

**Communicable Disease Surveillance Centre (NI)  
Dept. of General Practice, QUB, Data Retrieval Project  
Regional Virus Laboratory**

**Enhanced Surveillance of Influenza  
in Northern Ireland**

**Summary  
Season 2004-2005**

**This summary is circulated to Trust Chief Executives, Directors of Public Health, Consultants in Communicable Disease Control, participating practices and other interested parties. We would encourage you to disseminate it internally to any relevant personnel. For further information or any comments on the contents or presentation of this document, please contact Dr Hilary Kennedy at 028 9026 3765 or E-mail at <mailto:hilary.kennedy@hpa.org.uk>**

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- ◆ **Normal levels of influenza virus in circulation throughout winter 2004-05**
- ◆ **Predominant strain was influenza A H3 (similar to the A/California-like viruses in circulation throughout the UK)**
- ◆ **Rates of illness were, once again, highest in children under 4 years of age**

## **Enhanced Surveillance of Influenza in Northern Ireland**

### ***Introduction***

This bulletin is produced as part of the enhanced surveillance of influenza in Northern Ireland. The principal aim of the project is to provide an early warning scheme for influenza virus circulation in Northern Ireland. The scheme involves the weekly compilation of data from sentinel GP practices and out-of-hours Co-Operatives (Co-Ops).

### ***Sentinel GP Practices***

During last season (2003/04), consultation-based information regarding 'flu and 'flu-like illness was supplied by twenty-three spotter practices across the Province. During the early part of the current season, one new practice joined the scheme. This brought to 24 the number of practices taking part during 2004-05, representing 148 914 patients throughout Northern Ireland (approximately 8.8 % of the population). The majority of these practices have contributed to the ESINI scheme each year since it began, in October 2000.

### ***Co-Operatives***

Out-of-hours Co-Operatives were, once again, involved in provision of information for the enhanced influenza surveillance scheme. Five Co-Ops, covering approximately 1 262 892 persons (74.2 % of the population), undertook to supply weekly data on numbers of calls received and the age/sex breakdown of those calls. In addition, two Co-Ops (serving approximately 15 % of the population) were able to provide details on the numbers of individuals (by age-group) covered by their out-of-hours services. Therefore, for the first time, it became possible to calculate Co-Op age-specific call rates (although it should be noted that these calls were not coded and may have been due to a variety of illnesses over the winter period e.g. respiratory, gastrointestinal). It is hoped that, in due course, it may become possible to identify the proportion of calls each week attributable to 'flu-like illness or upper respiratory tract infection.

The purpose of the scheme is to supplement the surveillance data already available through routine laboratory testing. Many of those who suffer from influenza will self-medicate, or may visit or contact their GP (or nearest Co-Op) if their symptoms are more severe. It is unlikely that samples would be taken from such individuals for laboratory testing. Consequently, most samples which are tested by the laboratory originate from patients who have taken ill, become hospitalised due to an underlying condition such as diabetes or cardiorespiratory disease, or who have developed complications. By the time samples have been taken from such patients for laboratory testing, virus will have been circulating in the community for several weeks. To increase the predictive value of surveillance, it is important that more timely and representative information is retrieved. One way in which this has been achieved over the past few years is to request that as many sentinel GPs as possible also take part in enhanced virological surveillance. This involves the taking of nasal and throat swabs from patients presenting with clinical influenza and submission of them to the Regional Virus Laboratory for testing. For the incoming 2005-06 season, a new pharmacy-based syndromic surveillance pilot study is being developed in association with the Pharmacy Group of DHSSPSNI. One of the aims of this pilot study is to explore the additional potential for early detection of influenza/respiratory infection in the population by monitoring the sale of over-the-counter cough and cold medications in a number of pharmacies throughout Northern Ireland.

