E P I - I N S I G H T

IONAD NAISIUNTA FAIRE GALAIR

DISEASE SURVEILLANCE REPORT OF NDSC, IRELAND

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IN THE NEWS!

Consultation Documents: Legionnaires Disease and Invasive Nosocomial Aspergillosis

Legionnaires' disease is a notifiable disease in Ireland as defined by the Infectious Disease Regulations 1981. The Scientific Advisory Committee (Legionnaires' disease subcommittee) of the National Disease Surveillance Centre has drafted a document ,"The Management of Legionnaires' Disease in Ireland". The objectives of these guidelines are to enhance the care of patients with suspected or diagnosed legionnaires' disease, to improve the notification of such cases, and to safeguard the health of the general public by reducing the risk of exposure to legionella bacteria.

Certain types of construction activity in the vicinity of hospitals can result in increased risk of invasive aspergillosis among immunosuppressed patients. Because of the high mortality rate associated with invasive aspergillosis in these patients, it is essential that these risks be minimised. As there is no real consensus worldwide as to how this should be done, there is a need to develop national guidelines. The Scientific Advisory Committee of NDSC established a multidisciplinary sub-committee to develop "Guidelines for the Prevention of Invasive Nosocomial Aspergillosis". Comments are invited on both consultation documents which will shortly be available on the NDSC website, http://www.ndsc.ie.

Update: Syphilis Outbreak

Over the last year, there have been multiple reports of primary and secondary syphilis notably from the UK and the US. It is known that syphilis enhances the transmission of HIV. In Ireland, prior to 2000, the number of early syphilis cases had reduced to a record low. Dublin Sexually Transmitted Infection (STI) Services have reported a marked increase in the number of cases over the last fifteen months – this increase became more evident in the past five months. Fifty-nine cases of primary or secondary syphilis have currently been documented attending St. James's Hospital (SJH) or the Gay Men's Health Project (GMHP) in this period. Another four cases have been reported through other Dublin STI Services. Fifty five cases were seen amongst men who have sex with men (MSM) – six of these were bisexual. Eleven of these MSM were known to be HIV positive with a mean duration since diagnosis of 3.5 years.

Among MSM, a large scale publicity campaign coordinated by the Department of Public Health, Eastern Regional Health Authority was launched in January 2001. Posters, information leaflets and pocket sized cards were disseminated to the Dublin Gay Community with the aid of the GMHP Outreach team. Two designated syphilis clinics commenced in SJH for those who felt they were high risk or those contacted through partner notification. A health advisor located in SJH was allocated for partner notification and education. Since then, there has been a marked rise in the numbers of MSM presenting for sexual health screens to their local STI services. Twenty eight of the cases in this group have presented in this period, (Figure 1). Fourteen of these cases have been primary syphilis with either documented negative serology in the last three months or a primary chancre. Through contact tracing, partner notification and identification, twenty cases in the MSM have currently been linked.

It is to be expected that the current outbreak will continue for the coming months. Publicity campaigns, education and designated services and personnel will need to be continued. The complications of this infection are substantial with cardiovascular, neurological and congenital sequelae. It remains to be identified whether there will be a rise in HIV cases following this outbreak. **Dr. S. Hopkins, Dr. C. Bergin, Dr. F. Mulcahy, GUIDE, St James's Hospital, Dublin**

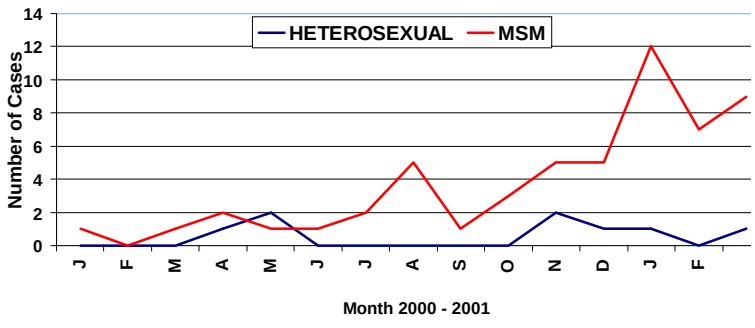

Figure 1: Number of cases of primary and secondary syphilis in outbreak by month.

Influenza Activity and Surveillance

Introduction

Influenza is one of the oldest and most common diseases known to humans. Some cases of influenza occur every Winter, but the level of impact on morbidity, mortality and health services, varies due to the current circulating strain of virus and the level of pre-existing immunity in the community. Even when the incidence of influenza is low, influenza accounts for 3,000-4,000 excess deaths per year in the United Kingdom.[1] An estimated 110,000 hospitalisations and 20,000 excess deaths occur annually in the United States, with 90% of these occurring in the elderly.[2]

This is the first year of influenza surveillance using computerised sentinel general practices. Monitoring of influenza-like illness (ILI) activity in the community over a number of seasons may help to predict the potential impact on the health services such as increases in hospital admission rates, in the future.

