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Quality improvement project to improve providers' goal-setting activity for chronic disease self-management



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model

Abstract

Background: Patient-centered medical home (PCMH) places patients at the center of care and actively considers patients' goals, preferences and skill levels in caring for their disease while developing a care plan. We implemented a quality improvement (QI) project to improve internal medicine resident goal-setting activity with patients for chronic disease self-management.

Methods: The plan-do-study-act (PDSA) model was used and a root cause analysis was conducted with internal medicine residents ($n=20$) and faculty ($n=7$) to identify barriers to patient goal setting. Two main causes were identified – lack of awareness and lack of knowledge about where and how to set patient goals in the electronic medical record (EMR). Reminders during daily morning huddles, discussions with faculty, educational video presentation and organizational policy change interventions were implemented in four serial PDSA cycles.

Results: The goal setting activity documentation rate by resident providers increased to 14% following inclusion of patient goal setting reminders during daily morning huddles. There was notable increase in the goal setting documentation rate to 29% following discussion in faculty meeting. The goal setting documentation rate remained the same (29%) despite educational video and policy change intervention. However, goal setting documentation rate increased to 33% by the end of the study.

Conclusion: Our QI project resulted in a measurable increase in the use of methods of healthcare delivery associated with improved outcomes. This model worked well in our setting, and sharing our success may benefit others seeking to achieve similar goals.

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PALABRAS CLAVE

Autogestión de la enfermedad crónica;
Establecimiento de objetivos;
Hogar médico céntrico para pacientes;
Modelo planificar-hacer-estudiar-actuar

Proyecto de mejora de la calidad para perfeccionar la actividad de establecimiento de objetivos de los proveedores en la autogestión de la enfermedad crónica

Resumen

Antecedentes: El Hogar médico céntrico para pacientes (PCMH) sitúa a los pacientes en el centro de los cuidados, y considera de manera activa los objetivos, preferencias y niveles de competencia de los pacientes a la hora de prestar atención a su enfermedad y desarrollar un plan de cuidados al mismo tiempo. Introdujimos un proyecto de mejora de la calidad (QI) para perfeccionar la actividad del establecimiento de objetivos de los residentes de medicina interna con los pacientes para autogestionar la enfermedad crónica.

Métodos: Se utilizó el modelo planificar-hacer-estudiar-actuar (PDSA) y se realizó un análisis de la causa raíz con los residentes de medicina interna ($n = 20$) y el profesorado ($n = 7$) para identificar las barreras al establecimiento de los objetivos del paciente. Se identificaron dos causas principales: la falta de concienciación y la falta de conocimiento sobre dónde y cómo establecer los objetivos del paciente en la historia clínica digital (HCD). Se introdujeron recordatorios durante las reuniones matutinas diarias, debates con los profesores, se presentó un vídeo educativo y se realizaron intervenciones sobre los cambios de la política organizativa en cuatro ciclos seriadados de PDSA.

Resultados: La tasa de documentación de la actividad del establecimiento de objetivos por residente se incrementó al 14% tras la inclusión de los recordatorios sobre establecimiento de objetivos durante las reuniones matutinas diarias. Dicha tasa de documentación del establecimiento de objetivos se incrementó notablemente hasta el 29% tras la reunión de debate con el profesorado, y mantuvo el mismo valor (29%) a pesar del vídeo educativo y la intervención sobre el cambio de políticas. Sin embargo, esta tasa aumentó al 33% al finalizar el estudio.

Conclusión: Nuestro proyecto QI se tradujo en un incremento medible del uso de métodos de asistencia sanitaria asociados a la mejora de los resultados. Este modelo funcionó bien en nuestro centro, por lo que compartir nuestro éxito podría beneficiar a otras personas que persiguen objetivos similares.

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Introduction

Patients living with chronic diseases, while routinely managing their daily health, encounter challenges and depend on a fragmented healthcare system to address their healthcare needs.¹ Addressing chronic healthcare needs involves increased costs and utilization of services.¹ Furthermore, the patient population with multiple chronic conditions is expected to increase significantly over the next ten years resulting in an increased burden on the healthcare system to provide quality care at optimal cost.¹ Improving the health of patients with chronic diseases helps meet goals and objectives of Healthy People 2020.² The patient-centered medical home (PCMH) is a model of care that places patients at the center of care and helps transition traditional primary care practice sites into a form of care that actively considers the patients' goals, preferences and skill levels in caring for their disease while developing a care plan.³ PCMHs make decisions with regards to treatment based on preferences of the patient and engage them in managing their own health and healthy behaviors.³ This model of care ensures all members in the practice team, from physicians to front desk staff, work as a team to coordinate care from multiple providers and community resources.³ About 14,000 sites in the U.S. are PCMHs recognized by the National Committee for Quality Assurance (NCQA).³

