

Moderate influenza A (H3) activity in Europe during the 2006-2007 winter

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Research question: To describe the epidemiology and virology of influenza activity in Europe during the 2006-2007 season and to assess the impact of circulating influenza virus strains.

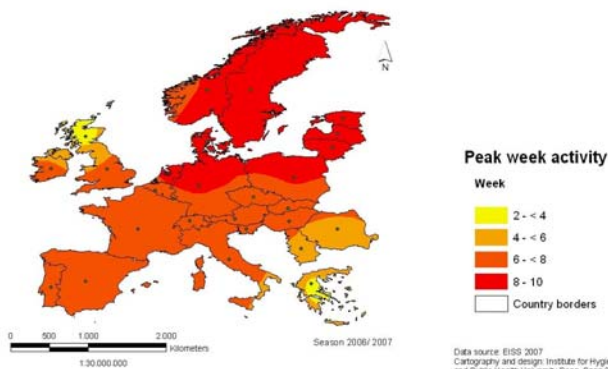
Introduction

The European Influenza Surveillance Scheme (EISS) has collected clinical and virological data on influenza activity since 1996 (www.eiss.org). An important objective of EISS is to provide timely and authoritative clinical, epidemiological and virological information on influenza activity in Europe.

Methods

Thirty-three countries actively participated in EISS during the 2006-2007 influenza season (twenty-six EU countries, Norway, Serbia, Switzerland and Ukraine). Clinical data are collected by sentinel physicians in each country and virological testing is carried out by national reference laboratories.

Figure 1: Timing of peak clinical influenza activity, 2006-2007 season



Note: The isobars on the contour map represent interpolated time of peak activity distributed spatially at 2-week intervals. [Source: Saito et al. *Eurosurveillance Weekly*, 27 October 2005].

Results

Seasonal influenza epidemics started around New Year, with consultation rates first increasing in Scotland, Greece and Spain. At their highest, the levels of clinical activity were of medium intensity in 19 countries and of high intensity in eight countries.

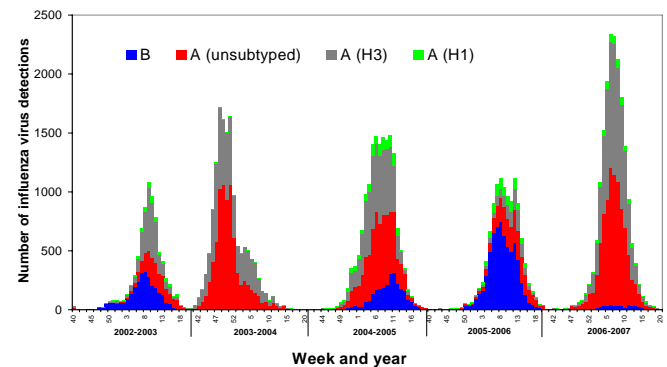
A spatial analysis revealed a significant south to north trend ($R^2=0.287$; $p=0.003$) in the timing of influenza activity across Europe (see figure 1), similar to what has been observed in three of the eight preceding winters.

Results (continued)

Influenza activity was mainly associated with influenza A viruses (97%; $N=17\ 759$), except for Romania where 45% of the viruses were influenza B. Most influenza A viruses were of the H3 subtype (93% of the 8934 H-subtyped viruses). Compared to the 2005-2006 season - a season where influenza B was dominant - there were twice as many positive specimens in the peak week during the 2006-2007 season (1111 versus 2254) (see Figure 2).

Of the 3877 antigenically and/or genetically characterised viruses, 3318 (86%) were closely related to the A/Wisconsin/67/2005 (H3N2)-like reference virus.

Figure 2: Total influenza detections per week: Europe, 5 seasons (2002-2007)



Note: Stacked bars represent the total number of sentinel and non-sentinel specimens positive for influenza virus by week. The number of countries that reported virological data to EISS was: 22 - 2002-2003; 23 - 2003-2004 and 2004-2005; 28 - 2005-2006; and 29 - 2006-2007 season

Conclusions

- The 2006-2007 influenza epidemic in Europe was characterised by moderate clinical activity
- Spatial analysis revealed a south-north spread pattern across Europe
- The dominant virus strain was influenza A (H3)
- Overall there was a good match between the vaccine virus strains and the reported virus strains

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