

Advanced Practice Registered Nurses' Quality Improvement Efforts to Reduce Antipsychotic Use in Nursing Homes

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In 2011, the Office of Inspector General (OIG) of the Department of Health and Human Services released the report *Medicare Atypical Antipsychotics Drug Claims for Elderly Nursing Homes Residents*.¹ This report was prompted by a legislator's concern about the extent that elderly nursing home residents were receiving antipsychotic medications for off-label conditions. OIG staff evaluated Medicare claims data from Part B and Part D and the Minimum Data Set (MDS) to identify Medicare payments for atypical antipsychotic drugs for elderly (65 years and older) nursing home residents from January 1, 2007, to June 30, 2007.

The OIG report revealed a clear picture of overuse of atypical antipsychotic medication for

elderly nursing home residents in the United States and that the cost of the overuse had financial implications for the Medicare program. Importantly, antipsychotic medications reportedly were placing elderly nursing home residents at risk for medical complications and increased risk of early death. In 2007 and 2011, the Agency for Healthcare Research and Quality confirmed these findings in comparative effective reviews. Adverse events reported for atypical antipsychotic use among elderly nursing home residents were urinary symptoms, extrapyramidal symptoms, and increased risk of death.^{2,3}

The findings from these reports prompted the Centers for Medicare & Medicaid (CMS) in 2012 to establish a National Partnership to Improve Dementia Care in Nursing Homes.^{4,5} This private-public partnership developed a multidimensional strategy to address the public health issue affecting 14% of the nursing home population and health care costs. According to the 2011 OIG report, the costs of overuse of antipsychotic medication to Medicare was \$309 million during the 6 months preparing the report.¹

The purpose of this article is to share the quality improvement (QI) efforts to reduce antipsychotic medication use in nursing home residents in a federally funded initiative that used full-time advanced practice registered nurses (APRNs). These APRNs were embedded in 16 nursing homes in Missouri from 2014 to 2016.

THE MOQI MODEL

In 2012, the Medicare-Medicaid Coordination Office, in collaboration with the Center for Medicare & Medicaid Innovation, funded an

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effort called *The Initiative to Reduce Avoidable Hospitalizations Among Nursing Facility Residents*.⁶ The University of Missouri Sinclair School of Nursing was awarded 4-year funding (fall 2012 to fall 2016) to work on key goals, one of which was to reduce antipsychotic medication use among residents with dementia. Sixteen nursing homes were recruited in Missouri that had high transfer rates according to the Medicare Hospital Quality Chartbook of 2012.⁷ The nursing homes ranged in size from 120 to 321 beds (total 3160 beds) and were in urban, metropolitan, and rural areas within 80 miles of one of the state's large cities. Eligible residents had to have lived in the nursing home a minimum of 100 days and have traditional fee-for-service Medicare.

The Missouri Quality Initiative (MOQI) model embedded a full-time APRN in each of the 16 MOQI nursing homes. The APRNs provided resident assessment of acute and chronic illnesses^{8,9} care management, medication reconciliation and/or management, staff education and support for early illness recognition, and facilitated the use of Interventions to Reduce Acute Care Transfers (INTERACT) tools.¹⁰ Specifically, they worked with nursing home staff and leadership to improve the use of advanced care planning/advance directives, health information technology, and QI methods to improve systems of care delivery to improve quality of care and resident outcomes. A support team assisted the APRNs in achieving these goals. This team consisted of a master's prepared licensed clinical social worker, health information technology coach, QI/INTERACT coach, project supervisor, and medical director.

Year 1 of the grant was focused on start-up activity, including policy development, APRN recruitment and orientation, and education of the nursing staff about the role of the APRN in the nursing home. By quarter 4 of 2013, all the MOQI nursing homes had embedded APRNs who met monthly with the support team and university researchers to work on specific goals of the model. The majority of the APRNs had not worked in nursing homes, so at the start of the initiative, APRNs were educated about the regulations and routines of nursing home care and focused on issues that would directly affect the success of MOQI in key areas. Challenges observed in 2013 related to the lack of proficiency by the MOQI APRNs in QI efforts.

One critical area for improvement was antipsychotic medication reduction for residents

with dementia. Attempting to manage behavioral and psychological symptoms of dementia with antipsychotic medications represents the most common off-label use of these medications³ in nursing homes. The 2007 Comparative Effectiveness Review of off-label use of atypical antipsychotics found insufficient evidence to reach conclusions about the efficacy of atypical antipsychotic medications for any of the off-label indications.³ A key effort of the MOQI APRNs was to reduce the use of antipsychotic medications among residents with dementia in these nursing homes.

METHODS

The research team implemented multiple QI approaches to address the complex issue of reducing antipsychotic medication use. These included (1) using a standard measure of the antipsychotic medication use; (2) providing feedback reports to each APRN and nursing home staff on their quarterly progress; (3) following up with leadership regarding their nursing home's progress in comparison to other homes in the study, state, and nation; (4) developing a QI plan for antipsychotic medication reduction that was led by each nursing home's APRN and included nursing home staff involvement; (5) providing education about dementia care best practices that was conducted and reinforced by APRNs in each nursing home; (6) participating in a 4-day dementia care mapping (DCM) training for select APRNs; (7) involving the medical director in the reduction efforts; and (8) conducting a focus group of APRNs to understand which quality improvement efforts used in MOQI they considered most effective in their homes.