There are three types of influenza virus, A, B and C. Influenza C rarely causes human illness. Influenza B changes very little from year to year and usually the clinical course is milder than influenza A. Influenza A is the most clinically important as it varies considerably, and is responsible for epidemics and pandemics.[3]

Influenza Virus

It was in 1933 that a viral agent responsible for influenza was first reported. Influenza viruses belong to the orthomyxovirus group. During viral replication the amino acid structure of the two surface glycoproteins, haemagglutinin (H) and neuraminidase (N) can change and produce a new subtype of the virus. Fifteen haemagglutinin subtypes have been identified but only H1, H2, and H3 subtypes are associated with successful human infections. More recently a H5 subtype, previously identified only in birds, caused some concern in Hong Kong, but the potential for viral replication and human transmission was poor.[4] Nine distinct forms of the neuraminidase antigen have been identified, but only N1 and N2 have been associated with human infection. Minor changes in the surface glycoproteins are known as " antigenic drift". These changes occur between each influenza season (October to May in the Northern Hemisphere)and necessitate annual reformulation of influenza vaccine based on the current circulating strains. The content of the trivalent vaccine is determined by WHO and recommendations are made every February for the forthcoming season.[5] Major changes occur infrequently and are known as "antigenic shift". These result in the emergence of a novel virus that may then be capable of causing an influenza pandemic. There have been three pandemics in this century alone, 1918, 1957 and 1968. The Spanish Flu Pandemic of 1918 is acknowledged as the most devastating, resulting in an estimated 20-40 million deaths worldwide. It is almost inevitable that another pandemic will occur but the exact timing or severity cannot be predicted.

Methods

Clinical Data: Twenty computerised general practices using the software package Health One™ were recruited to report, electronically, on a weekly basis the number of patients seen per week with an influenza–like illness. There is at least one sentinel practice per health board region. Fourteen practices are single-handed. In total, the 20 practices have 32 general practitioners (GPs) with an estimated total practice population size of just less than 57,000. Selection of practices was based on enthusiasm for the project and competence at using the software package.

Influenza–like illness (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 are those who are attending for the first time with these symptoms.

The surveillance period runs from October to May, week 40 to week 20 in the calendar year with the week running Monday to Sunday. Practices file a report with the Irish College of General Practitioners, electronically, by 12 noon on Tuesday of every week. Only data received by 12 noon on the Wednesday are included in the weekly influenza surveillance report produced by the National Disease Surveillance Centre (NDSC). Practices which fail to make a return are contacted as a reminder. Data received are anonymous. Information recorded included the general practitioner identifier number and patient data (date of birth, sex and date seen). If no cases of ILI are seen, a weekly report is still required stating that no cases were recorded (zero reporting).

Virological data: Doctors were asked to send a combined nasopharyngeal and throat swab on any two patients per week where a clinical diagnosis of ILI is made. Instructions were given on storage of the transport medium and collection of nasopharyngeal swabs. All materials necessary for swabbing, including easily identifiable laboratory forms and stamped addressed envelopes complying with An Post regulations, were supplied by the National Virus Reference Laboratory (NVRL) prior to commencement of the surveillance season.

Swabs were received at the NVRL where they were tested using cell culture and polymerase chain reaction (PCR) techniques. The NVRL supplied results on a weekly basis on the number of swabs received from each of the practices. Date of swab receipt, sex, date of birth of the patient, results positive or negative by PCR and/or cell culture were all reported.

Results

The NDSC is responsible for producing the weekly influenza report. Results of clinical and virological data were reported, as well as comments on influenza activity in Europe, Canada, the United States and Worldwide.

Influenza-like illness consultations were reported on a weekly basis per 100,000 population, (Figure 1). The peak incidence occurred in week 8, 2001 and coincided with an increase in detection of influenza B virus. Influenza B commonly circulates towards the end of an influenza season. The consultation rate was 121 per 100,000 population. This level of activity decreased in week 10, 2001 to 67 consultations per 100,000. From week 40 to week 10, 2001 the peak age-specific consultation rate was in the 15-44 age group, (Figure 2).

