Background  Influenza B is often regarded as the milder form of the disease. The early 2012–2013 season in Wales saw the highest rate of influenza B-associated primary care consultations since 1994–1995 and considerable hospitalisations.

Objectives  This report summarises features of the first 100 confirmed cases during 2012–2013 in Wales.

Methods  Case information was sourced from routine laboratory testing and virological surveillance.

Results and conclusions  Influenza B (Yamagata lineage) viruses dominated, mainly affecting younger adults, admission to critical care was unexpectedly common. Low vaccine uptake amongst at-risk patients may have contributed to the burden of influenza in secondary care in Wales.

Keywords  Influenza, influenza B, surveillance, severity, Wales.

Introduction  Between late November 2012 and January 2013, there was an increase in the number of laboratory-confirmed influenza B infections in Wales, predominantly in the south-east region. This was accompanied by an increase in the reported GP consultation rate for influenza-like illness (ILI), which exceeded the baseline threshold for normal seasonal activity (25 consultations per 100,000) for a 2-week period (from 31/12/2012–13/1/2013). With the exception of the two influenza A(H1N1) pandemic waves seen in Wales during 2009–2010, and the 2010–2011 influenza season, also associated with influenza A(H1N1)pdm09, this is the only season to have exceeded the baseline threshold since 2000. Unusually, for an influenza B-dominated season, the increased activity was not associated with an increase in reported school outbreaks, although the school Christmas holidays (22/12/2012–6/1/2013) may have disrupted circulation in this setting. It has been 17 years since there was an exceedance in the reported GP consultation rate for ILI in Wales, over the baseline threshold, attributed to influenza B activity. Furthermore, the last season where significant predominance of influenza B activity was recorded was characterised by numerous school outbreaks during late Spring (2008), but not by an increase in the reported GP consultation rate for ILI in Wales.

Methods  Influenza-like illness consultation rate data were obtained through the Welsh GP sentinel surveillance scheme. Real-time lineage typing was performed in Wales during the 2012–2013 season for all influenza B detections using a combination of two previously published assays. The lineage typing results were reviewed, together with accompanying clinical and epidemiological details, for each of the first 100 confirmed influenza B cases.

Results  The samples included in this analysis were collected between 22 November 2012 and 7 January 2013 (Figure 1A). Eighteen cases were detected in primary care, through the Wales Sentinel GP surveillance scheme, and the remaining
82 cases were admitted to, or attending, secondary care in Wales.

The median age of cases increased from 28 years in week 48 2012 to 69 years in week 01 2013 (Figure 1B). The number of cases in intensive care units (ICUs) also increased, from three in week 48 2012 to six in week one 2013 (Table 1). Lineage typing detected a total of eight influenza BVictoria lineage viruses: six during weeks 47 and 48 in 2012 and two during week 01 2013 (Figure 1A). The remaining viruses (92%) were of the Yamagata lineage, including all of the primary care cases.

All 18 cases from primary care were younger than 65 years of age, with no reported risk conditions that would make them eligible for influenza immunisation in Wales. 

A total of 53 cases attended secondary care with mild–moderate respiratory illness. Of these, 32 (60%) were in an at-risk category for influenza: 11 cases were aged 65 years or older; 21 were aged under 65 years with an underlying medical condition (most commonly haematological malignancy, solid organ transplant, chronic respiratory disease, pregnancy and diabetes).

Severe lower respiratory tract infection or acute respiratory illness requiring admission to an ICU was reported in 24 cases. Of these, 11 (46%) were in an ‘at-risk’ category for influenza: eight cases were aged 65 years or older; three were aged under 65 years with chronic respiratory disease or haematological malignancy.

Although vaccination status of the hospitalised cases described here is unknown, in total, of the 82 hospitalised cases, 44 (54%) would have been eligible for a free seasonal
influenza vaccination under Welsh Government guidelines because they were aged 65 years and older or were in an at-risk group. As the vast majority of cases were infected with Yamagata lineage virus, which is included in the current seasonal influenza vaccine, moderate immunity following vaccination may have been expected. Although a substantial proportion (76%) of the hospitalised cases aged younger than 65 years were not eligible for vaccination, it could be expected that uptake amongst those who were eligible was suboptimal. As on 16 January 2013, only 49% of patients in Wales younger than 65 years with risk conditions had been vaccinated and coverage in patients aged 65 years and older was 67%, which falls short of the WHO seasonal influenza immunisation target of 75%. In addition, enhanced surveillance data were available for four eligible patients admitted to ICU and indicated that none had received the 2012–2013 seasonal influenza vaccine.

Discussion

The 2012–2013 influenza season in Wales has, unusually, produced significant levels of infection with influenza B which are reflected in both the ILI consultation rate and in laboratory data. The large proportion of hospitalised cases aged younger than 65 years, who were not considered to be in an at-risk group for influenza, may also support the observation that influenza B activity was severe this season, compared to previous seasons in Wales. Although influenza B has often been considered to be a milder illness than influenza A, there have been a significant number of cases requiring intensive care. Previous studies have highlighted how serious influenza B infection can be, with outcomes including bacterial pneumonia, cardiac injury and death. In addition to improving understanding of the pathogenesis of influenza B, it has been suggested that there is a need to improve awareness of the potentially severe outcomes of influenza B cases. One limitation of this study is the lack of detailed outcome information on hospitalised and ICU influenza cases; improving accessibility of this information would greatly enhance surveillance of the severity of seasonal influenza. Median age of cases was relatively low (41 years); this may reflect the fact that influenza B virus genomes drift less readily than influenza A viruses, and thus, older adults may have some pre-existing immunity from past exposure. A major limitation of this study is that information on influenza immunisation status of hospitalised and ICU patients was not readily available; routine collection of this information should be prioritised going forward in order to improve understanding of the potential benefits of vaccination against influenza B. Assuming that vaccine coverage in the patients in this study reflected reported coverage for at-risk patients in Wales younger than 65 year of age, low uptake rates may have also contributed to the high proportion of illness in younger patients. Early reports of moderate vaccine efficacy against influenza B (62%, 12 and 78% 11), together with our data showing predominance of Yamagata lineage viruses in Wales, a lineage included in the 2012–2013 season influenza vaccine, suggest that higher vaccine uptake in ‘at-risk’ patients may have helped alleviate secondary care pressures in Wales, at a time when services were already stretched due to high levels of norovirus14 and respiratory syncytial virus activity. Communication of the importance of influenza vaccination in at-risk groups and the risks of not being vaccinated should be considered a priority in preventing the ILI-related burden to secondary care in the future.

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