Research shows many advantages of having PCMHs, which include superior quality of care, good patient experience, better continuity of care, and better disease prevention and management.³ In addition, studies have shown that PCMHs reduce health care costs from decreased emergency department visits and hospital admissions.³ This model of care also decreases health care disparities and provider burnout rates.³ The PCMHs must meet rigorous standards based on six concept areas including care management and support that involves goal setting for patient care, and performance measurement and quality improvement.³ Research shows that goal setting, targeting, and planning are important elements of successful chronic disease self-management programs.⁴ Additionally, collaborative goal setting with patients for chronic disease self-management improves chronic disease behaviors and outcomes.⁵

The Summa Internal Medicine Center (IMC) provides an ambulatory experience and is certified as a Level 3 PCMH by the NCQA. The IMC serves racially and ethnically diverse population of 198,006.⁶ Adults aged >18 years constitute 78.8% of the population, while people aged >65 years constitute 14.2%.⁶ The IMC has an evidence-based curriculum that teaches residents to use chronic care models such as PCMH, Wagner's Chronic Care Model and Flinder's Model of chronic disease self-management.^{4,7-9} However, the rate of self-management goal setting and documentation by IMC

residents for patients with chronic diseases was 1.25% in September 2019. Our aim was to improve IMC resident goal setting activity with patients for chronic disease self-management to 15% from baseline within 6 months.

Methods

The quality improvement (QI) project was done at Summa IMC, a Level 3 PCMH certified by the NCQA, and provides ambulatory experience to the internal medicine residents. The IMC serves racially and ethnically diverse population of about 198,006 in the city of Akron, Ohio, USA.⁶ The Akron city's population constitutes 78.8% of adults aged >18 years, while people aged >65 years constitute 14.2%.⁶ The QI project proposal was submitted to the Institutional Review Board, and received non-research determination. Only study personnel had access to identifiable patient information, with aggregate de-identified results reported to the other personnel. We used Standards for Quality Improvement Reporting Excellence (SQUIRE) 2.0 guidelines¹⁰ and the plan-do-study-act (PDSA) model for our project.

We collected EMR data that included patient name, medical record number, age, payer, clinic visit date, clinic visit type, primary care physician, visit provider name and whether the provider set a self-management goal for the patient at that visit (yes/no). The baseline goal setting documentation rate by providers with patients for chronic disease self-management was 1.25% in September 2019.

During a noon conference in October 2019, a short presentation was given to the residents and faculty about the project highlighting the importance of patient goal setting and the techniques used in root cause analysis. A root cause analysis was then conducted with internal medicine residents and faculty identifying perceived barriers to patient goal setting by resident providers. Three techniques were utilized for the root cause analysis – fishbone diagram, affinity diagram and five-whys. The fishbone diagram, also called a cause and effect diagram, was used to identify possible causes and causal categories. In affinity diagram root cause analysis technique, possible causes of reduced patient goal setting activity documentation were listed on a sticky note and then similar causes were grouped together to indicate a common theme for each set of grouped causes. Additionally, the five-whys root cause analysis technique was also employed to generate the root causes of a particular barrier to patient goal setting.

The baseline characteristics of the providers that participated in the root cause analysis are shown in the Table 1. Residents were divided into four groups (five in each group, total $n=20$ residents) and the faculty formed a separate group ($n=7$). Two groups of residents used the fishbone diagram with the five-whys technique, and the remaining two groups used the affinity diagram with five-whys technique for the root cause analysis. The faculty group used a fishbone diagram with the five-whys technique for their root cause analysis.

Primary causes identified by the root cause analysis exercise are shown in Fig. 1. From all the root causes generated, two main causes were identified – lack of awareness and lack of knowledge about where and how to set patient goals in the electronic medical record (EMR). These two main causes

Table 1 Baseline characteristics of internal medicine providers participated in the root cause analysis.

Total providers ($n=27$)	
Faculty 25.9% ($n=7$)	Residents 74.1% ($n=20$)
Male 18.5% (5)	Male 44.4% (12)
Female 7.4% (2)	Female 29.6% (8)
	Residents' year of training
	1st year 29.6% (8)
	2nd year 22.2% (6)
	3rd year 22.2% (6)

to be addressed were identified based on the feasibility, easiness and quicker implementation of interventions.

