

NYU Emergency Room Algorithm

» Analytic value

The New York University (NYU) ER algorithm enables organizations to:

- » Stratify annual emergency room (ER) spend in a meaningful way and quantify the magnitude of ER waste.
- » Target members/employees or managing providers who contribute to the most significant ER waste and who are candidates for education or care management programs.
- » Identify the leading cause of ER uses and recommend a possible condition-specific education program.
- » Track ER diversion program ROI and impact, such as telemedicine benefits.

» About the methodology

To monitor use of ER services, researchers from NYU's Center for Health and Public Services systematically reviewed 6 million computerized emergency department records with an advisory panel of emergency medicine physicians. Based on their review, excluding ER visits that led to inpatient admissions, researchers developed a system for classifying ER visits into the following categories:

1. **Non-emergent:** visits that did not require immediate medical care within a 12-hour window
2. **Emergent — primary care treatable:** visits that required care within a 12-hour window that could be effectively treated within a primary care setting
3. **Emergent — preventable/avoidable:** visits that could have been prevented through appropriate primary care management (e.g., medication adherence for diabetes)
4. **Emergent — not preventable:** visits that required emergency care which could not be prevented

To account for the unique clinical needs of each patient, researchers also assigned an ER inappropriate probability value for each diagnosis code. These values enable end users to refine the definition of an ER appropriate visit according to their business needs.

¹National Quality Forum. Reducing Emergency Department Overuse: A \$38 Billion Opportunity. http://www.qualityforum.org/NPP/docs/Reducing_ED_Overuse_CAB.aspx.

» Implementation

Data needs:

The NYU ER methodology is completely claims-based, requiring complete enrollment files and medical claims with well-populated diagnosis codes. There are no additional data sources required from the client to drive this algorithm.

Timeline:

HDMS has integrated the algorithm into our standard data processing. This module could be turned on with your next data refresh.

» Business need

The National Quality Forum (NQF) estimates 67 million annual ER visits are potentially avoidable, costing our health system more than \$38 billion a year ¹. The NYU ER algorithm was developed to help stratify ER visits into preventable versus avoidable visits. In addition, the algorithm enables users to quantify the size of their ER waste, analyse and identify the cause of ER misuse, and provide a robust system to track the impact of any ER diversion programs.