Surveillance of School Absenteeism in the Northern Region of Portugal: 2006-2010

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INTRODUCTION

Influenza is an important public health hazard with implications on allocation of health care resources. Nowadays influenza still remains an important cause of morbidity and mortality. School-aged children are at high risk for influenza, being stricken first and showing the highest attack rates. Schools are therefore places which gather excellent conditions for the dissemination of influenza and other respiratory infections. During the periods of major influenza activity there is a significant rise in working and school absenteeism, therefore school absenteeism data can be a useful tool for influenza surveillance.

Considering the importance of early influenza activity detection and integrated in the Contingency Plan for Pandemic Influenza Preparedness of the Northern region of Portugal, in September 2006 the Public Health Department of the Northern Regional Health Administration developed a surveillance system based on all-cause school absenteeism for early detection of influenza activity and outbreaks. This surveillance system included Elementary Schools (6-10 year-old students) and Middle Schools (11-15 year-old students).

The aims of this project was to explore the usefulness of all-cause school absenteeism as a potential indicator of influenza activity and to present the results of the surveillance system during four school years (2006-2010).

METHODOLOGY

Three schools were selected from each municipality to participate in this project (Figure 1).

In the beginning of each school year (from 2006 until 2010), all schools provided the number of students in each class.

On a weekly basis, between week 40 and week 20 of each year, every school reported electronically the number of students absent for a full day during the week under surveillance, despite the cause of absence.

School absenteeism rates were calculated for the region (total and per type of school) and for the year 2009/2010 regional weekly rates were compared with the weekly number of Influenza-Like Illness (ILI) cases registered in public health services in the under 20 years old, using the correlation coefficient.

RESULTS

School absenteeism surveillance during year 2009-2010 covered 13646 children (4.5% of total number of children in Northern region Elementary and Middle Schools).

During 2009-2010 maximum school absenteeism weekly rate (5.74%) was observed in week 47 being 1.6 times higher than maximum observed in previous years (3.48% - 1st week 2008). The epidemic Autumn-Winter wave for ILI cases registered in regional public health services during season 2009-2010 peaked one week later (Figure 3). School absenteeism 2009-2010 weekly rate profile roughly followed the rise, peak and fall of ILI epidemic curve. The correlation coefficient between all cause absenteeism and the number of ILI cases in the age group 0-19 years was 0.7602 (Figure 4).

DISCUSSION

All-cause school absenteeism data are a potential indicator of influenza activity. After four years of surveillance we can consider absenteeism data complete and accurate. The collecting and reporting procedures for schools were simple and the timeliness of receipt was adequate. Nevertheless the system has some weaknesses, namely the lack of continuity of data (weekends and holidays) and low specificity. Because of age distribution of pandemic influenza A (H1N1) 2009 in the Northern region of Portugal, the correlation between data from the two systems was particularly high. We consider that data from all-cause absenteeism can trigger the need to validate and refine information and to conduct a more in-depth investigation.

BIBLIOGRAPHY