EPI-INSIGHT

IONAD NAISIUNTA FAIRE GALAIR

Disease Surveillance Report of NDSC, Ireland

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IN THE NEWS

Recent Trends in Measles

A total of 98 cases of measles have been notified to NDSC since late November 2002 (week 48, 2002 to week 03, 2003). This represents a substantial increase in the number of notified measles cases when compared to the same period in the previous 5 years (figure 1).

More than half of the cases notified (54/98) were in the Eastern Regional Health Authority with 76% (41/54) of these in the South Western Area Health Board. Of the 98 cases, 15 (15%) were in the age group < 1 year, 40 (41%) were in the age group 1-4 years, 23 (23%) were in the age group 5-9 years and 16 (16%) were in the age group 10-14 years (figure 2).

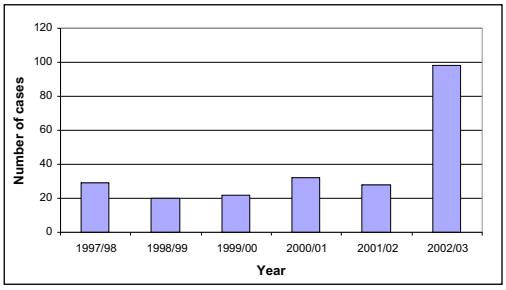

Figure 1. Measles cases in Ireland during weeks 48-52 and 01-03 (1997-2003).

Three clusters of measles have been reported to NDSC, two in the Midland Health Board (7 and 8 cases notified, respectively) and one cluster in the Western Health Board (7 cases notified). Enhanced surveillance data were obtained on all 22 cases. Fourteen cases were laboratory-confirmed, 3 cases tested negative for measles and one case is awaiting laboratory confirmation. One case required hospitalisation because of complications. Ten cases (8 aged greater than 6 years) had only received the first dose MMR vaccine, while 10 cases (8 aged greater than 15 months) had not been vaccinated. The vaccine status was unknown for 2 cases.

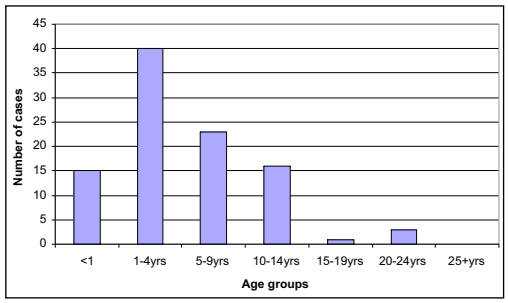

Figure 2. Measles cases notified in Ireland from week 48, 2002 and week 03, 2003, by age group.

MMR Uptake

National MMR uptake at 24 months in 2002, Quarter 2, ranged from 63%-82% with uptake rates in the ERHA, MHB and WHB at 63%, 71% and 78% respectively.[1] As these rates are well below the WHO recommended uptake levels of 95% required to prevent the spread of measles, the risk of a measles outbreak is ever present. In 2000, a measles outbreak occurred in Ireland with 1,603 cases notified.[2] The outbreak was predominantly in the ERHA region with 78% of cases occurring there and three deaths. National MMR uptake at 24 months was 79% in 2000.[3]

Discussion

Although enhanced data are only available for 22 cases, it is notable that 10 were unvaccinated and 10 had received their first dose of MMR vaccine only despite the fact that 8 were aged greater than 6 years. This highlights the importance of receiving two doses of MMR vaccine in order to ensure effective protection against measles. Ninety percent of people will develop immunity after the first dose. A second dose of vaccine has been shown to increase protection to 99%.[4] In a partially vaccinated community as currently exists in Ireland it is expected that many cases will occur in the 10% of vaccinated children who have not responded to their first dose. To ensure that vaccinated children are fully protected a 95% uptake in the community is required.

One of the reasons for the low uptake of MMR is due to parental concern of possible links between the MMR vaccine and autism. However, a large body of scientific evidence, including recent studies in Denmark and Finland, do not support any association between MMR and autism.[5, 6] Communication on the benefits and safety of immunisation, to parents, is a key factor to increasing MMR uptake rates in Ireland.

It is important for clinicians to be aware of the current increase in measles and to be alert for new cases. It is critical that **all suspected cases of measles be investigated to confirm the diagnosis (preferably by laboratory salivary testing) and that all cases be notified.** This will ensure appropriate control measures can be put in place to prevent further cases of measles. Enhanced surveillance of measles will assist in achieving elimination of measles in Ireland as recommended by the World Health Organisation.

Latest Update

A further 45 cases of measles were notified to NDSC for week 4, 2003, with 22 cases in ERHA (19 of these in SWAHB) and 21 cases in the MHB (national data for week 4 is incomplete at time of going to press).

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Acknowledgements

We would like to thank the health boards for their collaboration and assistance in compiling the data.