The interventions implemented at Summa IMC were goal setting activity reminders in morning huddles, discussion about patient self-management goals in the monthly faculty meetings, video presentation, and organizational policy change. During morning huddles, a verbal reminder was given to providers to set goals with patients and where and how to document this in the EMR. The video intervention was a 15-min presentation that explained the importance of patient goal setting for chronic disease self-management, described principles of PCMH, and discussed how to develop collaborative self-management SMART (Specific, Measurable, Achievable, Realistic and Time bound) goals. The video also explained where and how to document SMART goals in the EMR. The video was sent to all the faculty and resident physicians to watch at their convenience. Furthermore, the IMC introduced a policy change requiring all the resident providers to set and document patient goals. These interventions were implemented in four serial PDSA cycles from November 2019 to February 2020 as below. Each PDSA cycle lasted one month.

November 2019 – Patient goal setting activity reminders were included in the daily morning huddles.

December 2019 – In addition to reminders in the daily morning huddles, extensive discussion was held with the faculty members during the monthly faculty meeting about patients' self-management goal setting and its documentation in the EMR.

January 2020 – In addition to reminders in the daily morning huddles and discussions in faculty meetings, a video presentation and organizational policy change were implemented.

February 2020 – Reminders in the daily morning huddles, video presentation and organizational policy change were continued.

Results

At the end of each PDSA cycle, we collected EMR data as described in the plan stage, which included patient name, medical record number, age, payer, clinic visit date, clinic visit type, primary care provider, visit provider name and whether the provider set a chronic disease self-management goal for the patient at that visit (yes/no). The percentage of patients' charts with documented self-management goals in

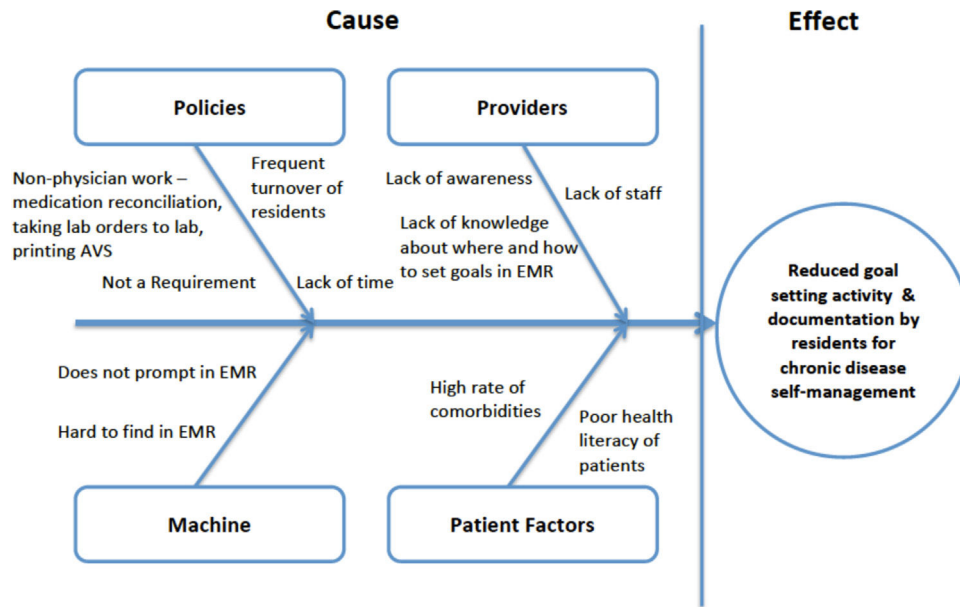


Figure 1 Root cause analysis with fishbone diagram. EMR – electronic medical record, AVS – after visit summary.

