Improvement of Statin Utilization in Veterans With Diabetes Through Pharmacy Interventions

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Quality Improvement Success Stories are published by the American Diabetes Association in collaboration with the American College of Physicians and the National Diabetes Education Program. This series is intended to highlight best practices and strategies from programs and clinics that have successfully improved the quality of care for people with diabetes or related conditions. Each article in the series is reviewed and follows a standard format developed by the editors of *Clinical Diabetes*. The following article describes an effort aimed at increasing the use of statins among veterans with diabetes at a Veterans Affairs medical center in New Mexico.

Describe your practice setting and location.

The Raymond G. Murphy Veterans Affairs (VA) Medical Center is an academic, tertiary care medical center located in Albuquerque, NM, and serves as the main facility of the New Mexico VA Health Care System (NMVAHCS). The NMVAHCS serves ~45,000 veterans and has ~260,000 outpatient visits per year using the patient-aligned care team (PACT) model, which consists of an interdisciplinary team working collaboratively in outpatient clinics to manage chronic and acute illnesses for veterans.

Clinical pharmacy specialists (CPSs) are integrated within the ambulatory care clinic and serve as physician extenders within the interdisciplinary PACT by providing pharmaceutical care services through both direct and indirect interactions with patients and providers. CPSs function under a scope of practice that allows them to prescribe medications and order laboratory tests and other diagnostic services. Veterans with poorly controlled chronic conditions may be referred by PACT primary care providers (PCPs) to CPSs for close monitoring and therapeutic management. Many referrals are for veterans with diabetes, which affects nearly 30% of NMVAHCS veterans. As part of the teaching mission of the Veterans Health Administration (VHA), postgraduate year 1 pharmacy residents rotate through the ambulatory care clinics for 3 months on average to serve veterans under the supervision of the CPSs.

Describe the specific quality gap addressed through the initiative.

This quality improvement (QI) initiative focused on increasing use of statins in veterans with diabetes and improving adherence and sustained statin use. Diabetes remains a major health concern in the United States. According to a 2020 report from the Centers for Disease Control and Prevention, 10.5% of the U.S. population had diabetes, representing >30 million individuals (1). Patients with diabetes are at an increased risk for atherosclerotic cardiovascular disease (ASCVD), which contributed to a large proportion of the $237 billion spent on direct medical costs for diabetes in 2017 (2). Clinical trials and observational studies evaluating statin use in patients with diabetes have shown a significant reduction in cardiovascular events and mortality. A recent meta-analysis uncovered a 9% reduction in all-cause mortality and 21% reduction in major vascular events per mmol/L reduction in LDL cholesterol in patients with diabetes on statin therapy (3). The 2020 American Diabetes Association (ADA) and 2019 American College of

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Cardiology/American Heart Association guidelines recommend moderate-intensity statins for all adults with diabetes who are 40–75 years of age regardless of their estimated ASCVD risk (4,5).

Despite their benefits and minimal adverse effects, statins remain underutilized in clinical practice, with suboptimal use in one-third of the patients with diabetes in the United States (6). Multiple studies have shown that intensified patient care such as integrated multidisciplinary educational activities and pharmacy-led interventions are effective ways to improve utilization of and adherence to statins (7,8). Integrating pharmacists with a focus on adherence through medication education counseling has also exhibited improvements in medication utilization (7). Thus, the aim of this project was to optimize statin use in patients referred to CPS pharmacy clinics for diabetes management.

How did you identify this quality gap? In other words, where did you get your baseline data?

The VHA strives to provide the highest-quality care and has developed multiple electronic quality measures to assess the quality of care offered in VA facilities across the United States. It has developed a quality measure, "statin therapy for patients with diabetes," also called "Statn7_ec," which evaluates veterans with diabetes who are eligible for a statin and had at least one dispensing event for a statin of any intensity during the measurement year. Our baseline data were obtained from the Statn7_ec quality measure, which is available as an internal electronic dashboard that is updated weekly and scores facilities' and their PCPs' achievement of appropriate statin prescribing. PACT PCPs are required to intervene with patients to improve their scores and their facility's performance.

To understand reasons for underperformance and to provide additional baseline data, CPSs and a pharmacy resident also completed a manual chart review for a medication use evaluation (MUE) of statin utilization in newly diagnosed and existing patients with diabetes at the NMVAHCS.

Summarize the initial data for your practice (before the improvement initiative).

Between April and June 2018, the NMVAHCS Statn7_ec quality measure was below the national VA average—68.77 vs. 69.80%. Adherence to statin prescribing varied by PACT PCP, ranging from 51.25 to 81.26%. The MUE chart review revealed that many patients who had previously been on a statin did not have an active prescription. Almost 92% of these patients had an expired statin prescription that was never renewed by patient or provider. This gap may be one reason for the facility's underperformance on the Statn7_ec quality measure. Other reasons for statin underutilization included patients who were newly diagnosed with diabetes, as well as missed opportunities to prescribe during outpatient clinic visits with providers (e.g., PCPs or PACT CPSs). These gaps in care were viewed as opportunities for CPSs to contribute to improving the quality of care.

