

Antiviral Prescription Data to Enhance Influenza Surveillance

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OBJECTIVE

This presentation describes the use of influenza antiviral data from retail pharmacies to supplement influenza surveillance.

BACKGROUND

Influenza surveillance provides public health officials and healthcare providers with data on the onset, duration, geographic location, and level of influenza activity in order to guide the local use of interventions. The Influenza Sentinel Provider Surveillance Network tracks influenza-like illness (% ILI) across the U.S. population.

METHODS

BioSense has recently acquired real-time anti-infective prescription data from a national electronic pharmacy claims management services provider. Influenza antiviral prescription data from a historical dataset from approximately 30,000 pharmacies in all 50 states over the period of October 2003 to May 2007 were used for this analysis. The weekly proportion of antiviral drug prescriptions among all anti-infectives was compared to the sentinel provider % ILI. Correlation coefficients were calculated for each antiviral for each of the 4 influenza seasons at the national and regional levels. A lag analysis to compare timing of increases and decreases in antiviral use relative to % ILI was also performed.

RESULTS

On the national level, the overall correlation of all antivirals to % ILI for all 4 influenza seasons was 0.95. However, there was substantial variation in the correlation by individual drug, season, and region. Amantadine and rimantidine prescriptions were highly correlated to % ILI in the 2003-4 and 2004-5 influenza seasons, but volume of prescriptions decreased precipitously after CDC recommended discontinuation of their use for influenza treatment during the 2005-6 season. Oseltamivir prescriptions were highly correlated to % ILI except during the 2005-6 season, when individuals began stockpiling the drug following extensive media coverage of the threat of avian and pandemic influenza. Similar patterns were also seen at the regional level. The lag analysis showed that increases and decreases in antiviral use were concurrent with changes in % ILI.

CONCLUSIONS

Antiviral prescription claims data may be used to supplement traditional influenza surveillance data, especially if media coverage of influenza is taken into account.

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