

IN THE NEWS

GASTROINTESTINAL ILLNESS AMONG HOLIDAYMAKERS RETURNING FROM ANDORRA

On 27 January 2002 an aircraft carrying returning holidaymakers, many ill with vomiting and diarrhoea, landed at Dublin Airport. The flight, originating from Toulouse, carried holidaymakers who had spent the week of 20-27 January on a skiing holiday in Andorra. A second flight from Toulouse, also carrying holidaymakers returning from Andorra, landed in Belfast, Northern Ireland, two hours after the Dublin flight. Many of the passengers on board this flight were also ill.

These passengers developed a rapid onset, short duration illness characterised by nausea, projectile vomiting and/or diarrhoea, suggesting that a virus such as NLV (Norwalk-like Virus) was the likely causative organism.

The National Disease Surveillance Centre in Ireland and the Communicable Disease Surveillance Centre in Northern Ireland undertook a joint epidemiological investigation. Preliminary findings showed that 32% of passengers (74/234) on the two flights had been ill, either during their holiday or on the plane journey home.

Early investigation indicated that there was a problem with the water in Andorra – the consumption of water and illness were statistically associated. The Andorran authorities were alerted.

NLV was isolated from a clinical sample from one of the holidaymakers from the Republic of Ireland. A preliminary report on this incident was published in *Eurosurveillance Weekly*.¹

A second incident occurred on 31/3/02. Another flight, again from Toulouse and carrying holidaymakers returning from a skiing holiday in Andorra, landed in Dublin with ill passengers aboard. Initial results indicate that about 25% of these passengers had been ill during their stay in Andorra. NLV has again been isolated from clinical samples taken from two of the passengers. The Andorran authorities have been notified about this second episode of illness among Irish air travellers.

References

1. Feeley E et al. Gastroenteritis in holidaymakers returning from Andorra, January-February 2002. *Eurosurveillance Weekly*, [Serial online] 2002 [cited, 7 March 2002] 10. Available at <http://www.eurosurv.org/2002/020307.html>

CIDR Update

CIDR is a Computerised Infectious Disease Reporting (CIDR) system being developed by the National Disease Surveillance Centre in collaboration with its partners, the Department of Health and Children, the Health Boards, the Food Safety Authority of Ireland and the Food Safety Promotion Board. CIDR aims to provide an integrated and standardised electronic surveillance system to collect, collate, analyse and disseminate good quality laboratory-based and clinical notification data on communicable disease in a timely manner in Ireland. In February 2002, Fujitsu (formerly DMR Consulting) were awarded the contract to design the CIDR core data repository. The Fujitsu design team are working closely with the CIDR project team and the CIDR Development Committee to ensure that the design reflects the needs of all CIDR partners. Fujitsu are developing the design using a method called reusable proof of concept (RUPOC). This means that a series of five prototypes will be developed during the design stage, and demonstrated to the users. The design will be completed by the end of June 2002. When the design is complete, a second tender will be issued to develop the system. In parallel with the design, work is ongoing at developing business rules for participation in CIDR by each of the partners. Template documentation has been developed. Agreement in principle has been reached on basing access to information in CIDR on professional role, on location and on isolate/disease.

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In Partnership for Prevention and Protection

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Introduction

Influenza is one of the most common and oldest diseases known to man. Cases of influenza occur every winter, but the impact on morbidity, mortality and health services varies depending on the circulating strain of virus and the level of pre-existing immunity in the community.^{1,2}

There are three types of influenza virus, A, B and C. Influenza C rarely causes human illness. The clinical course of influenza B changes little from year to year and is usually milder than influenza A. Influenza A varies considerably and is responsible for epidemics and pandemics.³ Influenza A viruses are divided into two subtypes on the basis of two surface glycoproteins, haemagglutinin (H) and neuraminidase (N). Minor changes in the surface glycoproteins are known as antigenic drift. Antigenic drift occurs between each influenza season. These minor changes necessitate annual reformulation of the influenza vaccine, which is based on the current circulating strains.⁴ Major changes in the surface glycoproteins occur infrequently and are known as antigenic shift. These result in the emergence of a novel virus that may be capable of causing an influenza pandemic. The Spanish Flu Pandemic of 1918 is acknowledged as the most devastating, resulting in an estimated 20-40 million deaths worldwide.⁵