## ***Consultation rates***

### ***Sentinel GP Practices***

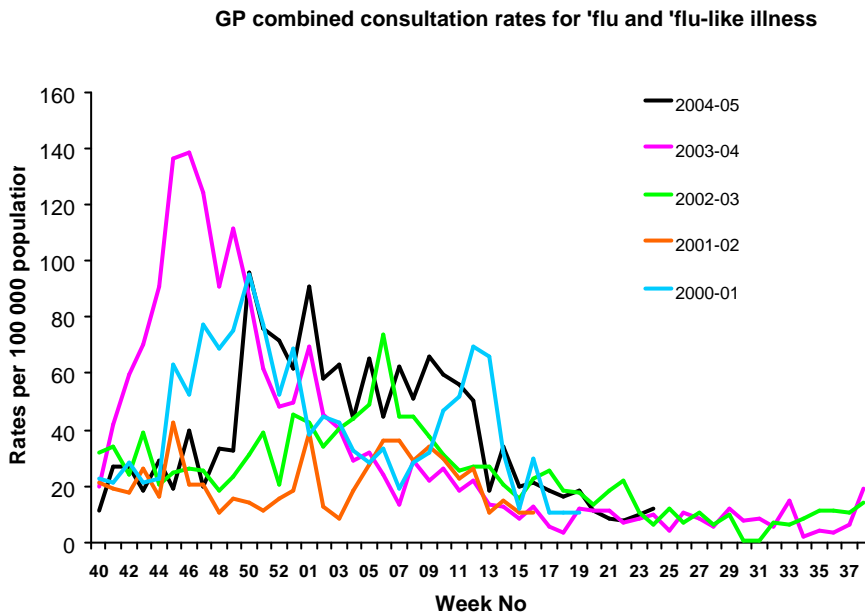
With the arrival of SARS 2003 and the continued concern over avian influenza in South East Asia, it has become important that unexplained respiratory illness (particularly clusters amongst healthcare workers) needs to be investigated quickly and rigorously. For this reason, and in order to begin establishing baselines for 'flu and 'flu-like illness in Northern Ireland, sentinel GPs have been requested, since mid-2003, to provide consultation data throughout the year: almost all have done so. During 2004-05, GP consultation rates for 'flu and flu-like illness were as would be expected during a normal winter and were considerably lower than those recorded for the 2003-04 season (Figure 1).

Sixteen GP surgeries also agreed to take part in enhanced virological surveillance during last winter, taking nasal and throat swabs of patients presenting with clinical influenza. A total of 94 swabs were submitted to the Regional Virus Laboratory by sentinel GPs between Week 40 of 2004 and Week 20 of 2005.

In Week 45 of 2004, the first case of influenza (A H1) was confirmed in the Province. This was from a middle-aged adult registered with a sentinel GP practice. Further detections of influenza A H1 occurred for a number of weeks before overlapping, in Week 50 of 2004, with the first influenza A H3 detection of the season. From then, until the first influenza B detection (Week 11 of 2005), the majority of isolates were identified as influenza A H3. Sequencing, carried out on an influenza A H3 isolate, showed it to be similar to the A/California-like viruses that are known to have been in circulation throughout the UK during winter 2004-05.

