

# Polypharmacy Review of Vulnerable Elders: Can We IMPROVE Outcomes?

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Medication management involving pharmacists and PCPs and empowering patients and caregivers resulted in higher satisfaction and cost savings.

Investigators at the Atlanta site of the Birmingham/Atlanta VA Geriatric Research and Education Clinical Center (GRECC) developed the Integrated Management and Polypharmacy Review of Vulnerable Elders (IMPROVE) clinical demonstration project to enhance medication management and quality of prescribing for vulnerable older veterans. Poor quality prescribing in older adults is common and can result in adverse drug reactions (ADRs); increased emergency department, hospital, and primary care provider (PCP) use; and death. The ADRs alone, which are strongly correlated with multiple medication use, account for at least 10% of hospitalizations in older persons.<sup>1</sup>

Many factors contributing to poor quality prescribing in older persons include time constraints on health professionals, multiple providers, patient-driven prescribing, patients with low health literacy, and frequent transitions in care between home, hospital, and post-acute care. Older veterans may be harmed by taking medications with no clear benefit, duplication of therapy, and omission of beneficial medications. Prescribing medications with known high risk for ADRs, inadequate monitoring, and limited patient education on how and why to take a medication can further increase the risk for adverse outcomes. Prescribing for multimorbid older veterans requires comprehen-

sive, individualized care plans that take into account patients' goals of care and quality of life, as well as evidence-based practice standards.

Clinical trials have repeatedly shown that individualized pharmacy review can reduce polypharmacy in older patients. Positive outcomes have included reduced ADRs, improved measures of prescribing quality, appropriate medication use, compliance with care recommendations, and reduction in the total number of medications.<sup>2-5</sup> Optimal use of medications is achieved when a pharmacist works with other care team members to implement and oversee a care plan, as opposed to each provider working alone.<sup>2,5</sup>

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The VHA Geriatric Research Education and Clinical Centers (GRECCs) are designed for the advancement and integration of research, education, and clinical achievements in geriatrics and gerontology throughout the VA health care system. Each GRECC focuses on particular aspects of the care of aging veterans and is at the forefront of geriatric research and clinical care. For more information on the GRECC program, visit the website (<http://www1.va.gov/grecc/>). This column, which is contributed to by GRECC staff members, is coordinated and edited by Kenneth Shay, DDS, MS, director of geriatric programs for the VA Office of Geriatrics and Extended Care, VA Central Office, Washington, DC. Please send suggestions for future columns to [kenneth.shay@va.gov](mailto:kenneth.shay@va.gov).



In 2011, the VHA Geriatrics Pharmacy Taskforce recommended that facilities offer “individualized pharmacy review for high-risk patients on multiple medications.”<sup>6</sup> This recommendation was in line with the increasingly integrated role of the clinical pharmacist in the patient aligned care team (PACT) and the recent requirement that Medicare Part D medication therapy management programs offer this service to select patients with chronic disease.

### THE IMPROVE MODEL

Given the high and growing numbers of older veterans enrolled in VA primary care who are at risk for ADRs, the Atlanta VA IMPROVE team implemented a GRECC-funded clinical demonstration project. The project supported the VAs focus on PACTs in combination with existing best practice standards to improve medication management in high-risk older veterans. The Emory University Institutional Review Board ruled that IMPROVE was a quality improvement project, and therefore was exempt from review and VA research oversight.

For this clinical demonstration, IMPROVE targeted noninstitutionalized veterans aged  $\geq 85$  years taking 10 or more medications who received care in the VA primary care clinic and used the VA pharmacy for medications. This cohort represented the top 5% of medication users enrolled in the clinic. While age and number of medications are independently associated with increased risk for ADRs, other factors common in this cohort, including higher levels of comorbid disease, frequent care transitions, and cognitive impairment are also associated with higher ADR risk.<sup>7</sup>

The IMPROVE model was de-

signed to promote fully engaged partnerships among veterans, family caregivers, and the PACT with input from all parties in the design of the model. The IMPROVE team conducted individual, qualitative, semistructured interviews with 5 clinical pharmacists, 5 geriatricians, and 1 geriatric nurse practitioner on the challenges faced in the management of medications for older patients, individual needs/barriers to meet these challenges, the clinical pharmacist role in providing recommendations to providers, and attitudes and preferences for team communication.

