and implementation phases is dependent on facility size and staff allocation. Identifying lead therapists and completing continuing education courses can be completed quickly, potentially in a matter of days. Facility-wide training can be completed over a period of several weeks to 1 to 2 months. Resident screening, assessment, and treatment are then performed progressively over time, with candidate residents moving through therapy episodes as efficiently as qualified therapy staff allows.

Maintenance includes ongoing facility commitment to the systems and processes developed and executed in phases 1 and 2, with continuous resident monitoring to detect and respond to change. New hire orientation must include the facility's staging method, care protocols, and communication systems. Medical providers play a central and proactive role in the success of this interdisciplinary care model. Physicians and nurse practitioners collaborate closely with the rehabilitation and nursing teams, reviewing therapy-generated care plans and issuing orders for the individualized interventions and environmental adaptations developed through the program. A primary goal of this collaboration is the systematic reduction of

Dementia Care Roadmap



Preparation: Establishing the framework, champions and systems.

- Step 1: Select a dementia staging tool to adopt into facility operations to establish a consistent vocabulary and information framework. For example, The Allen Cognitive Levels, Teepa Snow's GEMS Program, the Functional Assessment Staging Tool (FAST).
- Step 2: Develop therapist subject matter experts in the selected staging tool via in-person or virtual continuing education.
- Step 3: Provide facility-wide training in patient-specific dementia care and management, and develop facility-specific protocols and systems.
 - All-department orientation to the stages of dementia per the operation's chosen staging method (from Step 1).
 - Individual department education for their team-specific strategies to sustain the health and wellness of individuals with ADRD
 - Facility development of - and training in - communication systems to relay: dementia stage, care strategies, environmental organization, cues, resident life history and current functional abilities. For example:
 - ✓ Color coding on name plates or wheelchair accessories
 - ✓ Shadow boxes or Life Story Boards with conversational prompts and life-history reminders
 - ✓ Kardex cards
 - ✓ Detailed care sheets



Implementation: Treating candidate residents and developing individualized care pathways.

- Establishing dementia stage and detecting persevered abilities
- Evaluating functional abilities, sensory systems/responses, and care and socialization/activity environments
- Goal development that integrates adaptations and trained care team support
- Treatment activities (both individual and group) to identify the most effective:
 - Environmental organization and adaptations
 - Task adaptations
 - Cues and facilitative techniques that are simple and reproducible
 - Compensations
- Caregiver training established with reliable reverse demonstration, supported by referenceable materials



Maintenance: Ensuring program longevity and responding to changing residents.

- Integrate program details into new hire orientation, reinforce the program through facility meetings and inservices.
- Establish patient identification and change-detection systems, e.g., Rehabilitation screenings, Risk Committees, Change of Condition Meetings.
- Develop a QAPI response to set program goals and track outcomes.

Fig. 1. Dementia care roadmap. The visualization above summarizes the critical steps to creating a whole-facility environment optimized for individualized, person-centered care for individuals with ADRDs.

antipsychotic medications through gradual dose reduction, which is initiated and monitored by the medical provider as non-pharmacologic strategies are implemented and behavioral symptoms stabilize. Nursing staff, including nursing assistants, serve as the critical link between the therapy-developed care plan and its execution at the bedside. As the team members with the highest frequency of resident contacts, nurses and CNAs are responsible for consistently applying resident-specific cueing strategies, communication techniques, and behavioral interventions throughout daily care routines. Nurses also play a vital surveillance role, monitoring residents for changes in behavioral presentation or functional status and initiating timely therapy re-evaluations when existing strategies lose effectiveness. Regular IDT meetings provide a structured forum for medical providers and nursing staff to collectively assess resident response to therapeutic interventions, adjust medication regimens accordingly, and ensure that the transition away from pharmacologic management is conducted safely, incrementally, and in alignment with each resident's individualized care plan. Existing rehabilitation screening programs, change of condition systems, and risk management committees (eg, behavior management, fall reduction) are additional forums to monitor residents for changing needs, and utilizing existing systems and training/orientation schedules neutralizes ongoing costs.

