



Featured Article

Impact of programs to reduce antipsychotic and anticholinergic use in nursing homes

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Abstract

Introduction: Antipsychotics are used for behavioral and psychological symptoms of dementia (BPSD), but have risks. Anticholinergics can worsen outcomes in dementia. The Improving Antipsychotic Appropriateness in Dementia Patients (IA-ADAPT) educational program and Centers for Medicare and Medicaid Services' Partnership to Improve Dementia Care (CMS Partnership) promote improved care for BPSD. The purpose of this study was to evaluate the impact of these programs on medication use and BPSD among nursing home residents.

Methods: This quasi-experimental longitudinal study used Medicare and assessment data for Iowa nursing home residents from April 2011 to December 2012. Antipsychotic and anticholinergic use was evaluated on a monthly basis, and changes in BPSD were tracked using assessment data. Results are presented as odds ratios per month after exposure to IA-ADAPT or the start of the CMS Partnership.

Results: Of 427 eligible Iowa nursing homes, 114 were exposed to IA-ADAPT in 2012. Nursing home exposure to IA-ADAPT was associated with reduced antipsychotic use (OR, 0.93; 95% CI, 0.91–0.96) and anticholinergic use (OR, 0.96; 95% CI, 0.94–0.99), reduced use of excessive antipsychotic doses per CMS guidance (OR, 0.88; 95% CI, 0.82–0.93), and increased odds of a potentially appropriate indication among antipsychotic users (OR, 1.06; 95% CI, 1.02–1.11). The CMS Partnership was associated with reduced antipsychotic use (OR, 0.97; 95% CI, 0.95–0.99). IA-ADAPT was associated with increased documentation of delusions (OR, 1.04; 95% CI, 1.01–1.07) and delirium (OR, 1.03; 95% CI, 1.00–1.05), and there was a trend toward increased documentation of physical aggression (OR, 1.03; 95% CI, 1.00–1.06; $P = .051$). However, with the exception of delusions these increases primarily occurred in residents without dementia, who were not the subject of the intervention.

Discussion: This study suggests that IA-ADAPT and the CMS Partnership improved medication use. IA-ADAPT effects on BPSD are more difficult to interpret.

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Keywords: Antipsychotics; Anticholinergics; Dementia; Nursing home; Education; Quality

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1. Introduction

Antipsychotics are commonly used to manage behavioral and psychological symptoms of dementia (BPSD). Their probable overuse has been criticized because of evidence of limited efficacy and significant adverse effects [1]. These include a small increase in the risk of mortality and stroke, which led the Food and Drug Administration to require a black box warning on antipsychotic labels highlighting these risks. Despite these risks, antipsychotics are sometimes effective for BPSD and may be deemed necessary when symptoms are dangerous or severely distressful and other treatments have failed [2,3]. However, wide variability in antipsychotic use among nursing homes, not explainable by resident characteristics, suggests uncertainty about use in this population [4].

To address these issues, we developed a training program and toolkit to improve care and medication use for BPSD, the Improving Antipsychotic Appropriateness in Dementia Patients (IA-ADAPT) program, and conducted a dissemination study in partnership with stakeholders. IA-ADAPT program outlines a step-by-step approach to BPSD management, including evaluation of BPSD and nondrug interventions, and provides guidance on antipsychotic use in dementia based on the Agency for Healthcare Research and Quality-sponsored comparative effectiveness research review on off-label use of antipsychotics and Centers for Medicare and Medicaid Services (CMS) guidance for surveyors of long-term care facilities [5,6]. Education and resources were provided for several types of learners, including prescribers, nurses, direct care providers, and other providers. The resources included a set of decision aids. One contained a list of drugs that may contribute to delirium or BPSD, many of which have anticholinergic effects. IA-ADAPT highlighted anticholinergic toxicity as a cause of delirium and BPSD and discouraged anticholinergic use. People with dementia are particularly susceptible to the adverse cognitive and psychiatric effects of anticholinergics, and they are considered potentially inappropriate for use in older adults [7–9].

The primary goal of this study was to evaluate the effectiveness of IA-ADAPT in improving measures related to antipsychotic and anticholinergic use in nursing home residents, without negatively impacting BPSD. Although the focus was on patients with dementia, those without dementia were also included in primary analyses. The CMS Partnership to Improve Dementia Care in Nursing Homes (CMS Partnership) was announced near the beginning of the intervention period, creating a need to control for its effects and stimulating a secondary goal of this study—to evaluate the impact of the CMS Partnership on the same outcomes [10,11]. The CMS Partnership sets goals for reducing antipsychotic use in nursing homes and organized opportunities to share information about best practices and quality improvement strategies [12]. Because the CMS Partnership initially focused on reducing antipsychotic use but

not anticholinergic use, the analysis evaluating anticholinergic use provided some indication of whether IA-ADAPT effects could be disentangled from those of the CMS Partnership in analyses.

2. Methods

2.1. Data sources

This study used Medicare, minimum data set (MDS), and Certification and Survey Provider Enhanced Reports data from 2011 and 2012. Measures were characterized monthly from April 2011 (1 year before launch of the IA-ADAPT intervention) through December 2012 to perform longitudinal analyses. [Supplementary Fig. A.1](#) illustrates the study timeline.

2.2. Interventions

The web-based IA-ADAPT program is an evidence-based training program with an accompanying toolkit focused on care for BPSD [13]. The program includes a series of case-based lectures spanning approximately 2 hours. The toolkit consists of clinical decision aids: laminated pocket guides also available as a mobile device application, an algorithm for treating BPSD, a tip sheet for managing a behavioral crisis, and a shared decision-making guide on antipsychotic use. The decision aids were provided to help participants recall and apply the information conveyed in the training and enhance procedural learning through such application [14]. The web-based IA-ADAPT program became available in April 2012 [13]. The content was also delivered through presentations at professional meetings where laminated copies of decision aids were provided. Stakeholders assisted with marketing the web-based education and arranging presentations.

On March 29, 2012, CMS announced the Initiative to improve behavioral health and reduce the use of antipsychotics in nursing homes, with a goal to reduce antipsychotic use by 15% by the end of 2012 [10]. This initiative, later renamed the Partnership to Improve Dementia Care in Nursing Homes, aimed to reduce antipsychotic use by promoting person-centered care and nonpharmacologic interventions for BPSD [11]. It stimulated cointerventions such as educational offerings and quality improvement activities.

2.3. Study population

This study included residents of nursing homes in Iowa from April 2011 to December 2012. Residents were eligible for inclusion in a given month if they were aged ≥ 65 years for the entire year being evaluated, eligible for fee-for-service Medicare benefits and Medicare Part D for the current month and prior 3 months, and residents of a nursing home for ≥ 14 days that month. Residents were excluded during a month if they had > 15 days during which medication use was unobservable because of hospital inpatient

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