In February 2002, the WHO announced the isolation of a new strain of influenza A virus. Since 1977, two influenza A virus subtypes, A (H1N1) and A (H3N2) have circulated widely among humans. The new strain, influenza A (H1N2) appears to have resulted from the reassortment of genes in the currently circulating H1N1 and H3N2 subtypes. Influenza A (H1N2) has been isolated from humans in Ireland, England, Scotland, France, Israel, Egypt, the US and Canada in recent months. This strain was previously detected in China during the 1988/1989 influenza season. Further spread of these reassortment viruses in humans did not occur at the time. As the new strain is a combination of the two components (H1N1 and H3N2) present in this seasons vaccine, vaccinees should have a good level of immunity. Those not vaccinated should also have some immunity as the H1N1 and H3N2 strains have been in circulation for the last two decades. To date, no unusual clinical illnesses are associated with the new strain.^{5,6}

The WHO has announced the composition of the vaccine for the 2002/2003 Northern Hemisphere influenza season: A/New Caledonia/20/99 (H1N1)-like virus, A/Moscow/10/99(H3N2) - like virus (the widely used vaccine strain is A/Panama/2007/99), and B/Hong Kong/330/2001 (a B Victoria-like virus). The H1N1 and H3N2 components are considered to provide good protection against the new influenza A (H1N2) strain.⁷

Influenza surveillance is essential during a pandemic or inter-pandemic period to allow planning of control measures such as vaccinations. A national surveillance system must be able to:

- Detect increased influenza activity in the community.
- Report on influenza activity accurately and in a timely fashion.
- Confirm which influenza strains are circulating.^{3,8}

This is the second year of influenza surveillance using computerised sentinel general practices in Ireland. The National Disease Surveillance Centre (NDSC) is working in collaboration with the National Virus Reference Laboratory (NVRL) and the Irish College of General Practitioners (ICGP).

Materials and Methods

Clinical data

Thirty-two general practices were recruited to report electronically, on a weekly basis, the number of patients with influenza-like illness (ILI). ILI is defined as the sudden onset of symptoms with a temperature of 38°C or more, with two or more of the following: headache, sore throat, dry cough and myalgia. Patients were those attending for the first time with these symptoms.

In total, the 32 sentinel general practices have 56 general practitioners, with an estimated total practice population size of 87,619, representing 2.4% of the population. The 32 practices include 20 practices from the 2000/2001 influenza season and 12 new

recruits. Practices are located in all health boards with their location based on the population of each health board.

The influenza surveillance period runs from week 40 in October to week 20 in May, with the week running Monday to Sunday. Sentinel GPs send a report to the ICGP electronically every Tuesday. All data received is anonymous. Information recorded includes the general practitioner ID number and patient data (date of birth, gender, date seen, diagnosis, weekending, week number and health board). If there are no cases of ILI, zero reporting is required.

Virological data

Sentinel GPs are asked to send a combined nasopharyngeal and throat swab on one patient per week where a clinical diagnosis of ILI was made. All materials necessary for swabbing, including instructions, easily identifiable laboratory forms and stamped addressed envelopes complying with An Post regulations, were supplied by the NVRL at the commencement of the surveillance season. Swabs were sent to the NVRL for testing using Shell Vial and PCR techniques. The NVRL supplied results on a weekly basis on the number of swabs received from each of the practices. The date of swab receipt, sex, date of birth, and positive or negative results by PCR and/or Shell Vial by type and subtype are all reported.

Influenza activity

The Departments of Public Health send an influenza activity index (no report, no activity, sporadic-, localised-, regional- or widespread activity) every week, to NDSC. The activity index is analogous to that used by the WHO global influenza surveillance system and the European Influenza Surveillance Scheme. The index is based on sentinel GP ILI consultation rates, laboratory confirmed cases of influenza, sentinel hospital admissions data and/or sentinel school absenteeism levels. Sentinel hospital data are based on: total admissions per week, total A/E admissions per week and total respiratory admissions per week (the definition of respiratory illness in this instance includes upper respiratory tract infection, lower respiratory tract infection, pneumonia, asthma, chronic bronchitis, and exacerbations of chronic obstructive airways disease).