While not every resident is an appropriate candidate for the interventions associated with the programming—residents with functional impairments or behavioral or mental health diagnoses without associated cognitive impairments are typically more appropriate for other types of habilitative/rehabilitative approaches—the impact of the programming is almost always visible facility wide via the QMs. Three affiliated SNFs who self-reported high engagement with the programming were analyzed for use of antipsychotics and prevalence of ED visits. The facilities are represented as SNF1, 2, and 3 in the data visualizations.

Each facility developed approaches to the programming optimal to their operations; however, all employed the following general framework:

1. One to 2 lead therapists were identified to roll out the program and received full-day training in the Allen Cognitive Model and dementia-focused habilitative treatment.
2. All facility staff received 1 to 2 hours of dementia-specific training and education prior to program rollout, and the facilities include program-specific training in orientation of all new hires.
3. Each candidate resident receives an assessment by an occupational therapist or a speech therapist to establish their Allen Cognitive Level.
4. Therapists develop individual “life story boards” to communicate a resident's personal history, interests, and hobbies in a format that also conveys to the care team the best communication and cueing strategies for the resident.
5. Therapists establish resident-specific cues, activity facilitation strategies, and environmental adaptations that are conveyed to the care team through facility care-communication systems.
6. Ongoing monitoring and screening by the teams for rapid detection of changes in ability triggers therapy reevaluations and adjustments to the resident's cueing and adaptation regimen.
7. See Table 1 for a selection of the assessments, objectives, and treatment interventions used by therapists within the program.

Candidate residents either had an active diagnosis of dementia or presented with a score of less than 12 of 15 on the Brief Inventory of Mental Status. All residents presented with multiple other medical diagnoses, but none were used for inclusion or exclusion purposes.

The facilities reported that 30% to 60% of their LTC census has been evaluated through the program. While therapists at the subject facilities are in-house team members, the program can also be effectively supported in a contract-therapy model when staff consistency is prioritized.

Evaluation

Antipsychotic Use

The first metric analyzed was the use of antipsychotic medication in long-stay residents before and after program implementation compared with the national average, using the CMS QM data (Figure 2). The national average of residents receiving antipsychotic medications across the implementation periods ranged between 14% and 15%. In all 3 facilities, there was no statistically significant difference in use of antipsychotic medications compared with the national averages *before* program implementation. But all showed a statistically significant decrease in antipsychotic use *after* program implementation, with decreases ranging from 44.7% to 97.2% compared with the preprogram value, and variance from the national average ranging from 7.38 to 12.76 points *below*. *t* Tests were used for metric analysis (Table 2). None of the facilities detected any other demographic, clinical programming, or systems-based contributors to this outcome. Initiation of the program resulted in an immediate decline in antipsychotic use, and ongoing maintenance of the programming sustained a percentage of use well under the national average.

ED Visits

ED visits are a claims-based QM with data available from 2019 to 2025. The QM reports an observed and adjusted rate of ED visits relative to an expected rate of ED visits per 1000 patient-days. To establish a consistent measurement between facilities of different sizes, the data were converted to a single-score ratio of the adjusted and expected values. Both SNF 1 and SNF 2 showed ED visit ratios higher than the national average prior to implementation and then significantly better ratios following program implementation (Figure 3). *t* Tests were used for metric analysis. Values at both facilities have remained below the national average throughout the most current CMS reporting quarter. Neither facility detected any other demographic, clinical programming, or systems-based contributors to this outcome. Because SNF 3 initiated their program prior to the inclusion of this metric in the QMs, any potential impact precedes the reporting, so they are not included in the data visualization; however, in the last 2 CMS QM reporting years, SNF3's adjusted ED visit rate has consistently been below the national average.

