Consultative Meeting on Chief Complaint Classifiers and Standardized Syndromic Definitions

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OBJECTIVE

We will convene a consultative meeting on chief complaint classifiers and standardized syndromic definitions in Pittsburgh, PA, from September 24-25, 2007. The goal of the meeting is to develop datasets and definitions that will support and enhance research on biosurveillance from chief complaints. We will accomplish that goal through the following aims:

(1) Catalogue and characterize existing chief complaint classifiers and the syndromic categories they map to;

(2) Develop consensus syndrome categories and definitions, using the catalogue of existing definitions as a starting point;

(3) Create a large dataset comprising chief complaints from around the United States.

BACKGROUND

Many automated syndromic surveillance systems rely on chief complaints to classify patients into syndromic case definitions. Emergency Department (ED) chief complaints are nearly ubiquitously available in the United States, routinely collected during a patient's encounter, generated the same day the patient is seen, and, in the majority of cases, available in electronic format as soon as the patient is registered. However, to be useful, free-text chief complaints must first be classified into syndromic categories or into some other type of coded representation that can be manipulated by a computer. Researchers have developed automated syndromic classification applications that take as input free-text chief complaints and provide as output the syndromic classification(s) for the patient. Chief complaint classifiers have enabled near real-time surveillance of ED visits across the globe.

There are two major barriers to research involving chief complaint-based syndromic surveillance. First, there exists no standard set of syndromes, which makes it difficult to compare systems against each other. Second, there is no large set of chief complaints available to the community for training and evaluating chief complaint classifiers. We will partially address these barriers in part by creating expert, consensus-based syndromic definitions and by compiling a dataset of chief complaints from around the country. We believe accomplishing our aims will enable advances in research and development of syndromic surveillance.

METHODS

With funding from ISDS, we invited 14 experts from public health, emergency medicine, and biomedical informatics who use output from a chief complaint classifier to participate in the meeting. At the meeting we will address our three aims as follows.

Aim 1: Catalogue and characterize chief complaint classifiers. We will catalogue and characterize existing chief complaint classifiers, providing a detailed comparison of how the classifiers work and what symptom and syndrome categories they map to. This work will form an important foundation for Aim 2 and will be completed prior to the meeting. All of the attendees will complete a survey questionnaire regarding their chief complaint classifier and/or syndromic surveillance system. The questionnaire will target (a) characteristics of the chief complaint classifier (e.g., keyword, statistical, linguistic) and (b) output of the classifier (e.g., symptoms or syndromes), and (c) detailed symptoms and/or syndromes the classifiers map to.

Aim 2: Develop consensus syndrome categories and definitions. Beginning with this symptom-syndrome map, at the meeting we will (1) come to consensus on a list of syndromic categories to standardize and (2) generate a symptom-syndrome map for the standard set of syndromic categories. We will develop standardized definitions for the most frequently used syndromes: respiratory, gastrointestinal, and neurological.

Aim 3: Create a dataset of chief complaints. We will collect chief complaints from the participants' institutions, along with any other institutions agreeing to donate the complaints. This collection of chief complaints could support development and evaluation of chief complaint classifiers and creation of a controlled vocabulary for chief complaints.

RESULTS

The meeting will be held in Pittsburgh on September 24 and 25, 2007. We will report the results and conclusions from the meeting. We will make all of our data and definitions available for use by others.