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Objectives: Determine influenza vaccine effectiveness in preventing influenza-associated hospitalization among adults with multiple high-risk conditions, specifically among immunosuppressed enrollees.

Methods: The Multi-State Adult Influenza Vaccine Effectiveness Network (MAVEN) is a multi-state study of the effectiveness of influenza vaccines in preventing hospitalization among adults during the 2015-16 influenza season. It is a population-based, cross-sectional study enrolling 1467 participants from 7 states (Alaska, Georgia, Massachusetts, Michigan, North Carolina, Vermont, and Wisconsin) with high risk conditions among adults 18 years old with acute respiratory illness (ARI), presenting with new or worsening cough or change in sputum consistency and identified with influenza vaccine status, prior year hospitalizations, intervals of influenza vaccination, Charlson Comorbidity index, and inaccurate, limiting precision in identifying a patient’s primary code, the most common conditions, from most recent medical encounters.

Results: The majority of immunosuppressed enrollees had high scores = an increased # of comorbidities and increased mortality.

Conclusion: High-risk conditions are both prevalent and numerous among patients with chronic high risk conditions, many of whom are at increased risk for severe complications of influenza.


definition of comorbidities:

- high-risk conditions are defined as those associated with an increased risk for severe complications from influenza, including:
  - chronic pulmonary (including asthma), cardiovascular, renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus).
  - immunosuppression or persons immunosuppressed, any reason.
  - HAVEN enrollees are categorized within 7 high-risk groups based on discharge diagnosis from inpatient and outpatient medical encounters in the year prior to enrollment.
  - extracted/abstracted ICD-9 and ICD-10 codes from electronic medical records.
  - ICD codes also used to create Charlson Comorbidity Index (CCI), weighted scores based on the adapted risk of mortality or resource use.
  - higher scores = an increased # of comorbidities and increased mortality that the predicted outcome will result in mortality.