Limitations

As a retrospective, pre-post program evaluation using administrative CMS QM data, this study has several inherent limitations. The absence of a concurrent control group limits causal inference, as secular trends in antipsychotic stewardship, CMS regulatory pressure, and postpandemic shifts in SNF census composition may have independently influenced outcomes. The analysis is drawn from 3 affiliated facilities selected based on self-reported program engagement, limiting generalizability, and program fidelity was not formally measured across sites. Finally, the majority of the authoring team has a contractual relationships with the facilities analyzed; independent external validation would strengthen the evidence base for broader adoption of this care model.

Table 1
Selected Assessments and Objectives

Foundation Assessment	Allen Cognitive Assessment, administered to establish baseline cognitive performance level. Subtests Include the Allen Diagnostic Module Placemat, Allen Cognitive Level Screen		
Discipline	Standardized Assessments Options	Possible Treatment Objectives Options ^{a,†}	Therapeutic Interventions [‡]
OT	• Mini-Mental Status Exam • Functional Assessment Staging of Alzheimer's Disease (FAST) • Frontal Behavioral Inventory (effective when cognitive impairments have a nondementia etiology) • Routine Task Inventory • Champaign Sensory Processing Caregiver Checklist • Pain Assessment in Advanced Dementia	• Development of ADL function adaptations • Sensory integration/sensory response management interventions • Identification of patient-specific ADL and sensory cues (verbal, visual, tactile, and multisensory) • Development of social engagement strategies • Development of de-escalation strategies • Activity adjustment (individual and group) for facilitation of engagement • Caregiver training (use of compensations, delivery of cues, maintenance of environmental adaptations, and effective reverse demonstration)	• Adaptations: ○ Resequencing ○ Task simplification ○ Pacing adjustments ○ Introduction/modification of adaptive equipment ○ Environmental management—physical ○ Environmental management—sensory • Cue introduction/cue customization/cue fading ○ Spaced retrieval techniques ○ Physical facilitation—hand over hand, physical guiding, tapered physical assistance (when possible)
ST	• FAST • The Dementia Communication Difficulties Scale • Functional Linguistic Communication Inventory • Cognitive-Linguistic Quick Test • Ross Information Processing Assessment—Geriatric • Rowland Universal Dementia Assessment Scale	• Identification of communication/cognitive-communication support strategies (written, digital, and verbal) • Identification of patient-specific communication cueing needs (verbal, visual, tactile, and multisensory) • Development of cognitive-communication enhancing environmental adaptations (lighting, cuing systems, and sensory management) • Caregiver training (use of compensations, delivery of cues, maintenance of environmental adaptations, and effective reverse demonstration)	• Sensory integration techniques: ○ Music/sound use or sound reduction ○ Tactile stimulation and response management ○ Movement/balance/coordination tasks ○ Distraction reduction/environmental response regulation • Performance/function stimulating activities: ○ Structured communication ○ Adapted recreational activities ○ Adapted mobility and ADL activities • Additional therapeutic interventions (eg, therapeutic exercise/activity, gait training, modalities) may be appropriate when musculoskeletal or neurologic impairments or pain are further complicating functional ability
PT	• Groningen Meander Walking Test • FAST • Short Performance Physical Battery Test • Timed Up and Go Test • Walking Speed Test • Four-Stage Balance Test • Backward Walking Test • Function in Sitting Test • Dementia Quality-of-Life Instrument • Pain Assessment in Advanced Dementia	• Development of mobility performance adaptations, including balance and fall reduction strategies • Development of patient-specific mobility performance cues (verbal, visual, tactile, and multisensory) • Adaptation of environment for mobility performance and safety • Caregiver training (use of compensations, delivery of cues, maintenance of environmental adaptations, and effective reverse demonstration)	

OT, occupational therapist; PT, physical therapist; ST, speech therapist.

The table shows a selection of the assessments utilized by the therapy disciplines from the subject facilities as well as a selection of treatment objectives and interventions.