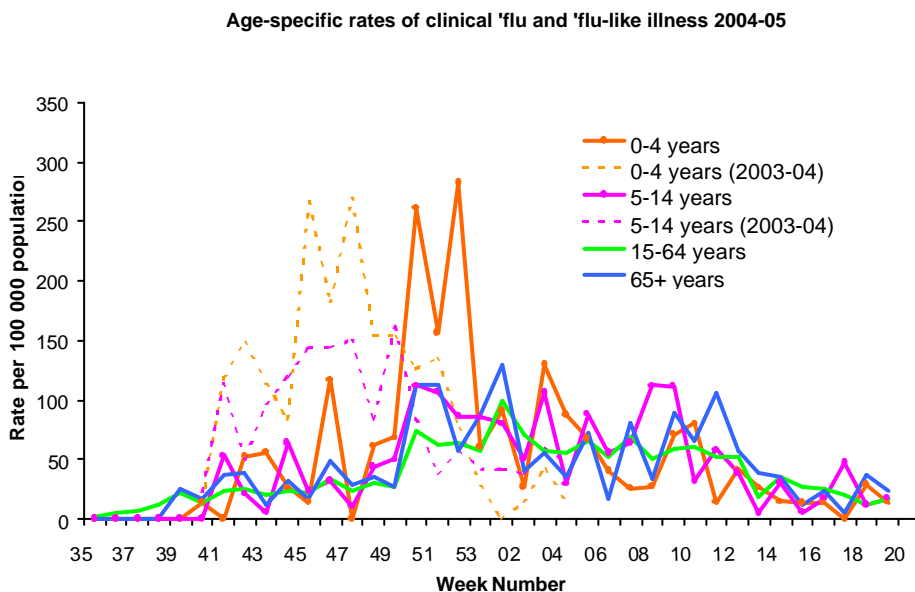
During 2004-05, a total of 16 cases of influenza infection were laboratory confirmed in patients registered with a sentinel GP practice; one was influenza A H1 (Week 45), one was influenza A untyped (week 52), eleven were influenza A H3 (Week 03 to Week 12) and three were influenza B (Weeks 11 & 12).

**Figure 1:**



As in 2003-04, children – particularly those under 4 years of age - were the group most affected by 'flu-like illness during winter 2004-05. Approximately half of all laboratory confirmed influenza infections (from both sentinel and non-sentinel sources) occurred in this age-group. Figure 2 shows the combined age-specific rate for 'flu and 'flu-like illness in all four age groups.

**Figure 2:**



## Co-Operatives

Once again, Co-Op call rate data for 2004/05 followed a very well-defined pattern throughout the period of surveillance, with peaks in call rates occurring during the holiday periods of Christmas/New Year, St Patrick's Day and Easter (Figure 3). Examination of the age-specific data provided by two Co-Ops also indicated that the highest call rates occurred in those aged 0-4 years (Figure 4). However, in the absence of coding, this observation cannot be attributed solely to respiratory disease.

Figure 3:

