



It is important for veterans with diabetes to focus on management of their blood pressure. However, primary care providers do not always make a treatment change when patients' blood pressures are higher than the recommended goal. One of the reasons is clinical uncertainty about the true blood pressure value. Pharmacists may be able to play a role in reducing patients' blood pressure by helping primary care providers intensify medications when appropriate, as well as counsel patients with persistently high blood pressure who do not always take their medications.

Improving Medication Management of Hypertension in Patients with Diabetes: the ABATe and AIM Studies

Blood pressure (BP) control among diabetic patients is essential for decreasing morbidity and mortality from cardiovascular disease and diabetic nephropathy. Based on results from randomized controlled trials, the VHA/DoD guidelines for BP control among diabetic patients specify a goal of less than 140/80.

What are the reasons for not intensifying medications to meet this goal?

Diabetes Mellitus QUERI (DM-QUERI) recently concluded the Addressing Barriers to Treatment (ABATe) study, which examined factors that influence the decision to change treatment at a scheduled primary care visit in response to an elevated blood pressure for veterans with diabetes. We studied 1169 diabetic patients of 92 primary care physicians (PCPs) in nine VISN 10 and 11 facilities. Patients were enrolled if their triage BP prior to a PCP visit was $\geq 140/90$. Overall, 573 (49%) patients had a blood pressure treatment change (medication intensification or recommendation for prompt follow-up) at the visit. We found that treatment changes were less likely when: 1) there was a repeat BP recorded by the provider as $< 140/90$ or an "adequate" patient-reported home blood pressure was noted

– representing clinical uncertainty about the patient's true BP value; 2) PCPs had a systolic BP goal > 130 ; and 3) PCPs reported discussing adherence and medication issues, or issues unrelated to diabetes and hypertension at the visit.¹

What actions can help providers meet the BP goal for patients with diabetes?

The most actionable finding from this study is that rather than simply failing to act (inertia), providers are often confronted with the inherent clinical uncertainty about patients' "true" blood pressure values and document actions to incorporate additional information (e.g., repeating measurements or eliciting home blood pressure values). In turn, this has an enormous effect on decisions to change treatment. Unfortunately, this response to clinical uncertainty is non-systematic, could easily undermine performance improvement initiatives, and may be a major obstacle to optimizing the management of hypertension and improving outcomes for high-risk populations. VHA needs to promote more systematic approaches to the use of clinic and home blood pressure measurements in the treatment of hypertension. Systematic approaches might include standardized protocols for

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using average home BPs for decision-making about treatment change.

One possible solution: The AIM study

Building off the findings from the ABATe study, the Adherence and Intensification of Medications (AIM) program is designed to proactively identify, using registry-type data, diabetes patients with persistently high blood pressure and either adherence problems or lack of adequate medication intensification. These patients will receive counseling and medication intensification by a clinical pharmacist trained in motivational interviewing and guided by a medication management tool (AIM-MMT) that assists in counseling. This implementation study involves three VA sites and two sites at Kaiser Permanente Northern California.

1. Kerr E, Zikmund-Fisher B, Klamerus M, et al. The role of clinical uncertainty in decisions for diabetic patients with uncontrolled blood pressure. *Annals of Internal Medicine* May 20, 2008;148(10):717-727.

How Do I Learn More?

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Web Resources

For more information about the QUERI program in general, and to link to all of the individual QUERI Centers, please go to www.queri.research.va.gov

DM-QUERI Executive Committee

Each QUERI Executive Committee is co-chaired by a research expert and a clinician. The research coordinator for DM-QUERI is **Eve Kerr, MD, MPH**, and the clinical coordinators are **Leonard Pogach, MD** and **David Aron, MD, MS**. Other DM-QUERI staff include: **Sarah Krein, PhD, RN** (co-Research Coordinator); **Julie Lowery, PhD** (Implementation Research Coordinator); **Laura Damschroder, MS, MPH** (co-Implementation Research Coordinator); and **Leah Gillon, MSW** (Administrative Coordinator). The Executive Committee includes other experts in the field of diabetes mellitus: Paul Conlin, MD; Fran Cunningham, PharmD; Linda Haas, RN, CDE, PhD Candidate; Linda Kinsinger, MD, MPH; Susan Kirsh, MD; Gayle Reiber, PhD, MPH; Anne Sales, PhD, RN; Allan Shirks, MD; and Ruth Weinstock, MD, PhD.