The Authors’ Reply

We thank Drs. Lee, Ranney, Zink, and Girard for their interest in our recent article¹ and insightful letters.²³ We appreciate the points made by them,²³ which meaningfully add to the discussion on the New York University (NYU) Emergency Department (ED) classification algorithm. Below are a few additional points for this debate.

We agree there are limitations of the NYU algorithm and that diagnosis code-based classification of non-emergent vs. emergent use is crude. For example, for the same ICD-9-CM code, asthma can be non-emergent or emergent depending on the severity of the condition.⁴ Similarly, patients with chest pain do not all have an acute coronary syndrome.⁵ In addition, given the NYU algorithm reliance on probability sums, the developer hopes that the population-based tool would be used to assess the performance of primary care systems and evaluate intervention programs for access to healthcare improvement instead of being used to judge individual decisions to seek healthcare.⁵⁷ Billings [NYU] has cautioned that the algorithm would not be appropriate for making individual reimbursement-based decisions,⁶⁷⁸ and Raven et al article also illustrated this point.⁹

Studies provide some validation of the NYU algorithm’s classification of ED use.⁵⁷ In order to generalize to the US population, Gandhi et al used several years of a nationally representative sample of hospital-based ED visits to evaluate the NYU algorithm.⁷ They found that classifying ED visits as emergent was significantly related to mortality and subsequent need for hospitalizations.⁷ Ballard et al also found a strong relationship between severity of ED visits and death or ED-associated hospitalization.⁵

Comprehensive medical chart review is the gold standard to determine emergency status, but it is costly and usually is not feasible.⁴ Despite the NYU algorithm’s limitations, it is a useful tool for understanding ED visit patterns and assessing the effects of intervention programs on reducing non-emergent ED use.⁵⁷ Given the lack of alternative approaches, the NYU algorithm can be used to categorize ED visits as non-emergent and emergent when a full chart review is not possible, claims data are not available, and diagnosis information is available.⁷ Therefore, several states and local entities have utilized the NYU diagnosis codes-based algorithm as a crude approach to track ED visit patterns, and the Centers for Disease Control and Prevention (CDC) has also adapted the algorithm to describe the characteristics of high-safety-net burden ED use.⁵⁰⁸

The NYU algorithm is publicly available on the Internet.²⁹ Given its widespread use in research studies,⁴⁷⁷ and its acknowledged limitations, further refinement of the methodology or the development of a more accurate algorithm is needed. ED use often is the only choice for low-income Americans⁶ and we should give a higher weight for Medicaid patients. With the implementation of the Affordable Care Act, there will be some changes in the healthcare system and the number of uninsured, which might affect the patterns of ED utilization.

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References


Disclosures

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