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Monitoring child mental health related emergency department visits in New York City

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Objective

To assess the use of syndromic surveillance to assess trends in mental health-related emergency department (ED) visits among school-aged children and adolescents in New York City (NYC).

Introduction

From 2001-2011, mental health-related hospitalizations and ED visits increased among United States children nationwide [1]. During this period, mental health-related hospitalizations among NYC children increased nearly 23% [2]. To estimate mental health-related ED visits in NYC and assess the use of syndromic surveillance chief complaint data to monitor these visits, we compared trends from a near real-time syndromic system with those from a less timely, coded ED visit database.

Methods

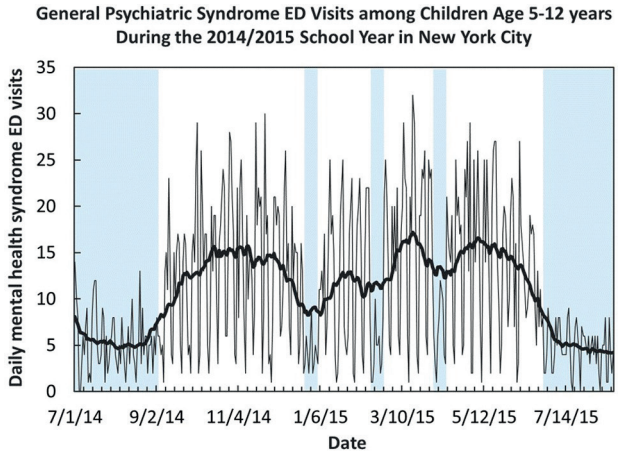
The NYC ED syndromic surveillance system receives anonymized patient chief complaint and basic demographic data for nearly every ED visit citywide to provide timely surveillance information to health authorities. Using NYC ED syndromic surveillance data from 2003-2015, we applied previously developed definitions for general psychiatric syndromes. We aggregated ED visits by age group (5-12 years, 13-17 years, and 18-20 years), geography, and temporality. Syndromic data were compared with Statewide Planning and Research Collaborative System (SPARCS) data from 2006-2014 which reported mental health diagnosis (ICD-9), treatment, service, and basic demographics for patients visiting facilities in NYC. Using these two data sources, we compared daily visit patterns and annual trends overall as well as stratified by age group, area-based poverty (ZIP code), and time of visit.

Results

Both syndromic surveillance and SPARCS data for NYC showed an increasing trend during the period. While both showed relative increases with similar slopes, mental health-related chief complaint data captured fewer overall visits than the ICD-9 coded SPARCS data. Trends in syndromic data during 2003-2015 differed by age-group and area-based poverty, e.g., among children ages 5-12 years the annual proportion of mental health-related ED visits increased roughly 3-fold from 1.2% to 3.8% in the poorest areas, which was greater than the increase in the richest areas (1.7% to 2.6%). Seasonal, day-of-week, and school holiday patterns found far fewer visits during the periods of NYC public school breaks (Figure).

Conclusions

We conclude that syndromic surveillance data can provide a reliable indicator of mental health-related ED visit trends. These findings suggest potential benefit of syndromic surveillance data as they may help capture temporal and spatial clustering of events in a much more timely manner than the >1 year delay in availability of ED discharge data. Next steps include a qualitative study exploring the causes of these patterns and the role of various factors driving them, as well as use of patient disposition and matched data to better characterize ED visit patient outcomes.



Keywords

emergency department; child mental health; syndromic surveillance

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