Weekly influenza surveillance report

NDSC is responsible for producing a weekly influenza report, which is sent to all those involved in influenza surveillance and also posted on the NDSC website. Results of clinical and virological data are reported, along with a map of influenza activity, and a summary of influenza activity worldwide.

Results

Clinical data

Sentinel GP consultations for ILI were reported on a weekly basis per 100,000 population (Figure 1). The peak consultation rate for ILI between week 40, 2001 and week 15, 2002 occurred during week 12, with a GP consultation rate of 29.1 per 100,000 population. The GP consultation rate for the 2001/2002 influenza season remains quite low compared to the 2000/2001 influenza season. The peak age specific consultation rate between week 40, 2001 and week 15, 2002 was in the 15 to 44 year age group, with the overall rate slightly higher in females (Figure 2).

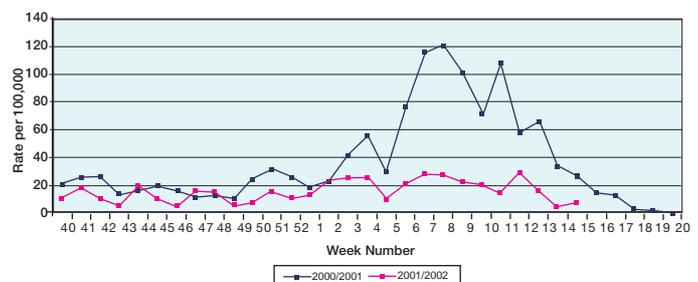


Figure 1: GP consultation rate for influenza-like illness per 100,000 population by report week, during the 2000/2001 and 2001/2002 influenza season.

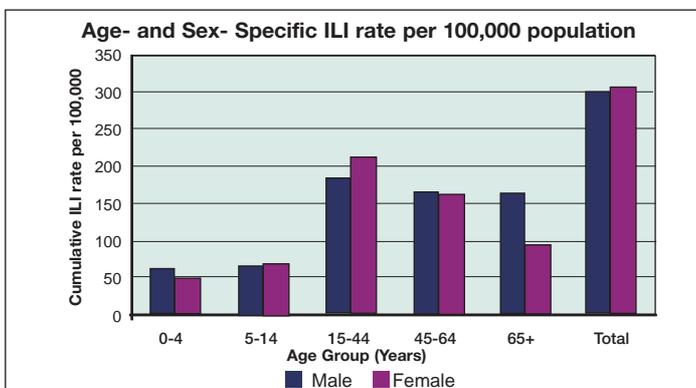


Figure 2: Age- and sex-specific ILI consultation rate per 100,000 population*, from week 40, 2001 to week 15, 2002.

*The denominator used in the age- and sex- specific consultation rate is from the 1996 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.

Virological data

The NVRL has received 233 swabs from sentinel GPs between week 40, 2001 and week 15, 2002. Of the 233 swabs, 65 (27.9%) were positive for influenza virus (Figure 3). There were 10 (4.3%) influenza A (unsubtyped), 2 (0.9%) influenza A (H1N1), 9 (3.9%) influenza A (H1N2), 43 (18.5%) influenza A (H3N2), and 1 (0.4%) influenza B viruses have been identified this season. The highest number of positive swabs (53.8%) was in the 15-44 year age group. Fifty-four percent (35) of positive cases were female, 40% (26) were male and 6.2% (4) were of unknown sex. The highest number of positive swabs occurred during week 6 (Figure 3).

The NVRL tested 634 respiratory specimens from non-sentinel specimens, by week 15, 2002. One influenza A virus was detected during week 9, and 2 during week 13. Respiratory syncytial virus (RSV) has been detected in 200 specimens, peaking during week 1, 2002. Since October 2001, there have also been 2 positive detections of adenovirus and one parainfluenza virus type 3.

