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Travel and Triage: Pilot project to detect infections after medical tourism procedures

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Objective

Medical notes provide a rich source of information that can be used as additional supporting information for healthcare-associated infection (HAI) investigations. The medical notes from 10 New Jersey (NJ) emergency departments (ED) were searched to identify cases of surgical-site infections (SSI).

Introduction

EpiCenter, NJ's statewide syndromic surveillance system, collects ED registration data. The system uses chief complaint data to classify ED visits into syndrome categories and provides alerts to state and local health departments for surveillance anomalies.

After the 2014 Ebola outbreak in West Africa, the New Jersey Department of Health (NJDOH) started collecting medical notes including triage notes, which contain more specific ED visit information than chief complaint, from 10 EDs to strengthen HAI syndromic surveillance efforts.

In 2017, the NJDOH was aware of one NJ resident whose surgical site was infected following a cosmetic procedure outside of the US. This event triggered an intensive data mining using medical notes collected in EpiCenter. The NJDOH staff searched one week of medical notes data in EpiCenter with a specific keyword to identify additional potential cases of surgical-site infections (SSI) that could be associated with medical tourism.

Methods

The NJ resident whose surgical site was infected following a cosmetic procedure outside of the US was interviewed by NJDOH staff for details about their procedure. First, the patient's interview results were reviewed to prepare a set of SSI and travel related keywords to be used in performing data mining in medical notes collected in EpiCenter. The interviewed patient had tummy tuck and liposuction surgeries; therefore, it was decided to search for "tummy tuck" as a keyword in EpiCenter. The medical notes from August 31, 2017 through September 8, 2017 were reviewed to identify patients who developed SSI following a cosmetic procedure outside of the US.

Results

The search yielded 8 ED visits, one of which was identified as possible surgical site infection. The medical notes details indicated that the ED patient, a 21-year old female who had abdominoplasty (tummy tuck) and liposuction surgeries about a month prior, presented with post-surgical complaints such as pain, surgical dehiscence, and purulent drainage at the surgery site. Chief complaint text for the same ED patient indicated the patient had headache and dizziness which were less specific than medical notes.

The NJDOH staff contacted the ED to obtain additional information regarding the infection. The lab results from the ED showed that the patient was identified as having a post-surgery infection, which prompted public health to follow-up whether it was an HAI.

Conclusions

The limitation for this project was that the keyword search was conducted only on one week of data. The timeframe was kept short to pilot testing the keyword identified. The Centers for Disease Control and Prevention suggests clinicians should consider nontuberculous mycobacteria (NTM) infections in the differential diagnosis for all people who have wound infections after surgery abroad, including surgery that has occurred weeks to months previously (1). Future studies will explore larger data sets with additional keywords (e.g. country and organism) to see if potential cases can be identified as possible HAI and/or outbreak that will lead to public health investigations.

Keywords

Syndromic Surveillance; Healthcare-Associated Infections; EpiCenter; New Jersey

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References

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