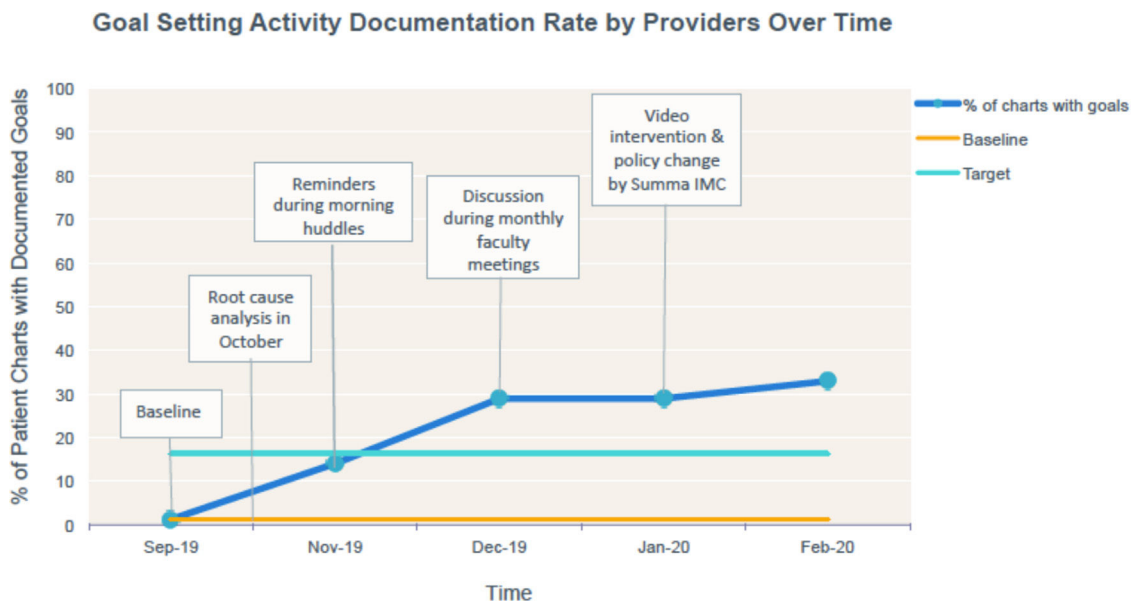


Figure 2 Run chart showing percentage of patient charts with documented self-management goals over time. IMC – Internal Medicine Center.

comparison to baseline data (1.25% in September 2019) was reported. The results were graphed on a run chart to track the progression (Fig. 2). The percentage improvement in the goal setting activity documentation in each PDSA cycle was used for impact measurement.

The chronic disease self-management goal setting documentation rate in the EMR by providers increased to 14% in November 2019 from 1.25%, following inclusion of patient goal setting reminders in daily morning huddles. Furthermore, there was a notable increase in the percentage of patients' EMRs with documented self-management goals in December 2019, which was 29% following discussion in the monthly faculty meeting. The rate of goal setting

documentation by providers remained the same (29%) in January 2020 despite educational video intervention and official implementation of policy change by the IMC requiring all the providers to set and document patient self-management goals. However, improvement in the quality of goal setting activity was noted during this period. Further, the goal setting documentation rate increased to 33% in February 2020. These percentages were extrapolated from a 100 patient random sample of completed office visits for the month using the SAS software random sample generator.

The target outcome was a >15% improvement in goal setting documentation with patients for chronic disease self-management in less than 6 months. Since the outcome

confirmed achievement of the project's aim, we recommended continued implementation of all interventions in the future for further improvement in goal setting activity documentation. Future efforts should also focus on writing complete SMART goals.

Discussion

Our project has achieved the aim of having a >15% increase in self-management goal setting and documentation for patients with chronic diseases by providers at Summa IMC in less than six months. Our project also demonstrates the feasibility of implementing QI projects to improve methods of healthcare delivery to patients suffering from multiple chronic medical problems at our internal medicine outpatient facility. QI projects are organization or institution specific even though collaborative approaches have evolved over years involving multiple organizations aimed at particular patient populations.¹¹ QI projects help to improve processes and outcomes related to cost, productivity and care quality of a particular healthcare system by bringing immediate positive changes to the methods of healthcare delivery.¹¹ Our QI project showed the beneficial role of interventions such as reminders during morning huddles, educational video presentation, organizational policy change, and discussion and buy-in during monthly faculty meetings about patient self-management goals and its documentation. The inclusion of reminders in daily morning huddles increased the providers' patient goal setting rate to 14% from the baseline of 1.25%. Both faculty and resident providers were given goal setting activity instruction handouts, which might have had partial effect on the goal setting activity documentation. The inclusion of reminders in morning huddles motivated providers to collaboratively set and document self-management goals for patients with chronic diseases. In addition, morning huddles ensured the entire providers' team was on the same page and that everyone knew the expectation of chronic disease self-management goals.

The goal setting documentation rate increased to 29% following discussions about patient goal setting activity and documentation in monthly faculty meetings. These discussions in faculty meetings were a part of the IMC's policy change initiative, but prior to the actual policy change implementation. These discussions during faculty meetings underscored the importance of developing collaborative goals with patients for chronic disease self-management and resulted in faculty members being more involved in patient goal setting activity. The faculty involvement in goal setting may have brought a positive behavioral change among resident providers, which produced greater impact on goal setting activity and documentation rate. In addition, due to faculty involvement, resident providers may have been more receptive to goal setting activity instructions, which may also be the reason for this greater impact.

