EMBRACING QUALITY IMPROVEMENT AT RESIDENT CLINIC: A REPORT CARD ON OUR DIABETES CARE

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Background

The age of embracing the status quo or the “if it ain’t broke, don’t fix it” philosophy in medical practice is long gone. The goal of quality improvement in the medical field is one we can all appreciate: to optimize the delivery of health care and use advanced knowledge and technology to improve patient care. Many industries, such as automobile and engineering, already apply the scientific method to quality improvement efforts, and the time has come for medical practices to follow suit.

*The Improvement Guide: A Practical Approach to Enhancing Organizational Performance*¹ describes a model of improvement that can be used in a variety of settings, including medical practices. Their model is based on cycles of “trial-and-learning,” emphasizing the importance of testing change on a small scale and observing its effects.

The “PDSA Cycle” provides a practical and systematic framework for making improvements in the workplace which epitomizes this “trial-and-learning” philosophy. The acronym PDSA stands for Plan, Do, Study, Act. The “Plan” phase involves stating the objective of the test and outlining the details of its execution. The plan is executed during the “Do” phase. Analyzing and summarizing the data occurs during the “Study” phase. Finally, the “Act” phase involves determining further changes that will make up the next cycle.

As quality improvement becomes an increasingly significant part of practicing medicine, there is much we can learn from its principles and applications during residency training. Jefferson Hospital Ambulatory Practice (JHAP), an outpatient clinic where internal medicine residents provide ambulatory care to a largely underserved population, presents an ideal setting for evaluating our own competence and quality of care.

Methods

To evaluate physician performance in practice as a component for certification, the American Board of Internal Medicine (ABIM) developed Web-based self-assessment programs for physicians called “practice improvement modules” (PIMs).² The ABIM Diabetes PIM, for example, uses information collected from medical record audits to gauge performance rates for evidence-based measures of diabetes care, such as hemoglobin A_{1c} levels. Voluntary patient surveys about diabetes care at the clinic are also scored. The ABIM Internet-based program then presents a summary report of the practice’s performance, allowing the physician(s) to view areas for improvement and develop a quality improvement plan.

Applying the ABIM Diabetes PIM at JHAP produced a report card of our diabetes care that highlights several opportunities for improvement and characterizes our patient population. Thirty medical records of diabetic patients who have been at JHAP for at least one year and seen in the last 12 months were randomly audited for review, and 17 patient surveys were completed.

Results and Discussion

Patient characteristics are reviewed in Table 1. The sample of patients are 50 years old on average, mostly female gender (73%), of black or African-American race (67%), and have had type 2 diabetes for greater than one year (80%).

Table 1. Patient characteristics

Characteristic	Mean (Range)
Age (y)	53 (37-72)
Number of Patients	
Gender	
Male	8 (27%)
Female	22 (73%)
Race	
White	6 (20%)
Black or African-American	20 (67%)
Asian	0 (0%)
Hispanic or Latino	0 (0%)
Other	4 (13%)
Type of Diabetes	
Type 1, < 12 months	0 (0%)
Type 1, > 12 months	4 (13%)
Type 2, < 12 months	2 (7%)
Type 2, > 12 months	24 (80%)

Target medical goals and patient evaluations show room for improvement. Table 2 illustrates the rates of diagnostic testing and complete patient evaluation. The majority of patients are appropriately tested for hemoglobin A_{1c} and cholesterol levels, but less than 50% are tested for the presence of protein in the urine. Patient evaluations are mostly complete, but few diabetic patients undergo foot and eye exams. Table 3 demonstrates that less than half of

diabetic JHAP patients reach target goals for blood pressure, cholesterol, and hemoglobin A_{1c} levels.

Table 2. Diagnostic Testing and Patient Evaluation

	Percentage completed
Diagnostic Testing	
HbA1C tested w/in 12 months	87%
LDL cholesterol tested w/in 12 months	77%
HDL cholesterol tested w/in 12 months	77%
Triglycerides tested w/in 12 months	77%
Test for urine protein tested w/in 12 months	48%
Patient Evaluation	
History	88%
Height	77%
Weight	97%
Systolic blood pressure	100%
Diastolic blood pressure	100%
Foot exam	17%
Eye exam	27%

Table 3. Clinical Outcomes

Outcomes	Number of Patients (%)
Blood pressure < 130/80	7 (23%)
LDL cholesterol < 70 in patients with CVD	0 (0%)
LDL cholesterol < 100 mg/dL; tested w/in 12 months	13 (43%)
HDL cholesterol > 40 mg/dL; tested w/in 12 months	12 (40%)
Triglycerides < 150 mg/dL; tested w/in 12 months	10 (33%)
HbA1C < 7.0%, tested w/in 12 months	8 (27%)

ABIM's Diabetes PIM also reports data on our treatment plans for diabetic patients (Table 4). Smoking cessation support is highly successful. However, most patients require an individualized nutrition and exercise plan. The lower rates for prescribing medications such as aspirin, ACE inhibitors or angiotensin receptor blockers (ARBs), and statins point out potential areas for improvement. Similarly, our rates for influenza and pneumococcal vaccines are low and deserve attention.

Table 4. Treatment and Preventative Care

Treatment	Eligible	Treatment Prescribed
Diet and Exercise		
Individualized medical nutrition therapy	30	10 (33%)
Individualized physical activity plan	30	12 (40%)
Other treatments		
ACE inhibitor or ARB	9	5 (56%)
Statin or other lipid-lowering drug	23	13 (57%)
Aspirin	30	13 (43%)
Smoking cessation support	7	6 (86%)
Antihyperglycemic Treatment		
Single oral anti-hyperglycemic agent	30	12 (40%)
Combination oral anti-hyperglycemic agents	30	11 (37%)
Insulin	30	10 (33%)
Preventative Care		
Influenza vaccine during most recent flu season	30	8 (27%)
Pneumococcal vaccine	30	3 (10%)

The patient surveys provide useful information about patient satisfaction and opportunities for health education. Overall diabetic patients report a positive experience at JHAP. A majority (82%) of patients say they would recommend the practice to others. Most patients felt the practice managed their blood pressure, cholesterol, and blood sugars well, but many wanted more education about nutrition, their medications, and foot care. Also only 53% report taking aspirin regularly. These surveys thus underscore specific areas for improving patient education and compliance.

Knowledge of our performance rates in diabetes care may increase awareness of these opportunities for improvement among internal medicine residents and change patient care for the better. An intervention is currently in progress which aims specifically to improve our rates of pneumococcal vaccinations amongst diabetic patients at JHAP. Later, we will analyze whether the intervention effectively improved preventative care for our patients.

Like many ambulatory clinics serving a mostly underserved community, JHAP faces challenges to optimal medical care including variable patient education and adherence. Nonetheless, this self-assessment and future quality improvement endeavors can hopefully motivate us to address potential weaknesses, learn

about quality improvement in medical practice, and continue to strive towards the highest standards of patient care.

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References

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