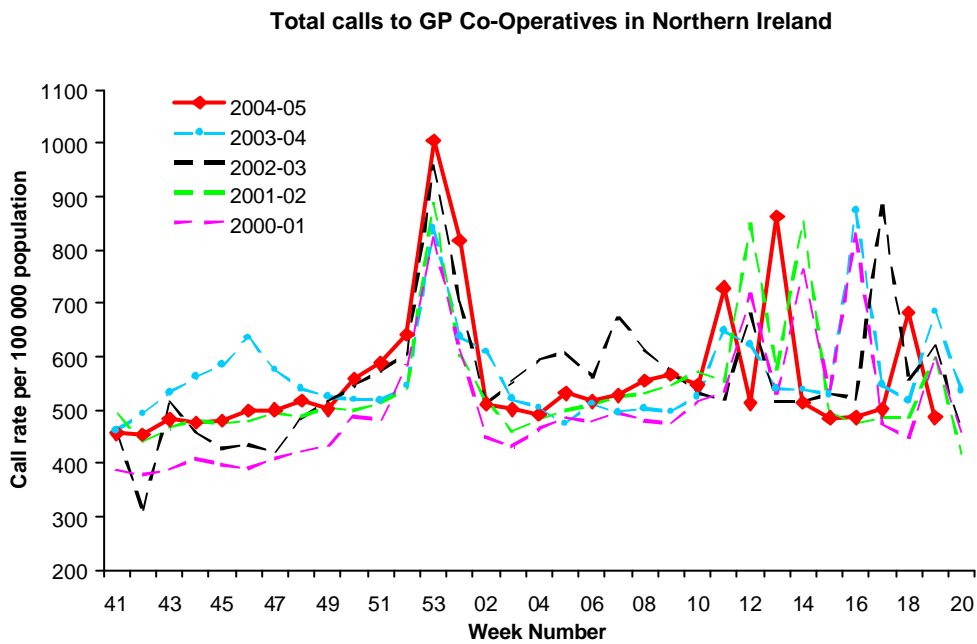
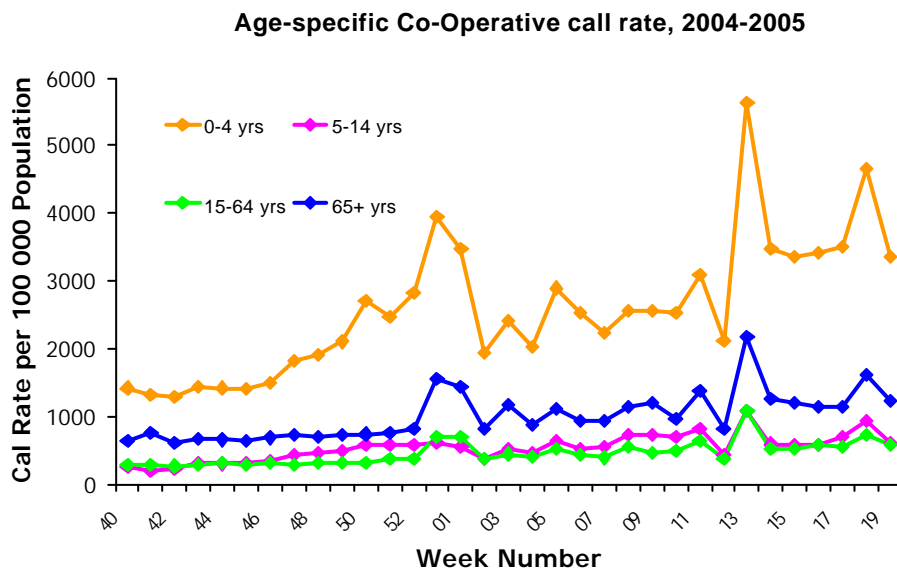


Figure 4:



## Virus activity in Northern Ireland

