Using Syndromic Emergency Department Data to Augment Oral Health Surveillance

John P. Jasek*[1], Nicole Hosseinipour[1], Talia Rubin[1] and Ramona Lall[2]

[1]NYC Department of Health and Mental Hygiene, Bureau of Health Care Access and Planning, Long Island City, NY, USA; [2]NYC Department of Health and Mental Hygiene, Bureau of Communicable Diseases, Long Island City, NY, USA

Objective

To utilize an established syndromic reporting system for surveillance of potentially preventable emergency department (ED) oral health visits (OHV) in New York City (NYC).

Introduction

NYC Department of Health and Mental Hygiene recently reoriented its oral health care strategy to focus on health promotion and expanded surveillance. One surveillance challenge is the lack of timely OHV data; few dental providers are in our electronic health record project, and statewide utilization data are subject to delays. Prior research has examined OHV using ICD-9-CM from ED records, and has suggested that diagnostic specificity may be limited by ED providers' lack of training in dental diagnoses (1-3). We considered our existing ED syndromic system as a complement to periodic population-based surveys. This system captures approximately 95% of all ED visits citywide; 98% of records have a completed chief complaint text field whereas only 52% contain an ICD-9-CM diagnosis.

Methods

We used chief complaint text to define OHV in two ways: (1) a basic definition comprised of 'TOOTH' or 'GUM' in combination with a pain term (e.g., 'ACHE'); (2) a more inclusive definition of either specific oral health diagnoses (e.g., 'PULPITIS') or definition (1). For both definitions, we excluded visits likely to have stemmed from trauma (e.g., 'ACCIDENT'). Data from 2009-2011 were analyzed by facility, patient age and residential zip code, and day/time using SAS v9.2 (SAS Institute; Cary, NC).

Results

OHV in 2009-2011 totaled 72,410 (def. 1) and 103,594 (def. 2), or 0.6% and 0.9% of all ED visits, respectively. OHV (def. 2) spiked at age 18 and were highest among 18 to 29 year olds (Fig. 1). Neighborhood OHV rates (def. 2) ranged from 74 to 965 per 100,000 persons. 59% of OHV occurred between 8am and 6pm (Fig. 2). Highly specific dental conditions were rare; terms such as "tooth ache" were most common.

Conclusions

Findings suggest that OHV are a particular problem among ages 18 to 29. This pattern may reflect lower insurance coverage among young adults. The proportion of daytime visits suggests that EDs are substituting for regular dental treatment and there may be opportunities to promote daytime linkages to office-based dental providers.

A well-established syndromic reporting system holds promise as a method of OHV surveillance. Strengths include near complete chief complaint reporting, rapid availability, and the potential to identify populations and facilities that could benefit from expanded access and preventive education. Limitations include the need to gather site-specific facility information (e.g., presence of dental residents, coding practices) to better understand patterns. Also, the absence of some important fields in the syndromic system (e.g., insurance coverage, income) limit assessment of the degree to which cost barriers may be driving OHV.

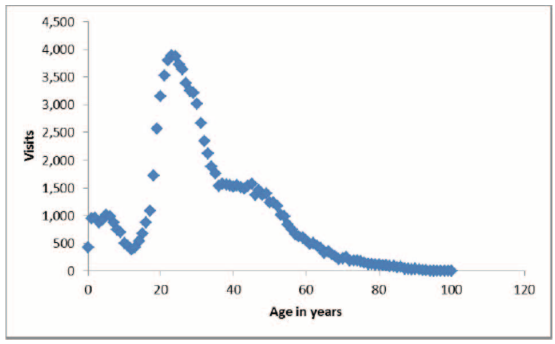

Fig 1. OHV (def.2) by age, 2009-2011

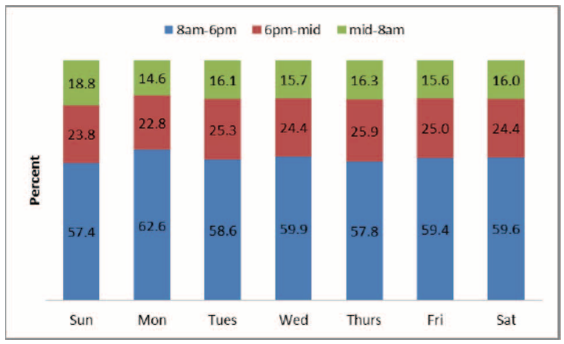

Fig 2. OHV (def.2) by day/time, 2009-2011

Keywords

chief complaint; surveillance; syndrome definition; oral health

Acknowledgments

The authors would like to thank the Bureau of Communicable Diseases' Data Analysis and Syndromic Surveillance Unit for data collection and analytic guidance.

References

1. PEW Center on the States, "A Costly Dental Destination," accessed August 22, 2012, http://www.pewstates.org/research/reports/a-costly-dental-destination-85899379755
2. Hong L, Ahmed A, McCunniff M, et al. Secular Trends in Hospital Emergency Department Visits for Dental Care in Kansas City, Missouri, 2001-2006. Public Health Reports; (March-April 2011) Vol 126, No. 2, 210-219.
3. California Health Care Foundation, "Emergency Department Visits for Preventable Dental Conditions in California," accessed August 22, 2012, http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/E/PDF%20EDUseDentalConditions.pdf

*John P. Jasek
E-mail: jjasek@health.nyc.gov