

POSTER ABSTRACTS
8th Annual HMO Research Network Conference
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Infectious Disease
05

Population Surveillance through Electronic Medical Charts.

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Background: Current surveillance systems that are based on claims data and other administrative data sets may be too insensitive and slow to recognize or respond to infectious outbreaks or bioterrorism incidents. New and innovative population based syndromic surveillance systems are required to meet the current public health needs. The clinical information system (CIS) currently utilized at Kaiser Permanente Colorado has enabled time critical surveillance and reporting of population symptomatic conditions.

Methods: Several steps are taken to obtain and evaluate recorded medical data. (1) Patient related chief complaints from the point of initial medical provider contact and subsequent diagnosis and procedures are captured and recorded in an electronic medical chart (CIS). (2) Daily extracts of all newly recorded chart notes are processed through a nightly batch job. (3) Chart extract files are programmatically reviewed and select chart subjects are extracted and formatted into a logical relational format. Such areas as vital signs, patient complaints, health risk, procedure orders, reported values, lab results, assessments, and in-office procedures are captured and recorded. (4) These data are electronically transferred on a daily or weekly basis to researchers and public health officials for action and dissemination.

Results: Through a reviewed of sentinel events recorded as coded terms, patient complaints and provider assessments can impart significant preliminary warnings of population syndromic trends. Daily statistics compared to baseline statistics with seasonally adjusted factors can provide very accurate whole membership based information. This surveillance method was implemented last year with the Colorado Department of Health & Environment in monitoring the onset and duration of the influenza season and successfully provided timely raw data for trend measurement. Other preventive health related and research specific interventions have also been implemented using these 'real-time' patient specific data.

Conclusions: Through access to medical chart documentation, and the use of coded terms to record complaints and assessments, real-time trends in symptomatic conditions can be determined and reported within 48 hours of recording. Electronic capture, collection, evaluation, and storage of provider coded assessments, procedures, and complaints permits monitoring of wide population symptomatic trends.

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