^aDevelopment of treatment objectives and selection of interventions is always driven by the findings from evaluation and vary from patient to patient.

[†]There is significant therapeutic overlap between the disciplines; for example, both OT and PT provide interventions in support of transfer abilities. When multiple therapies are being provided at the same time, coordination between the teams is essential to avoid duplication of services and optimize the impact of complementary interventions.

[‡]Therapeutic intervention selections are applied by the treating therapists to the clinical areas within their scopes of practice and tailored to the patient's specific functional objectives and ongoing response to therapy.

Table 2
Antipsychotic Use Data Table

Participant SNF	Antipsychotic Use Before Program Implementation		Antipsychotic Use After Program Implementation			
	Variance from National Average	P Value	Variance from National Average	P Value	Change in Facility Average	Change in National Average
SNF 1	1.87	.059	−7.38	$P < .001$	−57.80%	−0.90%
SNF 2	−2	.51	−12.76	$P < .001$	−97.20%	−14.80%
SNF 3	−.94	.83	−7.49	$P < .001$	−44.70%	7.30%

The table shows the variance from the national average value for the QM data for antipsychotic medication use before and after program implementation, expressed in both variance from the average and change from the average preimplementation value. The change in the value in the national average over the implementation period is also displayed. The preprogram *P* values signify that QM values were not statistically better than the national averages prior to program implementation. The marked reduction in the *P* values postimplementation suggests that the subsequent improvement in QM scores was unlikely to be due to chance. *t* Tests were conducted to assess the statistical significance of differences in QM performance metrics.

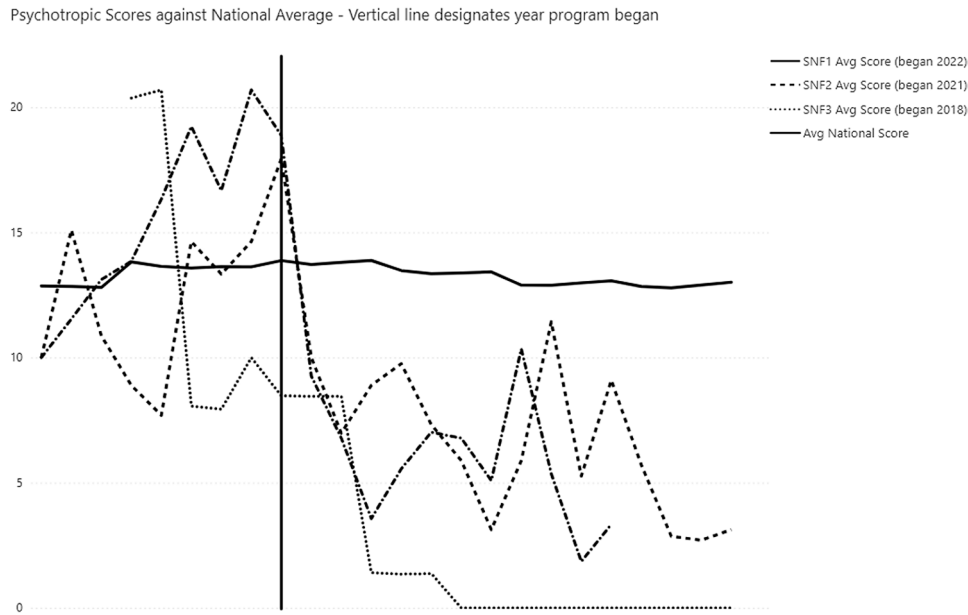


Fig. 2. Antipsychotic use trendlines. CMS QM data for use of antipsychotic medication show declines after program implementation, which is represented by the solid vertical line. The national average QM score for antipsychotic medication use is shown via the solid vertical line.

