

New strep throat risk score brings patient data and big data together to potentially reduce unnecess

4 November 2013

A new risk measure called a "home score" could save a patient with symptoms of strep throat a trip to the doctor, according to a new paper in the *Annals of Internal Medicine*, conducted by Andrew Fine, MD, MPH, and Kenneth Mandl, MD, MPH, of Boston Children's Hospital. The score combines patients' symptoms and demographic information with data on local strep throat activity to estimate their strep risk, empowering them to seek care appropriately.

The home score represents the first health care tool to bring patient-contributed data and public health "big data" together to assess an individual's risk for a communicable disease.

The score is calculated using a patient's symptoms (i.e., presence or absence of fever and/or cough) and age. It also incorporates a statistic developed by Mandl and Fine, of Boston Children's 's Division of Emergency Medicine and Informatics Program, which captures the recent strep incidence in the patient's geographic area. If a patient's home score is low, then his or her risk of having an active strep infection is also low and a doctor's visit may not be warranted.

If packaged as an app or online tool and fed data from available surveillance sources, the home score could allow someone with a [sore throat](#) to learn whether they should consider getting a strep test without leaving home.

"Using the home score could empower patients to make informed decisions about their medical care by contributing information about their symptoms," said Fine. "Integrating local epidemiologic context with the symptom information permits calculation of a personal, local risk of strep throat."

The home score was developed using aggregated

patient visit data provided by MinuteClinic, CVS Caremark's retail health clinic business. Based on their models, Mandl and Fine suggest that broad use of the score could eliminate 230,000 unnecessary doctor visits for [strep throat](#) in the U.S. annually.

"The basic math here is that if group A strep is present in patients around you then you are more likely to have strep," explained Mandl. "The local epidemiology is so informative that when combined with just a few additional facts from an individual we can arrive at a reasonable initial diagnosis, without a health care visit.

"Because sore throat is so common, reducing these visits could alleviate strain on the health system, while saving significant opportunity costs for patients," added Fine.

The home score builds on ongoing efforts by Mandl and Fine to develop approaches for augmenting communicable disease risk assessment tools with surveillance data. By incorporating patient-reported data directly, it also highlights one way of using big data to help clinicians engage [patients](#) more closely in decisions about their [health care](#).

Provided by Children's Hospital Boston

APA citation: New strep throat risk score brings patient data and big data together to potentially reduce unnecessary (2013, November 4) retrieved 9 December 2021 from <https://medicalxpress.com/news/2013-11-strep-throat-score-patient-big.html>

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