Analyses of National Syndromic Surveillance Data: Real-Time Hospital, Veterans Affairs (VA) & Department of Defense (DoD) Data

Gabriel Rainisch, MPH[1,2]; Jerome Tokars, MD [1]; Paul McMurray MDS[3]; Roseanne English[1]

[1]*Division of Emergency Preparedness & Response, National Center for Public Health Informatics (NCPHI), Centers for Disease Control and Prevention (CDC), [2]Northrop Grumman Information Technology, [3]Scientific Applications International Corporation*

OBJECTIVE

This paper's objective is to compare syndromic categorization of newly acquired real-time civilian hospital data with existing BioSense data sources.

BACKGROUND

Since July 2004 the BioSense program at the Centers for Disease Control and Prevention (CDC) has received data from DoD military and VA outpatient clinics (not in real time). In January 2006 real-time hospital data (e.g. chief complaints and diagnoses) was added. Various diagnoses from all sources are binned into one or more of 11 syndrome categories.

METHODS

The study period was 2/4/06 to 6/11/06. Because of differences in available data, visits were defined differently for the 3 data types. For VA and hospital data, repeat visits within 24 hours of discharge were grouped into a single visit. For DoD data, each visit to a facility, regardless of duration since the last discharge is considered as one visit. We calculated both the percent of total visits that binned to a syndrome category; and the percent of binned visits for each syndrome category. Real-time hospital data was stratified by patient class (emergency department, inpatient/Admitted, or Outpatient visits).

RESULTS

At the time of this analysis [June 2006] 30 hospital facilities (in 11 cities), 475 DoD outpatient clinics, and 863 VA outpatient clinics were actively sending data to BioSense. For each data source the mean visits per month and mean visits per facility-month was: Hospital, 0.3 million and 1,708; DoD, 2.6 million and 230; and VA, 3.9 million and 190.

The percent of total visits that binned to ≥1 syndrome varied among all data sources from 9.6-15.7 (Table).

Table – Total and Binned Visits from 2/4/06 - 6/11/06

Source	Total Visits*	Binned Visits*	% Binned
DoD	12,305	1,927	15.7
VA	21,446	2,059	9.6
Hospital	1,818	212	11.6

*in thousands

For all data sources, Respiratory and Gastrointestinal combined, comprised 60-75% of binned visits (Fig-

ure 1). The only marked difference between data sources was for the Gastrointestinal syndrome (Hospital, 30%; DoD 18%; VA, 11%); the other syndromes comprised similar percents of total binned visits.
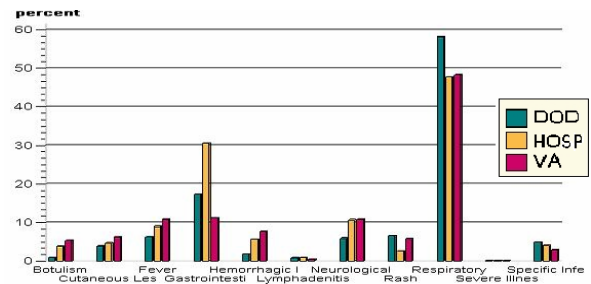

Figure 1 – Percent of Binned Visits" by Syndrome Category

Real-time hospital data was 45% outpatient, 34.5% emergency, and 20.5% inpatient (Figure 2). Outpatient visits comprised the greatest proportion of most syndromes [Range: 40-59%] with the exception of Rash and Fever (both 53% emergency); and Severe Illness & Death (80% inpatient).
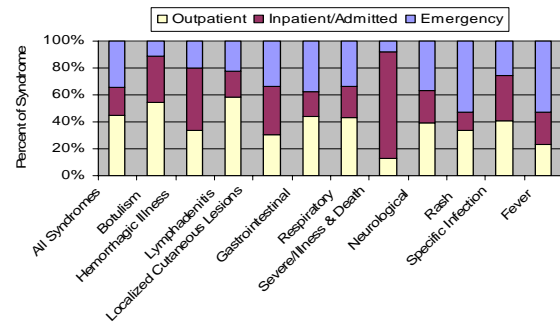

Figure 2 -Hospital Visits Meeting Syndrome Definitions by patient class (from 2/4/06 through 6/11/06

CONCLUSIONS

The percent of total visits meeting syndrome definitions and the breakdown by syndrome category are similar for VA, DoD, and real-time Hospital data. Hospital facilities on average, however, receive 7 times the mean monthly visit volume compared with VA and DoD facilities. Analysis of real-time hospital data also suggests that health conditions studied will vary between outpatient, emergency department and inpatient locations.

For further information please contact: Roseanne English (RXE1@cdc.gov), BioSense Analytic Data Team Lead.