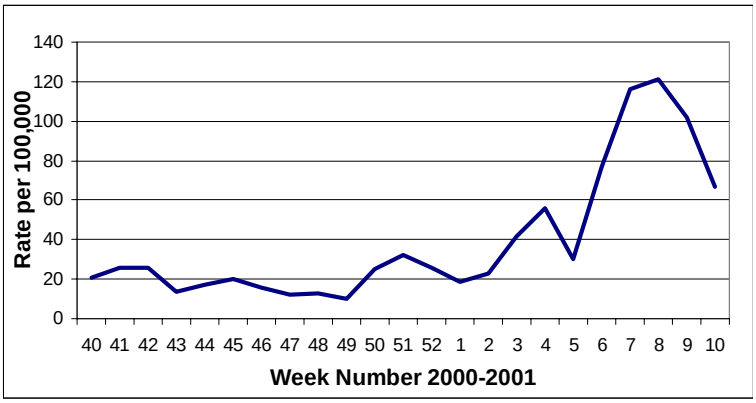

Figure 1: GP Consultation rate for ILI per 100,000 population by report week.

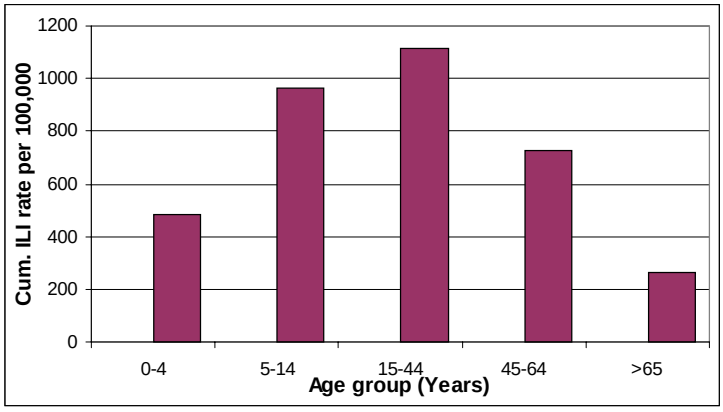

Figure 2: Age-specific ILI rate per 100,000 population for influenza season 2000-2001

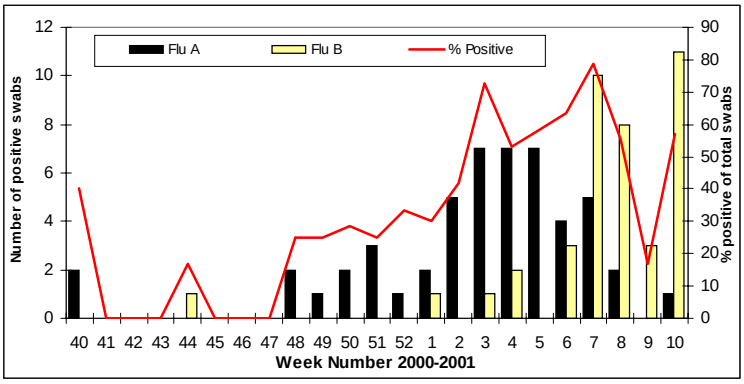

Figure 3: Number of positive swabs by flu type and % positive of total swabs by week, week 40 2000 to week 10 2001.

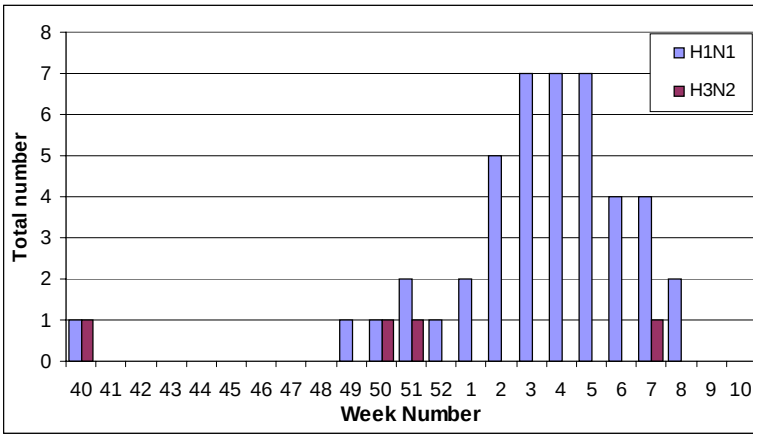

Figure 4: Influenza A by subtype, week 40 2000 to week 10 2001.

Of the 249 swabs received by the VRL, 91 were positive for influenza. The highest percent positive samples occurred during the period of peak clinical activity, (Figure 3). Using age specific rates per 100,000 population, the highest occurrence of cumulative positive swabs, was found in the 15-44 age group.