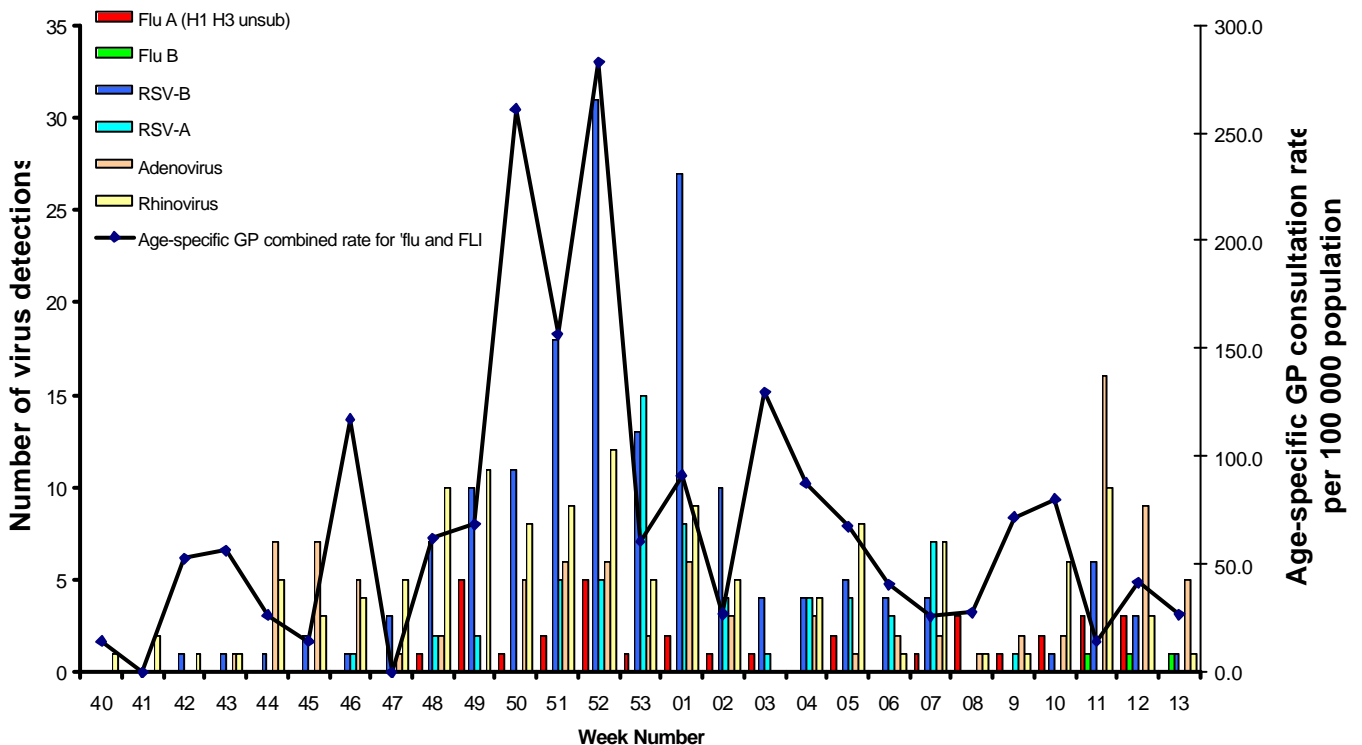
In comparison to 2003-04, influenza virus activity remained at normal winter levels during the 2004-05 season