In addition to the above interventions, the video presentation and policy change by the IMC requiring all the providers to set and document patient self-management goals further reinforced our efforts to improve rates of patient goal setting activity. Although the rate of goal setting documentation remained at 29%, improvement in the

quality of goal setting was noted. However, goal setting documentation rate increased to 33% in February 2020. The video presentation served as an educational tool addressing the causes identified in the root cause analysis. The video presentation provided residents with information about the importance of setting patient self-management goals, PCMH and its requirements, steps involved in developing collaborative SMART goals for the patients and documenting these goals in the EMR. The policy change by the Summa IMC relating to patient goal setting documentation strengthened the organizational measures to comply with PCMH standards in an effort to improve quality of care and methods of healthcare delivery. Further, our project helped IMC to partially meet two of the concept areas for PCMH standards, which are care management and support that involves developing patient preferred care plans including self-management goals for patients, and performance measurement and quality improvement.³

Setting a goal for patients to self-manage their chronic conditions is important because primary care providers spend most of the time managing chronic diseases, yet standard of care for chronic diseases and preventive care is achieved only 50–60% of the time.¹² Also, it is important to document these goals in the patients' EMR so that they can be followed up during subsequent visits. Although our QI project did not assess for chronic disease outcomes in patients, previous studies have showed goal setting to be associated with improved outcomes related to chronic diseases. The theory behind goal setting is that a patient with set goals on a specific activity relevant to a particular task tends to try harder for a prolonged duration with least distraction.¹³ A study by Lyon et al. showed the benefits of adopting PCMH standards including patient goal setting for chronic disease self-management.¹² Their analysis showed improvement in patient care, that is frequency of testing, diabetes and lipid control, immunization rates, and preventive screenings.¹² They also experienced an increase in patient visits as patients became more involved in the care of their own health. Also, they were not required to hire any additional staff for this process, instead they redistributed roles and responsibilities and tutored staff members to attain the needed skill sets.¹² In addition, they found that the staff had greater work satisfaction, as they felt more included in the team-based care. Also, PCMH recognition of the facility provided better reimbursements.¹² Another study, a systematic review and meta-analysis examined 14 studies to check the effectiveness of goal setting interventions in diabetes self-management.¹⁴ This study found that goal setting interventions were associated with significant reduction in hemoglobin A1c levels.¹⁴

Our QI project demonstrated the successful introduction of multiple interventions such as resident and faculty engagement, video presentation and organizational policy change in a very short period of time. This model worked well in our setting, and sharing our success may benefit others seeking to achieve similar goals. The major limitation of our project was the inconsistent method of measuring goal setting activity documentation due to lack of time to manually look through electronic medical records. Another limitation was that resident physicians rotated every month, requiring repetition of interventions. Although the evidence supports it, improving the processes does not necessarily

translate into improvement in the results. Despite significant improvement in the rate of goal setting documentation and achievement of our project goal, it should be noted that the achievement was only 33%. This is because our interventions were aimed at addressing only two of the causes identified by the root cause analysis. In order to further improve the rate of provider goal setting documentation for chronic disease self-management, we recommend that the future efforts should focus on addressing the other barriers identified in the root cause analysis by reducing non-physician work to providers, providing adequate staffing, improving time management skills and health literacy of patients.

Conclusion

Patients living with chronic diseases encounter various challenges while routinely managing their daily health, and depend on a fragmented healthcare system to address their complex healthcare needs. These patients need a model of care such as PCMH that places patients at the center of care where the patients' goals, preferences and skill levels in caring for their disease are actively considered while developing a care plan. One of the important components of care plan development is collaborative SMART goal setting with patients for chronic disease self-management, which improves chronic disease behaviors and outcomes. Our QI project showed the beneficial role of interventions such as inclusion of patient goal setting activity reminders in morning huddles, discussions during monthly faculty meetings, video presentation and institutional policy change, in improving the rate of goal setting and documentation by providers. We recommend continued implementation of these interventions along with addressing other barriers by reducing excessive administrative tasks, providing adequate staffing, improving time management skills, and utilizing available tools to mitigate limited health literacy in patients to further improve patient goal setting documentation rates by the providers. Future efforts should also focus on writing complete SMART goals.

Authorship statement

All the authors contributed to the conception and study design, data collection, analysis and interpretation, manuscript draft and its revision, and have approved the final version of the manuscript for submission.

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Conflicts of interest

Authors have no conflict of interest to declare.

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