Influenza B accounted for 40 of the positive samples to date while the remainder were influenza A. The influenza A results comprise of; influenza A untypable (n=3), influenza A (H1N1) (n=44) and influenza A (H3N2) (n=4), (Figure 4).

Antigenic Characterisation: The NVRL referred four influenza A (H1N1) virus isolates to the World Health Organization Laboratory in London for antigenic characterisation. Three samples were identified as being antigenically similar to the current vaccine strain A/New Caledonia 20/99. The other isolate was closely related to an older H1N1 strain, A/Bayern/07/95. Although A/Bayern-like viruses are antigenically distinct from the A/New Caledonia/20/99 vaccine strain produces high titres of antibody that cross- react with A/Bayern/07/95-like viruses. Both of these H1 isolates were identified in other European Countries as well as in the United States this season.

Discussion

Influenza Surveillance: during the interpandemic period (i.e. the period between one pandemic and the next), influenza surveillance provides valuable data on the incidence and impact of this vaccine preventable disease. Surveillance is essential during a pandemic or threatened pandemic to allow planning of control measures such as vaccinations.[3,6] 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 that influenza virus is indeed circulating

Global Surveillance: the World Health Organization's Influenza programme was established in 1948. Worldwide, 83 countries take part in influenza surveillance. There are four main laboratory centres (Collaborating Centres for Reference and Research) that perform urgent strain identification and confirmation as necessary.[7]

Reporting to EISS: Ireland is a provisional member of the European Influenza Surveillance Scheme.[8] This is a network of 14 countries reporting electronically on clinical and virological data on a weekly basis, which is then posted on the world-wide web. Different countries use different definitions of influenza/influenza-like illness so that direct comparisons are not possible. Also, some countries use number of consultations due to ILI out of total consultations rather than use the practice population as a denominator.

Activity: overall, this season was not as intense as the 1999/2000 season. Influenza A (H1N1) was the predominant isolate in Europe and America. Influenza B predominated in Canada. As the season progressed into February, influenza B emerged in Ireland and Britain.

The Future

Influenza activity can be measured not only by GP consultation rates, 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 school absenteeism, hospital admission rates and levels of illness in nursing homes in each of the health boards. Further expansion and improvements in the present system are now being planned for the forthcoming season. Influenza surveillance is essential in order to minimise the impact of this fatal infection especially in high risk patients, the elderly and the very young.

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Dr N Mullins, Dr D O Flanagan, NDSC & Dr D Nolan, Dr P McCormack, ICGP & Dr S Coughlan, Mr S Dooley Mr P Quinn, NVRL

Immunisation Uptake Statistics for Ireland Quarter 3, 2000

The prevention of disease by immunisation is one of the cornerstones of public health practice worldwide. Its impact is observed in the decrease of infant and under-5 mortality rates, adult morbidity and mortality and the incidence of vaccine preventable disease. In Ireland, under the current primary immunisation programme, children are immunised against polio, diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, meningococcal Group C disease (since October 2000), measles, mumps and rubella. The following primary immunisation schedule is in operation in Ireland: children should be administered the DTaP, Polio, Hib and Men C vaccines at 2, 4 and 6 months (i.e. total 3 doses of each vaccine) and 1 dose of MMR at 15 months. The targets are for 95% of children to have completed the above immunisation schedule by 2 years of age. If these targets are achieved and maintained it is possible to eradicate or control these diseases and future outbreaks can be avoided.

Each health board is responsible for maintaining an immunisation register and from October 2000 have been providing NDSC with quarterly summary uptake data. NDSC collates and analyses these data to determine national uptake levels. The latest data on immunisation uptake statistics relates to children of age 12 and 24 months in the third quarter of 2000 who have completed the primary immunisation schedule.

National uptake rates of D_3, T_3, Hib_3 and $Polio_3$ in children 12 months of age in Quarter 3, 2000 was 77%, while uptake for P_3 was 76% (Table 1). These are based on figures obtained from just six health boards, as NEHB and SHB were unable to provide data on immunisation uptake at 12 months for this quarter. Uptake rates for these vaccines were higher by about 10% in the 24 month old cohort. As this was the first occasion that uptake data in the 12-month old cohorts was collected, comparison with data from previous quarters was not possible.

Immunisation uptake in children 24 months of age in Quarter 3, 2000 did not reach the 95% target. Uptake rates of 87% were reported for D_3 and T_3, 83% for P_3 and 86% for Hib_3 and $Polio_3$ (Table 1). National uptake of MMR1 was 81%, ranging from 72% in NWHB to 92% in SEHB (Table 1).