Challenges discovered included time constraints during clinic visits, a need for joint decision making, and limited competency with principles of health literacy. The IMPROVE team also conducted focus groups with veterans ( $n = 4$ ) and caregivers ( $n = 7$ ) to determine medication management needs, values, preferences, and barriers to self-management. Key findings from these sessions included poor recognition of limitations in medication self-management, problems related to health literacy, and misunderstanding the role of the clinical pharmacist.<sup>8</sup>

Using the information gained from patients, family caregivers, and PACT members, the model was tailored to address concerns. The IMPROVE model engaged a PACT clinical pharmacist skilled in medication management and patient education to perform a face-to-face clinical consult with selected patients and their caregivers.<sup>5</sup> Making veterans, families, and PACT members collaborators in IMPROVE's design helped establish active partnerships that enabled effective execution of the project and promoted sustained culture and system change over time.

### Pilot Program

High-risk veterans and their caregivers were recruited by letter, followed by a phone call to schedule an appointment for those interested, and a reminder to bring all their medications to the appointment. Twenty-eight male veterans participated in the pilot. The average age was 89 years; 52% were white; 53% had a diagnosis of dementia; 78% reported assistance with medication management; and patients took an average of 16 medications daily. Recruited high-risk veterans and their caregivers were seen in a 1 hour in-person visit with the clinical pharmacist.

To maximize the benefit of the session, the pharmacist was provided with several tools to assist in a systematic evaluation of medication management concerns and quality of prescribing. Tools included a quick reference card citing potentially inappropriate medications (PIMs) per the published 2012 Beers Criteria and a reference for potentially beneficial medications based on the START-STOPP criteria.<sup>9,10</sup>

A Computerized Patient Record System template was developed to guide the pharmacist visit. The template included medication reconciliation, a systematic review of all medications to verify indication and check for redundancies, drug interactions, PIMs, and proper therapeutic monitoring. The template also included assessments for level of medication assistance available, goals of care, health literacy, and barriers to adherence.

A collaborative review of the medication regimen was conducted with the veteran, caregiver, and pharmacist, resulting in individualized recommendations, education, strategies, and tools to improve the quality and safety of the medication regimen as well as patient adherence. When

necessary, pill boxes, illustrated medication schedules, low vision aids, and other adaptive devices were provided.

Communication of recommendations with the PCP occurred by cosignature on the note. Same-day consultation with the PCP was also available for any urgent concerns or significant changes to the regimen. At the discretion of the pharmacist, a face-to-face follow-up visit with the pharmacist or a follow-up phone call was conducted.

## Results

Both qualitative and quantitative outcomes measures were used to evaluate the IMPROVE model. Semi-structured postpilot interviews with PCPs showed that the model had high satisfaction, acceptability, and feasibility. Providers reported that the model helped them and their patients in an area that takes considerable time (medication review and education) and is not always feasible in a short clinic visit. Providers were willing to accept pharmacist recommendations, which was likely fostered by pre-intervention strategies to keep communication open about proposed medication changes. In a survey, 93% of patients and caregivers found the IMPROVE model helpful; 100% recommended the clinic to others.

Objective measures found 79% of patients in the pilot had at least 1 medication discontinued, 75% had  $\geq 1$  dosing or timing adjustments made, and PIMs were reduced 14%. Comparing the 6-month period before the pilot and the 6 months after, pharmacy cost savings averaged \$64 per veteran per month. Health care use showed a decreasing trend in phone calls and visits to the PCP.<sup>7</sup> Cost savings were comparable or greater than those previously reported for similar interventions.<sup>4</sup>

## CONCLUSIONS

The results of the IMPROVE pilot suggest that an integrated model involving both pharmacists and PCPs in managing medications and empowering the patient and family caregivers as stakeholders in their own care can lead to improved quality of medication management and cost savings. Based on the success of the pilot, the IMPROVE model received VA Office of Rural Health funding to translate this model to target rural older veterans in community based outpatient clinics.

The success of the IMPROVE model was undoubtedly enhanced by engaged PACT members at the pilot site and a clinical pharmacist who championed the model. The effort involved in recruiting, scheduling, and assessing participants may limit generalizability to settings without such a champion and without dedicated time available with a pharmacist. Determining which groups of older veterans benefit most from individualized medication management and optimal methods to translate the program to other primary care settings are ongoing endeavors for the Atlanta GRECC IMPROVE team. |

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