Because the primary outcome measure was the actual reduction in antipsychotic medication use, it was important to use a standard approach to measure the use across the nursing homes. A standardized measurement is available using the quality measures (QMs)¹¹ that are calculated by the CMS from the MDS, which is resident assessment information routinely collected by all certified nursing homes. The MDS is collected at admission for each resident, updated quarterly or more frequently with changes in their condition, and transmitted to the CMS as mandated. The QMs are available to the public on the Web site www.nursinghomecompare.gov. One QM available that is calculated and reported by the CMS is the long-stay measure of *percentage of long-stay residents who received an*

antipsychotic medication. This measure was used to monitor actual usage in each participating nursing home to compare progress over time and across facilities.

Starting in quarter 4 of 2013, feedback reports were prepared for the 16 MOQI nursing homes documenting the individual scores for antipsychotic medication use for each home, with the state and national percentage averages on the graph (see the Supplemental Digital Content, Figure 1, available at: <http://links.lww.com/JNCQ/A495>). The Supplemental Digital Content, Figure 2 (available at: <http://links.lww.com/JNCQ/A496>) is the longitudinal graph of a single home's scores to help them monitor their progress over time. The reports used quarter 1 of 2013 as a baseline measure. The reports were sent to the APRNs and nursing home leadership in the month after the quarterly update. Discussions and review of the feedback reports and progress in usage reduction were held quarterly at monthly APRN meetings.

Each APRN developed a QI plan with their nursing home staff to work on antipsychotic medication reduction. The Project Supervisor reviewed the plan and followed up with the APRN during a monthly visit to the MOQI nursing home in year 2. All APRNs were educated about the Hand-in-Hand educational program developed by the CMS as part of the National Partnership to Improve Dementia Care in Nursing Homes.⁴ This educational program for nursing homes emphasizes person-centered care for people with dementia and the prevention of abuse.

Select APRNs participated in a 4-day DCM class. DCM is a method to evaluate the delivery of person-centered care and to improve the quality of care delivered to people with dementia living in nursing homes.^{12,13} DCM is underpinned by the social-psychological theory of personhood in dementia. Developed from the pioneering work of Kitwood, it is described as “a serious attempt to take the standpoint of the person with dementia, using a combination of empathy and observational skill.”^{9(14,p4)}

Attending physicians were challenged by the requests from the MOQI APRNs to attempt gradual dose reduction efforts on their residents in the early stages of the project. In year 2 of MOQI, the Medical Director provided a webinar for MOQI-attending physicians and their collaborating nurse practitioners titled “Reducing Antipsychotic Use in Nursing Homes: A Team

Approach.” The Medical Director also addressed the topic in the monthly newsletters sent to the attending physicians via e-mail. At the conclusion of the 4-year MOQI grant, the APRNs participated in a focus group to discuss which QI efforts they considered most effective in antipsychotic medication reduction.

RESULTS

The Figure shows the prevalence of antipsychotic medication use among 3 groups of nursing homes: the 16 MOQI homes (intervention) (dash line at the bottom of the figure); a matched comparison group ($n = 27$) of Missouri nursing homes (matched controls, solid line); and the balance of homes in Missouri ($n = 422$) (dash, dot line at the top of the figure) over a 3-year timeframe (years 2 through 4 of the study). (The matched control group method is detailed in another analysis of several QMs measuring effectiveness of the MOQI intervention with APRNs.¹⁵) This Figure clearly reflects a statewide decline in the use of antipsychotic medication. To test whether there was a difference in the slope over time between the intervention and matched control homes, a logistic regression model was calculated. Time was statistically significant ($P = .0003$, standard error 0.130, $Z = -11.54$), indicating the intervention and control groups were significantly different. As the slope illustrates, the MOQI intervention nursing homes demonstrated improved *prevalence of antipsychotic medications* QM scores in comparison to matched controls. QMs indicate problems that occur in nursing homes, so lower scores are better than higher scores.

The Supplemental Digital Content, Figure 3 (available at: <http://links.lww.com/JNCQ/A497>) displays the antipsychotic QM for each intervention nursing home, along with a regression straight-line fit for each home. Slope estimates and significance levels for each home are in the Supplemental Digital Content, Table (available at: <http://links.lww.com/JNCQ/A498>). Eight of the MOQI nursing homes had significantly improved (negative) slopes, 2 had significantly worsening (positive) slopes, while 6 were slightly improved and not significant or flat.