There was a general increase in uptake rates of primary vaccination among children who reached their second birthday in Q3, 2000, compared with the previous two quarters' cohorts (Figure 1). T_3 uptake is not presented on this chart, as the figures are identical to D_3 uptake levels. The most remarkable increase was with MMR1, increasing from 77% in Quarter 2, 2000 to 81% in Quarter 3, 2000. Since the collection of the quarterly immunisation uptake in 24-months old cohorts commenced in 1999, this has been the highest MMR1 uptake rate recorded (Figure 1).

In this quarter (Q3) MMR1 uptake has increased in most of the health boards when compared with the previous quarter (Q2). The NWHB was the exception, uptake rates remained unchanged between the two quarters (72%). The most notable increases in MMR1 uptake between the two quarters was in ERHA (from 74% to 81%), MWHB (from 75% to 78%), SEHB (from 89% to 92%) and WHB (from 82% to 85%). Although this upward trend for MMR uptake seen in Quarter 3, 2000 is somewhat encouraging, it is still far short of the 95% target. Unless this target rate is reached and sustained, outbreaks like the measles one seen in Ireland in 2000 will continue to occur.

We would like to thank the health boards, the Specialists in Public Health Medicine and the Systems Analysts for providing these data.

Dr. Margaret Fitzgerald & Dr. Darina O'Flanagan, NDSC

Table 1. Completed Primary Immunisations by 12 and 24 months in Ireland (July – September, 2000)

	% Uptake at 12 months Cohort born 01/07/1999-30/09/1999					% Uptake at 24 months Cohort born 01/07/1998-30/09/1998					
Health Board	**D3**	**P3**	**T3**	**Hib3**	**Polio3**	**D3**	**P3**	**T3**	**Hib3**	**Polio3**	**MMR1**
ERHA	75	73	75	75	75	85	82	85	84	85	81
MHB	70	67	70	71	71	81	77	81	80	80	74
MWHB	74	72	74	74	74	83	80	83	82	83	78
NEHB	*	*	*	*	*	95	**	95	95	95	79
NWHB	69	**	69	69	69	83	**	83	83	83	72
SEHB	90	87	90	90	90	91	87	91	90	91	92
SHB	*	*	*	*	*	86	82	86	85	85	77
WHB	86	84	86	85	85	92	87	92	92	92	85
ROI Total	77	76	77	77	77	87	83	87	86	86	81

* Unable to provide uptake data on 12-month old cohort on this occasion.
** P3 uptake could not be accurately calculated as DTaP/DT uptake was reported as a combined value by these health boards.
Note: D3, P3, T3 etc.. - indicates that three doses of relevant vaccine have been administered.

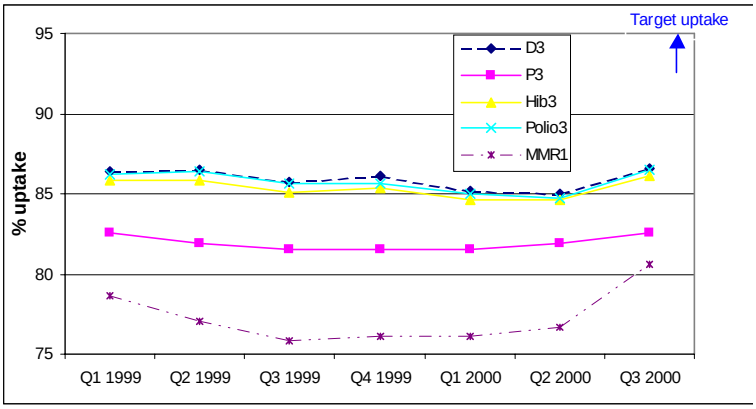

Figure 1. Quarterly national immunisation uptake rates for diphtheria, pertussis, Hib, polio and MMR in 24 month-old children.

Salmonella Monthly Report (February 2001):

Strains are allocated to months based on the date of receipt of the isolate from the referring laboratory. 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-Feeney, INSRL.

Health Board	E	M	MW	SE	S	W	Total
S.Typhimurium	3	0	1	0	0	0	4
S.Enteritidis	3	1	0	1	0	1	6
S.Braederup	1	0	0	0	0	0	1
S.Bredeney	0	0	1	0	1	0	2
S.Derby	0	0	0	0	0	1	1
S.Garba	1	0	0	0	0	0	1
S.Hadar	0	0	0	0	0	1	1
S.Hato	0	0	0	0	0	1	1
S.Newington	1	0	0	0	0	0	1
S.Newport	2	0	0	0	0	0	2
Total	11	1	2	1	1	4	20