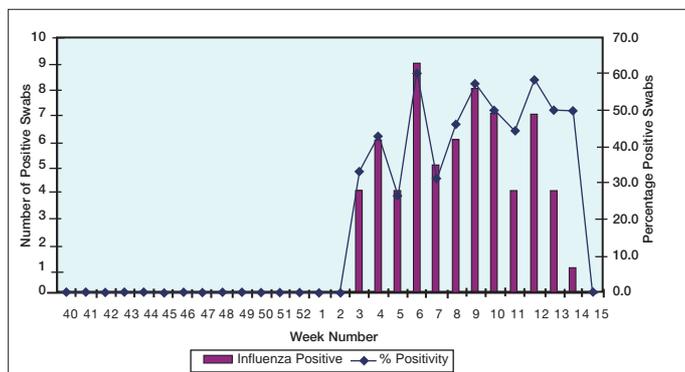


Figure 3: Number of positive influenza virus detections and the percentage of positive influenza virus detections, from week 40, 2001 to week 15, 2002.

Indicators of the geographical spread of influenza (influenza activity index)

Thirty-four percent of ILI cases have occurred in the Eastern Regional Health Authority, 3.0% in the Midland-, 21.7% in the South Eastern-, 2.6% in the North Western-, 6.4% in the North Eastern-, 18.4% in the Southern-, 9.7% in the Mid Western-, and 4.1% in the Western Health Board. Since week 3, 2002, four or more health boards have been reporting sporadic influenza activity weekly, apart from weeks 11 and 14 when only 2 health boards reported sporadic activity. Prior to week 3, most health boards reported no influenza activity. Regional or widespread influenza activity has not been reported this season in any health board.

Influenza activity worldwide

In Northern Ireland, morbidity levels for influenza and ILI have been low this season compared to the 2000/2001 influenza season. Influenza A (H3N2) has predominated this season in Northern Ireland. In England, Scotland and Wales, consultation rates peaked during weeks 5 and 6,

2002. Influenza outbreaks reported in schools in England that were investigated virologically were due to influenza A (H1N2).⁶ Heterogeneous levels of influenza activity have been reported across Europe. Influenza A and B are co-circulating this season, with influenza A (H3N2) dominating in most European countries.⁵

In the US, positive swabs for influenza virus peaked during week 8, with influenza A (unsubtyped) predominating.⁹ Influenza B/Victoria/2/87-like viruses have been detected this season. The B/Victoria lineage has not been identified outside of Asia since 1991. However, since March 2001, B/Victoria like viruses have been detected in Hawaii, Canada, China, Hong Kong, India, Italy, Japan, the Netherlands, Oman, the Philippines and Thailand. This season's vaccine is expected to provide lower levels of protection against viruses of this lineage.

In Canada, influenza A (H3N2) was the predominant circulating strain by week 15, 2002. The B/Hong Kong/22/01-like viruses detected this season in Canada are antigenically different from this season's vaccine, which is expected to provide limited cross protection against these viruses.¹⁰ In Hong Kong, influenza B and A (H3N2) have been the predominant viruses this season. Avian influenza A (H5N1) has been confirmed in a number of farms and markets since February 2002 in Hong Kong, resulting in the culling of thousands of chickens and has led to the first chicken vaccination programme. No human cases of H5N1 virus have been detected during this outbreak.

Discussion

Influenza activity has been low in Ireland this season. Overall, influenza morbidity levels are lower this season than the 2000/2001 influenza season (which was not as intense as the 1999/2000 season). Influenza A (H3N2) has been the predominant strain circulating this season.

Influenza activity can be measured not only by GP consultation rates, and laboratory confirmed cases of influenza but also through school and work absenteeism, hospital admission rates, sales of "over the counter" medications and deaths. Steps have already been taken to observe sentinel school absenteeism and sentinel hospital admission rates in each of the health boards. Further expansion and improvements in the present system are now being planned for the forthcoming season, including an increase in the number of sentinel GPs. Influenza surveillance is essential in order to minimise the impact of this fatal infection especially in high-risk patients: the elderly, very young and people with underlying health problems. Monitoring of ILI activity in the community over a number of seasons may help to predict the potential impact of influenza on the health services.

Dr L Domegan & Dr D O'Flanagan (NDSC); Dr D Nolan & Dr P Mc McCormick (ICGP); Dr S Coughlan, Mr S Dooley, & Mr P Quinn (NVRL).

