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How Missing Discharge Diagnosis Data in Syndromic Surveillance Leads to Coverage Gaps

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Objective

To identify surveillance coverage gaps in emergency department (ED) and urgent care facility data due to missing discharge diagnoses.

Introduction

Indiana utilizes the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) to collect and analyze data from participating hospital emergency departments. This real-time collection of health related data is used to identify disease clusters and unusual disease occurrences. By Administrative Code, the Indiana State Department of Health (ISDH) requires electronic submission of chief complaints from patient visits to EDs. Submission of discharge diagnosis is not required by Indiana Administrative Code, leaving coverage gaps. Our goal was to identify which areas in the state may see under reporting or incomplete surveillance due to the lack of the discharge diagnosis field.

Methods

Emergency department data were collected from Indiana hospitals and urgent care clinics via ESSENCE. Discharge diagnosis was analyzed by submitting facility to determine percent completeness of visits. A descriptive analysis was conducted to identify the distribution of facilities that provide discharge diagnosis. A random sample of 20 days of data were extracted from visits that occurred between January 1, 2017 and September 6, 2017.

Results

A random sample of 179,039 (8%) ED entries from a total of 2,220,021 were analyzed from 121 reporting facilities. Of the sample entries, 102,483 (57.24%) were missing the discharge diagnosis field. Over 40 (36%) facilities were missing more than 90% of discharge diagnosis data. Facilities are more likely to be missing >90% or <19% of discharge diagnoses, rather than between those points.

Comparing the percent of syndromic surveillance entries missing discharge diagnosis across facilities reveals large variability. For example, some facilities provide no discharge diagnoses while other facilities provide 100%. The number of facilities missing 100% of discharge diagnoses (n = 19) is 6.3 times that of the facilities that are missing 0% (n = 3).

The largest coverage gap was identified in Public Health Preparedness District (PHPD)[1] three (93.16%), with districts five (64.97%), seven (61.94%), and four (61.34%) making up the lowest reporting districts. See Table 2 and Figure 1[2] for percent missing by district and geographic distribution. PHPD three and five contain a large proportion (38%) of the sample population ED visits which results in a coverage gap in the most populated areas of the state.

Conclusions

Querying ESSENCE via chief complaint data is useful for real-time surveillance, but is more informative when discharge diagnoses are available. Indiana does not require facilities to report discharge diagnosis, but regulatory changes are being proposed that would require submission of discharge diagnosis data to ISDH. The addition of discharge diagnose is aimed to improve the completeness of disease clusters and unusual disease occurrence surveillance data.

Table 1. Emergency department facilities by percent (%) missing discharge diagnosis.

Percent (%) missing discharge diagnosis	Number of emergency department facilities
0	3
0.01-9	15
10-19	11
20-29	9
30-39	10
40-49	11
50-59	3
60-69	6
70-79	6
80-89	4
90-99	25
100	19

Table 2. Percent (%) missing discharge diagnosis by Public Health Preparedness District (PHPD).

PHPD	Average percent (%) missing
District 1	34.12
District 2	56.70
District 3	93.16
District 4	61.34
District 5	64.97
District 6	49.77
District 7	61.94
District 8	47.52
District 9	50.86
District 10	41.55
Indiana Average	57.24

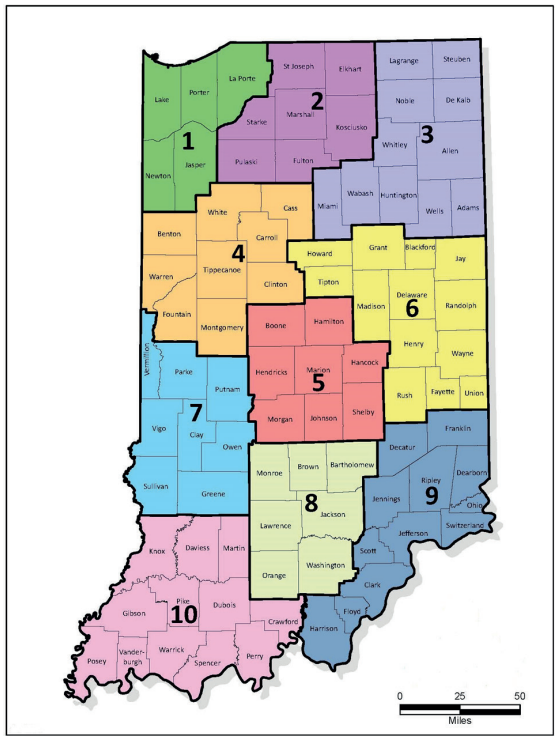

Figure 1. Indiana Public Health Preparedness Districts

Keywords
Syndromic surveillance; discharge diagnosis; outbreak coverage

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References

1. Preparedness Districts [Internet]. Indianapolis (IN): Indiana State Department of Health, Public Health Preparedness; 2017 [Cited 2017 Sept 20]. Available from: https://www.in.gov/isdh/17944.htm.

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