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Applications of syndromic surveillance in resource poor settings: a series of case studies

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Objective
The aim of this study is to demonstrate how syndromic surveillance systems are working in low-resource settings while identifying the key best practices and considerations.

Introduction
Particularly in resource-poor settings, syndromic surveillance has been proposed as a feasible solution to the challenges in meeting the new disease surveillance requirements included in the World Health Organization's International Health Regulations (2005).

Methods
Information on established syndromic surveillance systems was collected from peer-reviewed articles (found in MEDLINE, Scopus and Google Scholar), proceedings from all ISDS Conferences and other conferences and searches through reference lists of papers. In addition, web pages of international health organizations, surveillance networks and Ministries of Health were explored. Identified syndromic surveillance systems were categorized by country, resource level and surveillance methodology, among other features. Eight systems were selected and examined in detail to extract transferable information.

Results
The literature demonstrates the many diverse, yet successful, syndromic surveillance efforts being implemented at the national and regional levels. Existing systems utilize a variety of data sources, data transmission techniques and analysis methodologies, ranging from low-tech, highly manual systems to automated, electronic systems. Frequently, syndromic surveillance systems are a coordinated effort among several partners, supplement existing systems, incorporate both specific and nonspecific disease detection and are used in conjunction with laboratory-based surveillance.

Conclusions
Though not without challenges, syndromic surveillance has the potential to serve as a valuable disease detection tool in resource-limited settings. Further examination and evaluation of these systems will benefit global disease surveillance capacity.

Keywords
Biosurveillance; syndrome; developing countries

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