What was the time frame from initiation of your QI initiative to its completion?

This project was conducted between September 2018 and February 2019. These 6 months allowed for implementation of the new processes and a brief, prospective follow-up to assess utilization and tolerance to statin therapy based on subsequent refill records after interventions. A retrospective chart review was performed from December 2019 to February 2020 to evaluate outcomes of statin utilization in patients 1 year after CPS intervention.

Describe your core QI team. Who served as project leader, and why was this person selected? Who else served on the team?

The core team for this projected included CPSs, a pharmacy resident, and a student pharmacist. The project leader was the pharmacy resident who conducted the MUE chart review and identified opportunities to improve statin utilization. The pharmacy resident and research CPS collaborated on the development of a process to identify patients for CPS intervention. Moreover, the resident worked with CPSs to map a process to improve statin prescribing through CPS clinical appointments. The initial QI pilot involved one CPS, and a second CPS was included 1 month later to expand the QI process. The CPSs prescribed and educated patients on statins during diabetes clinic visits. The retrospective chart review, 1-year post-CPS intervention, was completed by the student pharmacist.

Describe the *structural* changes you made to your practice through this initiative.

The major structural change was incorporation of the statin utilization quality measure developed by the VHA into PACT CPS visits. A pharmacy dashboard was created

internally that extracted objective data from the NMVAHCS electronic database and incorporated programming logic used by the VHA Statn7_ec dashboard. In addition to the VHA Statn7_ec dashboard, which listed PCPs' patients with diabetes not on an active statin prescription, the pharmacy dashboard focused on information CPSs identified as useful to perform the QI project. Extracted information included patients' upcoming diabetes appointments, medication allergies, and last statin prescription with fill date, quantity, and days supplied. A written patient education handout for statin use was standardized and incorporated during diabetes management appointments by the CPSs (Supplementary Figure S1). Additionally, CPSs reviewed methods to obtain prescription refills and renewals from the NMVAHCS outpatient pharmacy.

Describe the most important changes you made to your *process* of care delivery.

The most important change to the process of care delivery was utilization of the pharmacy resident as part of the initiative. The year-1 pharmacy resident used the pharmacy statin dashboard to identify potential candidates for statin intervention with upcoming diabetes appointments. Candidates for CPS intervention did not have a history of statin use, had an interruption in statin therapy, or had an active statin prescription due for a refill within 1–2 weeks of their clinic appointment. Interruption in statin therapy was defined by expired or discontinued statin prescriptions. Statin prescriptions that were overdue for a refill were calculated using the last refill date and days supplied.

The resident completed a manual review to supplement the pharmacy dashboard with an evaluation of potential drug–drug interactions with statin therapy and severity of documented allergies. Comprehensive information from the pharmacy dashboard and resident's chart review were provided to CPSs at least 1 week before their scheduled appointments with these patients.

CPSs provided statin interventions during their scheduled 30- to 60-minute visits. Interventions were defined as those that contributed to statin utilization, which included initiating statin therapy in patients without a history of statin use, renewing overdue statin prescriptions, or refilling prescriptions to prevent a lapse in statin therapy. Additionally, the CPSs promoted adherence and provided education about statin therapy using a standardized patient education handout.

If you used the "Plan, Do, Study, Act" (PDSA) change model, provide details for one example.

- **Plan.** The pharmacy resident used the pharmacy dashboard and completed a manual chart review to identify and compile a list of patients to be seen by a CPS.
- **Do.** We did this for 1 month.
- **Study.** We realized that the QI process was successful; however, we were not impactful (i.e., interventions were offered to only a small number of patients).
- **Act.** We determined that we can incorporate the same process with another CPS to increase potential intervention candidates.

Summarize your final outcome data (at the end of the improvement initiative) and how it compared with your baseline data.

Over the course of the 6-month project, 89 unique patients were identified with a total of 115 potential visits for statin intervention. Of these 115 potential visits, 25 visits were cancelled by either the clinic or the patient, and 2 visits did not occur because patients transferred their care to another VA facility. In total, 88 of the 115 potential visits occurred, and these patients were seen by the CPSs. Most of the patients were male (98%), and the median age was 62 years. The majority of the patients (85%) also had comorbidities contributing to ASCVD risk such as hypertension.

During this time, CPS statin interventions occurred during 76% (67 of 88) of the potential visits, with a total of 61 unique patients receiving CPS intervention. Overall, interventions included 26 new statin prescriptions and 41 statin refills or renewals. Of the 41 statin refills or renewals, 32 patients required renewal of an expired statin prescription, which demonstrated that the majority of patients undergoing intervention already had gaps in therapy. Of the 89 unique patients identified, 71% met the VA statin quality measure before initiation of the QI project. By the project's conclusion in February 2019, 92% of the patients in our study met the VA statin quality measure.

