Background: Many patients with diabetes are under sub-optimal glycemic control. Central to the clinician’s task in improving glycemic control is the management of hypoglycemic medication therapy, including the use of drugs such as insulin and sulfonylureas. Clinical trials have demonstrated that more intensive hypoglycemic medication therapy results in improved glycemic control. Yet quality measures for this critical process of care have not been developed and we know little about how physicians actually manage hypoglycemic medications. OBJECTIVES: We propose to develop a quality measure that describes the intensity of physicians' hypoglycemic medication therapy. We will then provide feedback to VA physicians regarding their practices and access to experts in diabetes care to determine whether this intervention leads to improvements in glycemic control.

METHODOLOGY: The study is divided into two phases. During the first phase we will use existing data to model the decision to increase hypoglycemic medications. At each medical visit, we will determine whether an increase in medication therapy occurred. We will use recursive partitioning to develop a model that identifies patient characteristics at the visit, such as recent laboratory results and diagnoses, associated with the decision to increase therapy. This model assigns a predicted probability of an increase in therapy to each visit. We then use these predictions to define an intensity of hypoglycemic medication therapy for each physician that compares the actual to predicted number of increases over all patient-visits. The second phase will be a randomized trial in which clinicians at experimental sites receive feedback on performance and access to expert opinion while usual care is provided at control sites. Feedback on performance will be provided twice over 6 months. The change in intensity of treatment scores and glycosylated hemoglobin levels pre- and post-intervention at these sites will be compared to performance of primary care physicians at control sites not receiving the intervention. Findings: Newer medical regimes for the treatment of diabetes are being adopted. A model identifying predictors of an increase in hypoglycemic medications has been developed. Among the important predictors are most recent glycosylated hemoglobin level, most recent blood glucose, time since last visit, whether on insulin, and recency of last glycosylated hemoglobin level. Visit-predicted probabilities of an increase varied from 1.5 to 32.0%. Patient treatment intensity scores varied considerably and those patients receiving more intensive therapy had a greater decrease in glycosylated hemoglobin levels over time. Clinician specific profiles containing information on glycemic control and intensity of therapy are being disseminated at intervention sites. Considerable differences have been noted in clinician performance. Status: Project is ongoing. Phase 1 analyses have been completed. Clinicians have now received two rounds of performance feedback. Collection of the final data will begin in 2 months. Impact: We have now demonstrated that intensity of therapy can be measured and that this process measure can be linked to the outcome of glycemic control. Clinicians vary in the intensity of their therapy. We expect that feedback on performance for this measure will improve glycemic control, particularly among patients with high glycosylated hemoglobin levels. This should result in lower rates of micro- and macrovascular disease as well as improved quality of life for veterans with diabetes.