

Abstract Form

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Project Title:	A Quality Improvement Project to Improve Asthma Assessment by Resident Physicians in the Outpatient Setting		
Research Category (please check one):			
<input type="checkbox"/> Original Research	<input type="checkbox"/> Clinical Vignette	<input checked="" type="checkbox"/> Quality Improvement	<input type="checkbox"/> Medical Education Innovation

Abstract

Background: Asthma is a common chronic inflammatory lung disease characterized by episodic shortness of breath, chest tightness, wheezing and cough that impacts millions globally. The risk of asthma exacerbation increases as asthma control worsens and can lead to frequent emergency department visits, hospitalizations and systemic corticosteroid use. Identifying the degree of both asthma control and risk of exacerbation is integral to preventing morbidity and adjusting asthma therapies and management accordingly. Studies show that 40% of acute asthma exacerbations and 15% of near-fatal asthma exacerbations occur in patients who reported in the preceding three months having symptoms less than weekly or symptoms only with exertion. Many of the tools used to evaluate asthma assess impairment but not risk and could overestimate asthma control, leading to unaddressed correctable risk factors for the development of exacerbations. Asthma Impairment and Risk Questionnaire (AIRQ) is a 10-item, equally weighted, yes/no, validated tool designed in 2018 to identify degree of asthma control based on both impairment and risk in patients 12 years and older¹. While various methods of asthma assessment are utilized by resident physicians at UCLA, AIRQ could provide a more comprehensive understanding of asthma-related risk and impairment and help to identify patients at increased risk for future exacerbations.

Objective: To implement and assess the efficacy of AIRQ as a validated tool to measure asthma risk and impairment in comparison to other methods utilized by resident physicians.

Methods: Two brief, anonymous surveys were distributed to Internal Medicine, Pediatric, and Medicine-Pediatric resident physicians at UCLA who care for adults and/or children ages 12 and above diagnosed with asthma in the outpatient setting. The initial survey was distributed over the course of three months and determined the methods utilized by resident physicians to assess asthma. Residents were asked to replace their previous method of asthma assessment with AIRQ as the primary tool for assessing asthma risk and impairment. Three months later, through a follow-up survey distributed over the course of one month, residents were asked to provide feedback on the clarity, relevance, and comprehensiveness of AIRQ compared to their previous method of choice. The follow-up survey included teaching pearls so that each participant was provided with more information on AIRQ and the limitations of other tools.

Results: Sixty residents across Internal-Medicine, Pediatrics, and Medicine-Pediatrics responded to the initial survey. 100% primarily relied on provider information gathering, and 20% concurrently used the asthma control test (ACT) tool to evaluate asthma control. When asked which standardized tool(s) assess both asthma impairment and risk of future exacerbation, 54% of respondents identified AIRQ. Many respondents also believed that the ACT, asthma predictive index (API), and pediatric asthma score (PAS) assess both impairment and risk of future exacerbation (28%, 31%, and 13% of respondents, respectively). 97% of respondents had not heard of AIRQ before. 36% of respondents were willing to try AIRQ and partake in a follow up survey. Of the respondents who tried AIRQ, 81% participated in the second survey, which compared AIRQ to their previous method. The majority of respondents prefer AIRQ to their previous method both generally (69%) and in terms of clarity (75%), comprehensiveness (69%), relevance (81%) and time efficiency (56%).

Conclusions: The AIRQ is preferred by UCLA residents as a validated tool to measure asthma risk and impairment in comparison to other methods utilized by resident physicians. While this study is limited due to sample size, the preliminary results suggest that compared to their previous method of assessing asthma control, UCLA residents prefer AIRQ for its clarity, comprehensiveness, relevance, and time efficiency. Future aims include providing formal resident education on assessing asthma impairment and risk and on AIRQ's purpose, application, and interpretation. The results demonstrated a knowledge gap in that many participants believed that the ACT, API, and PAS assess both impairment and risk of future exacerbation. However, these tools are not validated for that purpose. Residents could benefit from further teaching on clinical applications of these tools. In future iterations of this project, having more residents participate in the study and trying AIRQ to see if it remains a highly preferable tool would be beneficial. If it is generally preferred, the questionnaire could be implemented into the EMR, or patients could be provided with this survey prior to their office visit.

Reference: Chipps B, Zeiger RS, Beuther DA, Reisman J, Wise RA, McCann W, Gilbert I, Eudicone JM, Gandhi HN, Harding G, Cutts K, George M, Murphy KR. The Asthma Impairment and Risk Questionnaire enhances the assessment of asthma control. *Ann Allergy Asthma Immunol*. 2023 Oct;131(4):436-443.e1. doi: 10.1016/j.anaai.2023.04.024. Epub 2023 Apr 25. PMID: 37105501.