A follow-up retrospective evaluation of the long-term outcomes of statin utilization was performed. Of the 61 patients who received CPS intervention in the original study cohort, 60 had their prescription history followed for 12 months beginning from the index appointment date on which a statin was ordered. One patient died during the follow-up period. A total of 53 patients

(88.3%) had an active statin prescription 1 year post-intervention.

Overall, the results of our QI project demonstrated that the collaboration between a pharmacy resident and CPSs successfully increased statin utilization and contributed to the statin utilization quality metric at the NMVAHCS.

What are your next steps?

The results from the project demonstrate that pharmacy residents and/or student pharmacists can be incorporated into current processes in ambulatory care to affect patient care such as improving statin utilization in patients with diabetes. Integration of trainees in population health management can help identify patients in need of medication optimization, who can then receive pharmacist intervention. This effort ultimately improves health care systems' ability to deliver preventive and targeted care.

We plan to continue partnerships between pharmacy residents and CPSs to improve and optimize ambulatory care pharmacy services. We also plan to discuss opportunities to expand roles of clinical pharmacy technicians in population health management to support clinical pharmacists. With the evolving roles and responsibilities of clinical pharmacy technicians, there may be an opportunity for them to extract and organize clinical information regarding statin use to assist CPSs and sustain this process in the future (Supplementary Figure S2).

The national dashboard, which includes the statin utilization quality metric, was developed with PCPs as end-users. However, this project demonstrated positive outcomes by incorporation of clinical pharmacists in population health management. This project optimized the use of the dashboard for population health management by identifying patients who both failed to meet the VHA statin utilization quality metric and had an existing appointment with a CPS. The VHA has other dashboards intended for ambulatory care and specialty pharmacists with specific VA-identified quality metrics that pharmacists could affect. Our next step is for CPSs to start incorporating these population-based dashboards to improve quality of care.

The results of this project are a reminder to use all health care professionals involved in diabetes management; the responsibility does not rest solely on PCPs or specialists (e.g., endocrinologists). Although augmenting the existing PCP dashboard with a pharmacy dashboard was our approach, creating multiple population health

dashboards for different end-users to target the same aim (i.e., increasing statin utilization in patients with diabetes) may not be feasible. This QI project demonstrated that optimizing statin utilization should be a component of patients' diabetes self-care management education (DSME), which is endorsed by the ADA (4). Health care professionals such as nurses, dietitians, certified diabetes care and education specialists, and health professionals without prescribing privileges can promote statin utilization as self-care during DSME classes and clinic visits. Other members of the health care team have an opportunity to check statin status to prevent missed refills or renewals when interacting with patients.

What lessons did you learn through your QI process that you would like to share with others?

We learned that routine QI meetings were crucial, especially early in the project, because they led to updates in PDSA cycles and continually improved the project. Communication among key stakeholders, especially between the pharmacy resident and CPSs, provided continuous feedback regarding the process, and we were able to optimize our protocol and education materials in real time. This communication was also important in assessing sustainability of the processes. Because the pharmacy resident would be present for only a few months to develop and evaluate processes, it was imperative to determine what pieces of the process could be incorporated into the existing workflow to ensure sustainable and uninterrupted process improvement in our facility even after the resident left the program.

It is also important to learn from our project's limitations. The opportunities for statin interventions were limited to patients who appeared at their scheduled appointment with CPSs. The high number of patient no-shows and appointment cancellations observed during the project could represent another QI opportunity at NMVAHCS. Furthermore, the success of statin interventions was limited by the allotted clinic appointment time. Because these patients were seen for diabetes management, CPSs spent the majority of the visits discussing treatment plans for diabetes, including initiation of insulin, which could require significant time dedicated for counseling. Lastly, our project was a pilot with two CPSs at the main facility of the NMVAHCS and may not be generalizable to other practices, including clinics in which patients are not already being followed by pharmacists for their diabetes management.

Therefore, we conclude that QI implementation requires a close partnership among stakeholders within the health care team and may need to be tailored to fit individual clinics' needs. Our results suggest that collaboration between pharmacy trainees and CPSs may positively affect statin utilization quality metrics by streamlining the use of a population health management dashboard.

DUALITY OF INTEREST

No potential conflicts of interest relevant to this article were reported.

AUTHOR CONTRIBUTIONS

S.W.K. was responsible for the design of the QI project, collected and analyzed data, and wrote the manuscript. J.C. was responsible for the design of the project, analyzed data, and reviewed/edited the manuscript. K.J.W. collected and analyzed additional follow-up data and reviewed/edited the manuscript. N.D.R. and K.M.N. designed the project, performed the clinical intervention, and reviewed/edited the manuscript. A.D.N. designed the project, provided data, and reviewed/edited the manuscript. S.W.K is the guarantor of this work and, as such, had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the intervention description and the accuracy of data analysis and outcomes.

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