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Abstract (poster session)

Early detection of community outbreaks of respiratory tract infections from house-call visits in the metropolitan area of Athens, Greece

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Objectives: The traditional Serfling-type approach for influenza-like illness surveillance requires long historical time-series. We retrospectively evaluated the use of recent, short, historical time-series for recognizing the onset of community outbreaks of respiratory tract infections (RTIs). **Methods:** The data used referred to the ratio of diagnoses for upper or lower RTIs to total diagnoses for house-call visits, performed by a private network of medical specialists (SOS Doctors) in the metropolitan area of Athens, Greece, between 01/01/2000 and 10/12/2008. The reference standard classification of the observations was obtained by generating epidemic thresholds after analyzing the full 9-year period. We evaluated two different alert generating methods [simple regression and cumulative sum (CUSUM), respectively], under a range of input parameters, using data for the previous running 4-6 week period. These methods were applied if the previous weeks contained non-aberrant observations. **Results:** We found that the CUSUM model with a specific set of parameters performed marginally better than simple regression for both groups. The best results (sensitivity, specificity) for simple regression and CUSUM models for upper RTIs were (1.00, 0.82) and (1.00, 0.90) respectively. Corresponding results for lower RTIs were (1.00, 0.80) and (1.00, 0.86) respectively. **Conclusions:** Short-term data for house-call visits can be used rather reliably to identify respiratory tract outbreaks in the community using simple regression and CUSUM methods. Such surveillance models could be particularly useful when a large historical database is either unavailable or inaccurate and, thus, traditional methods are not optimal.