Focus group observations

Eleven MOQI APRNs participated in a focus group to reflect on their experiences in reducing antipsychotic medication use in their assigned

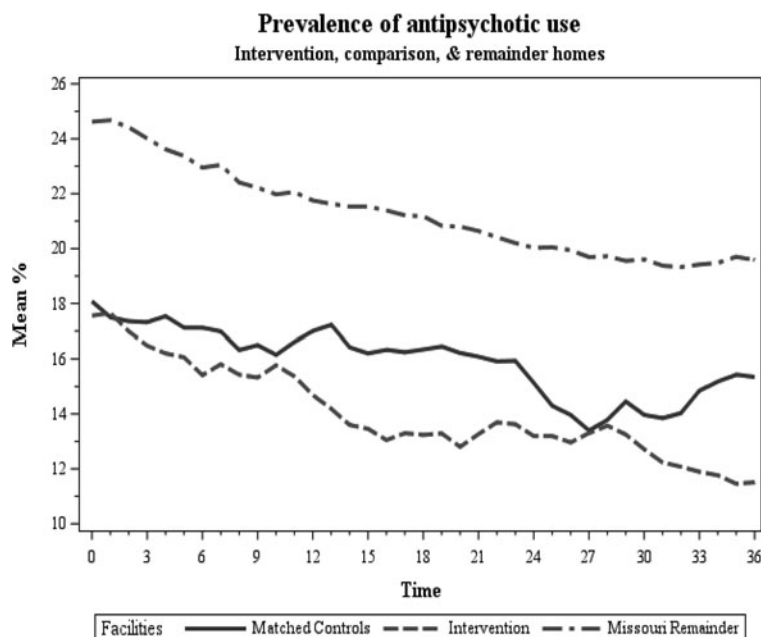


Figure. Quality measure scores, prevalence of antipsychotic use intervention (dash line; $n = 16$), matched controls (solid line; $n = 27$), and remainder of state (dash, dot line; $n = 422$).

nursing home. Discussion during the group was audiorecorded, following informed consent, and the primary researcher kept detailed notes during the group. The primary researcher conducted a qualitative analysis of both data sources, during which 3 themes emerged: lack of knowledge, need for consistent staffing, and need for leadership support. A second researcher confirmed the analysis and themes.

Lack of baseline knowledge

The majority of APRNs viewed their baseline knowledge about antipsychotic medications at the novice or beginner level. The APRNs viewed this education as essential to prepare them to work with residents, staff, and physicians to plan gradual dose efforts. The APRNs were forthcoming about their lack of knowledge and skills in QI activity. Monthly educational classes on the principles of QI started in October 2013 and continued throughout 2014. Initial reactions by the APRNs on the expectation of antipsychotic medication reductions were verbalized as “a goal that I could never achieve due to the overwhelming number of residents on the drugs.” APRNs shared personal stories of the insights they gained about how to manage medication reduction strategies, as their knowledge levels and confidence grew. The APRNs who attended

DCM reported an increased ability to understand the unstated needs of residents with dementia and plan their care more effectively to address the unmet needs.

Need for consistent staffing

The APRNs discussed how turnover among nursing staff led to the constant need to orient and educate new staff on the value of reducing antipsychotic medications among residents with dementia. Nursing staff were “fearful” of what behavior might occur among sedated residents if medications were reduced or discontinued. APRNs also discussed an important outcome of the reductions observed by nursing staff that residents who were no longer sedated could participate more in their activities of daily living, which lightened nursing staff workload. Turnover among leadership also negatively affected the ability of the APRN to achieve success. One APRN shared that recent leadership turnover at their home resulted in discontinuation of the QI plan addressing antipsychotic medication reduction efforts.

Need for leadership support

All of the APRNs agreed nursing home leadership support of antipsychotic medication reduction efforts was a key factor in creating an

effective QI plan. Initial reactions of leadership to the reduction efforts were the claims that the home “did not have time or funds” to add Hand-in-Hand training to the work schedule. The APRNs found creative ways to integrate the training into their work schedules, and leaders were found to be more supportive of the education when they observed residents waking up from the sedation of antipsychotic drugs with no observable negative behaviors. One APRN described how her nursing home administrator promoted their home as a place where residents could live their life without the influence of drugs.

RECOMMENDATIONS FOR PRACTICE

The goal of reducing antipsychotic medication use among residents with dementia pursued by the CMS has been successful since implementation of the National Partnership to Improve Dementia Care in 2012. Using APRNs to manage the effort in nursing homes can result in better antipsychotic QM scores that are lower than state and national averages. More importantly, less use of antipsychotic drugs in nursing homes leads to less risk for people with dementia and better quality of life. As identified in this study, strategies led by APRNs that include the use of feedback reports to visualize progress toward antipsychotic reduction goals, a structured QI approach that targets root causes of antipsychotic use, and educational offerings to improve knowledge and skills about care of residents with dementia can successfully reduce antipsychotic medication use. However, APRNs together with leadership and nursing home staff must work collectively to achieve this success.

CONCLUSION

Employing APRNs in nursing homes will improve the quality of life for residents with dementia and reduce the workload of nursing staff by developing QI plans and implementing the plan with leadership support over time. Nursing home staff benefit from educational interventions to improve knowledge of dementia, non-pharmacological strategies to address behaviors, and methods for developing safe and effective care plans without the use of antipsychotic medications. The support of nursing facility leadership and consistent staffing are key in reinforcing high-quality nursing home practices for residents with dementia.

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