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Malaria remains a major health problem worldwide. During January to March 2001, two U.S. citizens died from malaria after taking chloroquine alone or with proguanil for malaria chemoprophylaxis in countries with known chloroquine-resistant *Plasmodium falciparum* malaria.¹ Many travellers fail to take malaria prophylaxis or are non-compliant with medication.² Preventable deaths from malaria are usually associated with failure to take appropriate chemoprophylaxis.

The PHLS Advisory Committee on Malaria Prevention (ACMP) has published new guidelines on prevention of malaria.³ Four steps remain essential in malaria prevention:

- **Awareness of the risk.** The level of risk depends on the place to be visited, duration of stay, degree of exposure, level of drug resistance and type of traveller. The risk of malaria should be balanced against the risk of adverse reactions to antimalarials.
- **Bites by mosquitos:** prevent or avoid. Reducing mosquito bites has negligible adverse effects and significantly reduces the risk of contacting malaria.
- **Compliance with appropriate chemoprophylaxis.** Most deaths occur in those who take drugs irregularly or not at all.
- **Diagnose breakthrough malaria swiftly and obtain treatment promptly.** Malaria is relatively treatable if diagnosed early.

In Ireland, ten cases of malaria were reported in 2001; six were male and four were female. The age of cases ranged from twenty-two to sixty-four years, with a median age of 49.5 years. Five of these cases were Irish, two were Nigerian and three were of unknown nationality. The number of cases notified in Ireland from 1982 to 2001 is shown in Figure 1. These figures are likely to be an underestimation of the true situation as underreporting of cases is common.



Figure 1: The number of cases of malaria in Ireland from 1982-2001.

Countries where malaria was acquired were: Nigeria (5 cases), South Africa (2 cases), travelling in Uganda/Rwanda and other countries (1 case) and unknown (2 cases). The cases in South Africa were acquired while on safari/trekking, while those acquired in Nigeria related to both urban and rural travel. The duration of stay overseas ranged from 10 days to being a long-term resident in the country of infection.

The interval between the date of arrival overseas and the date of onset of symptoms ranged from two days to seven months with a median interval of seven days. Table 1 shows the reasons for travel with the corresponding number of malaria cases.

Table 1: The number of malaria cases in Ireland, 2001 by reason for travel.

Reason for travel	No. of cases
Holiday	3
Business/professional	2
Foreign visitor to Ireland	2
New entrant to Ireland	1
Irish citizen living abroad	1
Unknown	1
Total	10

Only four of the ten cases were reported to have taken malaria prophylaxis and only one person had continued to take malaria prophylaxis for one month following return from the malaria-risk area.

The time interval from date of onset of symptoms to date of starting treatment ranged from two to sixteen days, with a median interval of four days. The time interval from date of onset of symptoms to date of diagnosis ranged from 2 to 19 days with a median time interval of 6 days.

Blood film was the method of diagnosis for eight cases and this information was not recorded for the remaining two cases. The malarial parasite was *P. falciparum* in seven cases and in one of these, *P. ovale* was also demonstrated. There was one case each of *P. vivax* and *P. malariae* while the type of parasite was unknown in one case.

Six cases recovered and the outcome was unknown for the remaining four cases.

Key Points

- **Awareness of the risk.**
- **Bites by mosquitos:** prevent or avoid.
- **Compliance with appropriate chemoprophylaxis.**
- **Diagnose breakthrough malaria swiftly and obtain treatment promptly.**

Dr John Cuddihy and Dr Darina O'Flanagan, NDSC

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Salmonella Monthly Report (March 2002):

Strains are allocated to months based on the date of receipt of the isolate from the referring laboratory. These figures are provisional as work may not be finished on particular strains at the time of publication. Data are provided courtesy of Prof Martin Cormican and Dr Geraldine Corbett-Feeny, INSRL.

Health Board	E	M	MW	NE	NW	SE	S	W	Total
S. Typhimurium	2	3	6	0	0	2	0	1	14
S. Enteritidis	1	0	0	0	1	0	0	0	2
S. Hadar	0	0	0	0	0	1	0	0	1
S. Kentucky	0	0	0	0	0	0	0	1	1
S. Stanley	0	0	0	0	0	0	0	1	1
Total	3	3	6	0	1	3	0	3	19