A total of 74 cases of influenza infection (13 influenza A H1, 39 influenza A H3, 14 influenza A untyped, plus 8 influenza B) were laboratory confirmed during the season, the last in Week 13 of 2005. (This compares to 116 laboratory confirmations during 2003-04). Sixteen isolates originated from sentinel GP swabs and the remaining 58 originated from hospitalised patients. Approximately half of all influenza detections were in children aged 0-4 years.

Respiratory virus infections, other than influenza, were also laboratory confirmed in approximately 400 individuals across Northern Ireland during the 2004-05 season. The majority of these were hospitalised patients and, of these, more than two-thirds were under 1 year of age. As expected, the main respiratory pathogens detected were RSV, Rhinovirus and Adenovirus (Figure 5).

Figure 5:

GP combined age-specific consultation rate versus respiratory virus detections, 0- 4 years, 2004-05

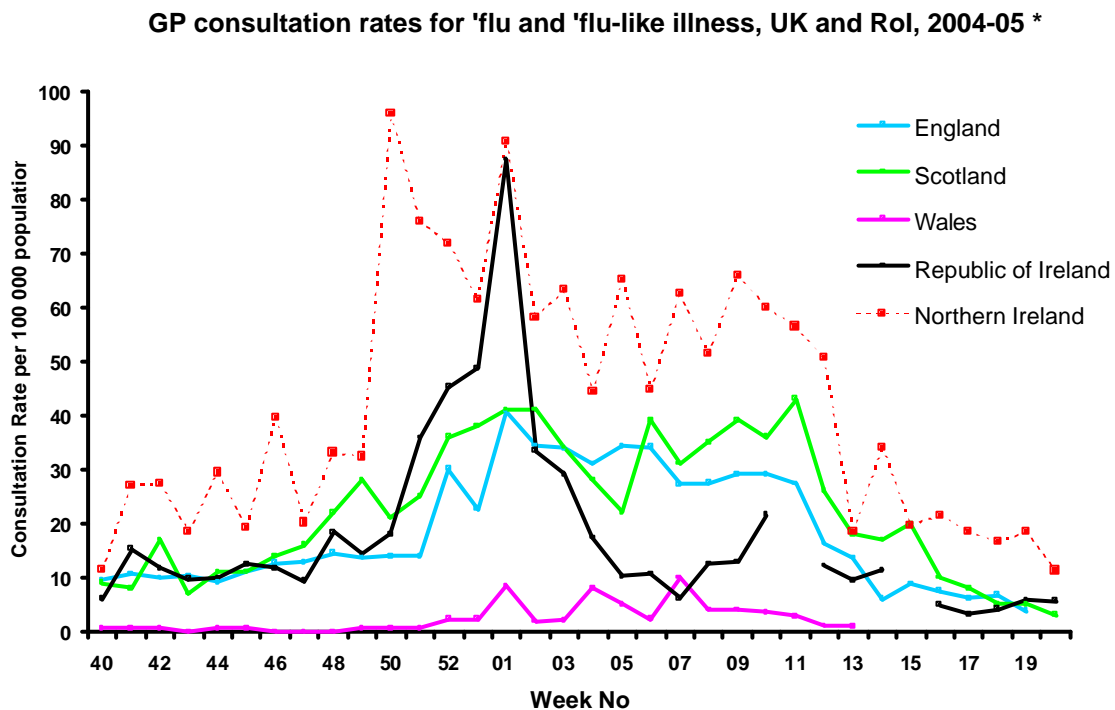


## Flu surveillance elsewhere

### England, Scotland, Wales and Republic of Ireland

In 2004-05, RCGP and sentinel scheme consultation figures across much of the UK and followed largely the same pattern as that seen in Northern Ireland, with consultation rates in both England and Scotland taking longer than usual to return to low levels. As in previous years, consultation rates in Wales remained low throughout the season.

Figure 6:



\* Data extracted from HPA Weekly National Influenza Report (England, Wales & Scotland) and from Health Protection Surveillance Centre Report (Republic of Ireland)

### Virological Surveillance England, Wales & Scotland

Between Week 40 and Week 04 of the 2004-05 season, there were a total of 985 PCR positive detections for influenza made from specimens referred to the Enteric Respiratory and Neurological Reference Laboratory (ERNVL) from England, Wales, Scotland and Northern Ireland. Of these, 696 were identified as influenza A H3, 145 as influenza A H1 and 144 as influenza B. During the same period, other NHS and HPA

microbiology laboratories across England detected (by isolation, PCR, direct immunofluorescence or paired sera tests) a total of 446 influenza A infections and 80 influenza B infections. A summary of the 2004-05 season may be found at the HPA website: [http://www.hpa.org.uk/infections/topics\\_az/influenza/Activity0405/flureport.htm](http://www.hpa.org.uk/infections/topics_az/influenza/Activity0405/flureport.htm)

### **Virological Surveillance Republic of Ireland**

During the 2004-05 season, 55 influenza A (unsubtyped), 63 influenza A (H3N2), 37 influenza A (H1N1) and 47 influenza B viruses were detected by the NVRL. Swabs originated from both sentinel and non-sentinel sources. Twenty-seven of these were in the 0-4 age group, 24 were in the 5-14 age group, 132 were in the 15-64 age group and 18 were aged over 64 years. A summary of the 2004-05 season may be found at the HPSC website:

<http://www.ndsc.ie/Publications/InfluenzaWeeklySurveillanceReport/20042005Season/>

### **Europe**

European countries reported a late start to influenza activity in 2004-05, in contrast to the 2003-04 season. Between Week 40 of 2004 and Week 16 of 2005, over 14 000 influenza infections were laboratory confirmed across Europe; 6622 (47 %) were influenza A untyped, 4470 (32 %) were influenza A H3 (1609 further subtyped as H3N2), 747 (5 %) were influenza A H1 (312 further subtyped as H1N1 and 2 as H1N2) and 2344 (17 %) were influenza B.

European Country reports may be found on the EISS website: <http://www.eiss.org>

**CDSC (NI) would like to thank all sentinel GPs, their practice staff, Co-Ops and the Regional Virus Laboratory for providing timely data over the past year. Without the co-operation of all concerned, enhanced surveillance of influenza would not be possible.**