Comments

Data suggest that adopting a therapy-forward approach to a holistic, interdisciplinary care regimen yields markedly better benefits than one of general dementia management strategies and use of antipsychotic medications and creates a more conducive environment for individualized, person-centered care. Leveraging rehabilitation specialists' expertise in the development of diagnosis-centric techniques and adaptations distributes the responsibility for assessment, and utilizing the therapy treatment episode for patient-specific caregiver education to care team

members improves the delivery of highly individualized care plans. The front-loaded burden of individualized care is then offset by the reduction in adverse behaviors and overall improved acceptance of care. Medical providers can look to their therapy teams as partners to maintain patient function for as long as possible and provide a viable therapeutic approach to gradual dose reduction with antipsychotic use or avoid use of antipsychotic or other pharmacologic therapy entirely. This multidisciplinary and interdisciplinary approach to addressing the complexities and nuances of the ADRD population yields universally desired outcomes—reducing fragile individuals' use of high-impact and

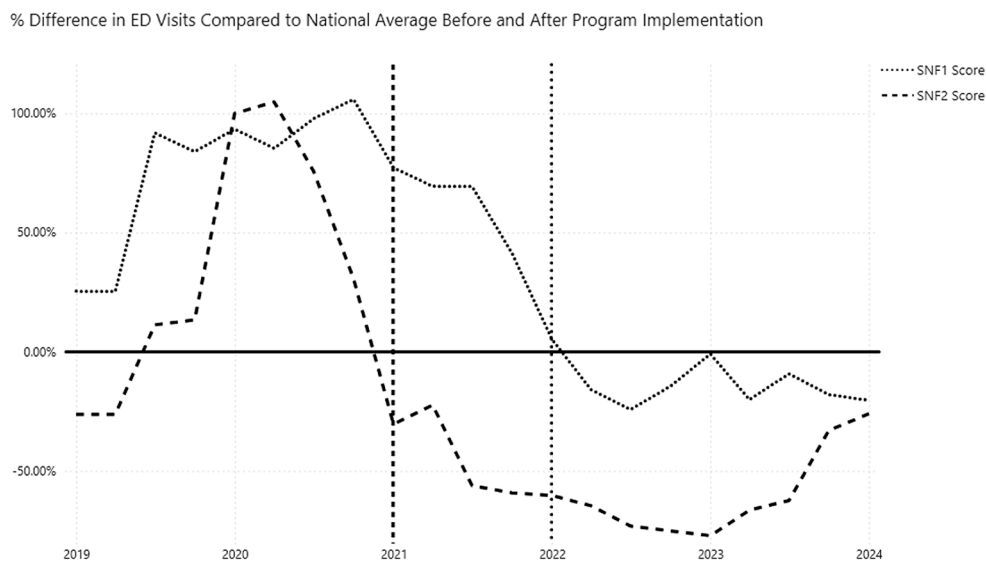


Fig. 3. ED visit trendlines. Both facilities for whom data are available showed reductions in ED visit QM data after program implementation. The vertical lines correspond to the implementation dates of the program represented by the matching horizontal line. National average ED visit QM data are represented by the solid horizontal line. A universal increase in ED visits is observed in 2022. This corresponds to the timing of a dashboard change in acute hospital data collection and appears to be a reporting artifact, as it affects all facilities as well as national and state averages in the same span of time.

potentially dangerous medications and keeping them safely out of the hospital.

Disclosure

The authoring team discloses that all authors except Dr K Steinberg have either an employment relationship with Ensign Services, Inc or a contractual/consulting relationship with Ensign Services, Inc or various operations affiliated with The Ensign Group. There are no blackout papers in the reference list. No other conflicts of interest are detected by the authors.

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Supplementary Data

Supplementary data related to this article can be found online at <https://doi.org/10.1016/j.jamda.2026.106429>.

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The pragmatic innovation described in this article may need to be modified for use by others; in addition, strong evidence does not yet exist regarding efficacy or effectiveness. Therefore, successful implementation and outcomes cannot be assured. When necessary, administrative and legal review conducted with due diligence may be appropriate before implementing a pragmatic innovation.