Clostridium difficile Surveillance Using Laboratory Data from BioSense Hospitals

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OBJECTIVE

To determine the feasibility of using BioSense laboratory data to do surveillance on *Clostridium difficile* infection (CDI) and calculate overall and facility rates of disease.

BACKGROUND

Reports indicate that CDI incidence and severity has increased [1]. This epidemiological change in the disease pattern is partially explained by the emergence of a hypervirulent strain causing disease in both healthcare and community settings [2]. BioSense is an electronic surveillance system receiving data from >500 non-federal hospitals. A subset of those hospitals sends laboratory result data.

METHODS

We identified positive *C. difficile* toxin assays in laboratory data sent to BioSense from January 1, 2007 through June 30, 2008 using SNOMED codes and text parsing methods. Laboratory data were merged with administrative records to determine healthcare setting (e.g., inpatient, outpatient), admission and discharge dates, and visit denominator data for rate calculations. A patient was classified with healthcare-onset disease if he/she had a positive *C. difficile* toxin and the date of collection of the sample was ≥3 days after hospital admission [3].

RESULTS

A total of 4,203 patients from 32 hospitals in 12 states had positive *C. difficile* assays. Of those patients, 3,699 (88.0%) were either inpatients or admitted to the hospital at the time of the test and 1,905 (45.3%) had healthcare-onset disease. Among 17 hospitals with ≥20 healthcare-onset *C. difficile* positive assays, the overall pooled prevalence rate was 7.6 per 10,000 patient-days with a facility range from 3.8 to 21.4 per 10,000 patient-days.

CONCLUSIONS

CDI is a disease of public health concern, continues to increase in incidence and severity, and requires surveillance efforts to monitor disease status [3]. BioSense data shows inter-facility differences in healthcare-onset CDI rates. BioSense, although not representative of the entire U.S. population, provides near real time automated data and can be a useful resource in ongoing surveillance and prevention efforts.

REFERENCES

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