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Asthma Control Screening Using the Electronic Health Record

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Hahn School of Nursing and Health Science

DOCTOR OF NURSING PRACTICE PORTFOLIO

by

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Screening for Asthma Control Using the Electronic Health Record

Asthma is a chronic disease that can have unrecognized symptoms of poor control leading to a worsening of the disease, unnecessary emergency department visits and hospitalizations. In California approximately 1 in 8 people have Asthma¹. Over 65% of adults and nearly 54% of children living with asthma reported symptoms in the last month¹. In 2012 the average days of work missed by adults was 6.6 and the average days of school or daycare days missed for children was five¹. Although the actual rates of emergency department visits, hospital admissions and deaths related to asthma have decreased overall, there is room for improvement. In 2012, there were 400 deaths, 35,000 hospital discharges and 180,000 emergency department visits¹. Asthma remains one of the top 20 diagnoses for patients presenting to emergency departments annually².

In 2015 the Global Initiative for Asthma (GINA) revised its Global Strategy for Asthma Management and Prevention Report. Two domains for assessing asthma that remained were the assessment of asthma symptom control and the risk of adverse outcomes³. A recommended numerical tool for assessing asthma control is the Asthma Control Test (ACT) It can be accessed on the website www.asthma.com. This test that has been validated against provider assessment, is more sensitive to change in symptom control and serves as good trending tool for monitoring clinical progress³. Additionally, the National Heart, Lung and Blood Institute mentioned the same tool in its Guidelines for the Diagnosis and Management of Asthma, Expert panel report 2007. The recommendation is for the use of validated tools in the assessment of asthma control and patient symptom history collection⁴. One such example listed in the expert panel report was the ACT.

With regard to the risk of adverse outcomes, a cross sectional survey of 3,000 patients in six countries visiting primary care or specialists was conducted to determine if the ACT could accurately predict the GINA classification of “partly controlled or uncontrolled” with its scoring system. A score of <19 correctly predicted partially controlled or uncontrolled asthma 94% of the time overall, and a score of >20 predicted controlled asthma 51% of the time⁵.

A second study sought to test the reliability and validity of the ACT in a longitudinal study of patients new to asthma specialty care. Over 300 patients participated in a baseline test at their 4-week appointment and 12-week follow up with ACT screening. The patients were immediately tested via respiratory spirometry after completing the ACT. The specialist rated the patients asthma control. Responsiveness to changes in asthma control was noted in the ACT score and correlated with the specialist’s evaluation. The ACT score of 19 or less was found to be 71% specific and 71% sensitive to identifying uncontrolled asthma⁶.

A third study sought to test the validity of the ACT in a Chinese primary care setting. Over 400 patients in 15 primary care settings completed the ACT, the Asthma Control Questionnaire and respiratory spirometry testing. The Asthma Control Questionnaire was used for comparison of scores based on previous studies. ACT screening results were compared with the Asthma Control Questionnaire, the patient rating of control, and specialist’s classification of control. Clinical correlation for the ACT scores was strongest with the specialists’ rating. Patients were found to rate themselves higher for control than specialists determined. Findings of the study found that the use of the ACT, a reliability 0.861 for all study participants, and discriminative

properties would make it applicable for use in primary setting where respiratory spirometry could not be performed⁷.

After Institutional Review Board exemption from a Southern California University and a letter of support was obtained from a community faith-based family practice clinic a quality improvement project for screening of asthma was initiated. First, an electronic template of the ACT was created and embedded in the electronic health record to evaluate if asthma screening would change compared to usual care. The template was used to screen all patients with asthma over the age of 12. The patients were identified by a diagnosis 493.xx in their problem summary list. The goal was to screen this patient population at each encounter. The screening would occur via the front desk staff or medical assistant staff at vital signs collection. The recording of the answers and score generation occurred with the screening. This data was stored in the History of Present Illness in each encounter. For the purpose of this project a goal of an “n” of 30 was set. A retrospective chart review occurred for the same timeframe in 2014. In the chart review, notes of patients with asthma in their problem list were included for review to determine if either a discussion of asthma symptoms occurred, or documentation of auscultation of breath sounds in the physical examination. A screening for asthma control was counted if either of those items were documented. Data was controlled for volume using ratios.

Results

Screening rates from the retrospective review in 2014 were 55%. Table 1 shows screening rates after the 2015 template embedding in the electronic health record were 94%. The timing of the project and retrospective review both occurred over the same 7-

week timeframe. An “n” of 30 was reached in the 2015 screenings. Of the 30 screenings completed, 8 (27%) scored poorly controlled or uncontrolled. Of the identified poorly controlled or uncontrolled patients 7 (88%) did not present to the clinic for asthma related symptoms.

Discussion

The Asthma Control Test provides a quick screening tool for evaluating asthma symptom control over the past four weeks. The process of screening the patients enhanced patient education regarding asthma symptoms. This process also provided a score for notification to the provider of symptom control and score trending. The cost to embed the template and train staff was minimal. Prior to this intervention the seven patients who did not present with a complaint of asthma related symptoms may have had missed opportunities for medical management.

Finally, the screening for asthma control is one of the 2015 and 2016 quality metrics that may be included for reporting quality to the Centers for Medicare and Medicaid Services (CMS) under the Physicians Quality Reporting system (i.e. asthma control #398)⁸. This metric can be used in conjunction with other metrics to prevent the 2% negative payment adjustment of 2017 by CMS for failure to report quality metrics. The use of the ACT in clinical practice was found to be very useful, efficient and effective in identifying patients with poor asthma control.

Table 1

Year	# Screenings	# Total Encounters	Screening Rate
2014	23	42	55%
2015	30	38	94%

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