Improving Effective Asthma Care Through Increased Spirometry Use in a Suburban Primary Care Clinic

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Background

- Asthma is a chronic respiratory condition that affected more than 25 million Americans in 2016.1
- The United States spends almost $22 billion dollars on asthma related expenses each year.2
- Asthma should be diagnosed in patients with a history of recurrent respiratory symptoms and reversible airway obstruction ascertained via lung function testing.3
- Despite improving the accuracy of asthma diagnosis, less than 25% of patients diagnosed in a primary care environment received spirometry.4
- Underutilization of spirometry is a factor in asthma over-diagnosis, estimated between 30% and 53.5% in adult and pediatric populations.5,6

A suburban primary care clinic intended to improve its effectiveness of care for asthma diagnosis.

- A local chart audit revealed only 20% of asthma patients received effective asthma care, including 10% asthma symptom screening, 15% spirometry, and 40% appropriately timed follow-up. Team confidence in evidence-based asthma care was 63%.

Asthma care quick reference: Diagnosing and managing asthma

- Spirometry use, follow up timing, and decreased team confidence resulted in zero questionnaire use, follow up timing, and decreased team confidence resulted in zero questionnaire use, follow up timing, and decreased team confidence resulted in zero

Asthma algorithm: spirometry use, follow up timing, & population health management enrollment

Plan-Do-Study-Act (PDSA) Method

Nurse practitioner engagement

Spirometry use was inconsistent throughout the project. Algorithm changes, confusion about the timing of testing, and decreased team confidence resulted in zero spirometry use, follow up timing, and decreased team confidence resulted in zero.

Questionnaire use averaged 17% during the first week because of low patient volume with original screening criteria and questionnaire access issues. Utilization improved after addressing these obstacles and remained above goal until cycle two when staff turnover caused questionnaire use to drop to 27%. The new team members quickly acclimated to the questionnaire; a contest in cycle three promoted sustained use of the tool.

Conclusions

- Effective asthma care improved from 20% to 69%.
- Spirometry improved 17.3%, from 15% to 42%.
- The project resulted in three new asthma diagnoses, 8.8% of positive screenings.
- Increasing utilization of spirometry required team skills training, a screening process to identify asthma symptoms, and a standardized diagnostic pathway that included spirometry.
- Clinic team members designated as asthma champions during the final PDSA cycle supported continued use of the project’s interventions after project completion.
- The clinic system intends to spread the asthma screening process and project tools to its other three locations.
- This project did not include further testing for patients who had normal spirometry despite a positive asthma screening. This may have reduced the number of patients who were diagnosed with asthma since spirometry can be normal in patients with asthma when they are asymptomatic.
- While the use of customized tools limits generalizability, other primary care practices could create similar tools using asthma guidelines.

Lessons Learned

- This project was successful because of supportive leadership and a culture of quality that promoted team participation throughout the project.
- Twelve hour staffing was a barrier to improvement because it interfered with continuity.
- Administering spirometry is technically challenging and required significant team skills training to improve staff confidence and ensure quality results.
- Contrary to the concern that the team would be resistant to a project leader who was not a clinic employee, the team reported they felt the project was successful because it was led by someone who did not have competing duties within the clinic.

References