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Epidemiology of Hepatitis A Infection in Ireland 2001/2002

Introduction

Hepatitis A virus infection is endemic worldwide, an estimated 1.4 million cases occurring annually.[1] Transmission occurs primarily from person to person via the faecal-oral route although it can sometimes be spread through contaminated food or water. Like all enterically transmitted organisms, endemicity of infection and groups at risk of infection are related inversely to sanitation, hygiene and socio-economic conditions. Four levels of endemicity have been described. Most of Western Europe (including Ireland), North America and Australia are considered to have low, or very low, endemicity, based on the average age of infection and prevalence of antibodies to hepatitis A virus (HAV) in the population[1,2] (figure 1).

The clinical severity of hepatitis A infection increases with age. Childhood infection is usually quite mild (in children under 5 years of age 85% - 90% of infections are asymptomatic), but people infected as adults can suffer severe and prolonged illness.[1] The hospitalisation and mortality rates also increase with age.[3]

Several groups of people have been identified as being at high risk of contracting hepatitis A. These include: household and sexual contacts of infected persons, medical and paramedical personnel in hospitals, travellers to and residents of high endemicity areas, day-care centre employees and attendees (and their families), residents and staff of institutions, men who have sex with men (MSM), and injecting drug users (IDUs).[1]

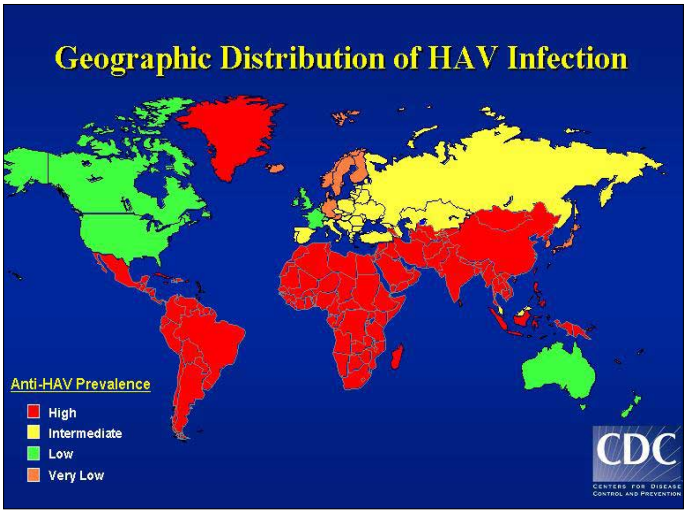

Figure 1. Map of world distribution of hepatitis A (CDC, Atlanta)

Prevalence

Studies in Ireland show the seroprevalence of antibodies to hepatitis A virus in the general population to be between 44% and 67%.[4-6] The prevalence of immunity increases with age from around 2% in children under 10 years to 90% in people 60 years of age and over.[5] This age related pattern has also been described in many other European countries.[2]

Incidence

Hepatitis A is a notifiable disease. The Department of Health and Children was responsible for the collation of the notification data until mid–2000, when the National Disease Surveillance Centre (NDSC) was assigned the responsibility. In order to have more useful information than the aggregate data which were being collected, NDSC agreed a minimum dataset (including age, sex and region) with the health boards and disaggregate data are now reported on all cases of notifiable diseases. Currently laboratories are not obliged to notify notifiable diseases.

The number of notifications of hepatitis A since 1982 has varied greatly from year to year, with the highest peak occurring in 1989 (figure 2). This cyclical pattern of incidence has been described in many other countries and is thought to be due to periodic widespread outbreaks.[2]

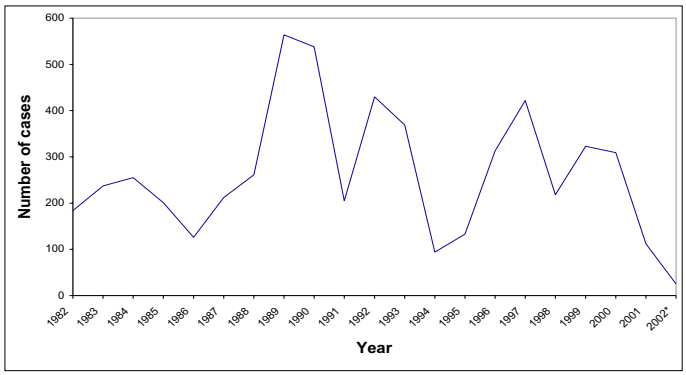

Figure 2. Number of hepatitis A notifications, Ireland 1982-2002 (DoHC and NDSC)

** Provisional data*

Notifications for 2001 and 2002

The number of hepatitis A notifications has decreased by 92% in the last three years, from 309 cases in 2000 (8.5 cases/100,000 population) to 112 cases in 2001 (3.1 cases/100,000) to 25 cases in 2002 (0.7 cases/100,000 population). Data for 2002 are provisional. Table 1 shows the number of cases and the age-standardised rates of hepatitis A reported by each health board in 2001 and 2002.

The sex distribution of cases was approximately equal in 2001 (55 males, 50 females, 7 unknown), but there were more females (17) than males (8) in 2002. The mean age of cases increased from 22 years in 2001 to 38 years in 2002. Age-specific incidence rates showed a clear peak in 5-9 year olds in 2001 (figure 3).

Table 1. Number of hepatitis A notifications and age-standardised rate per 100,000 population (direct standardisation) by health board, 2001 and 2002

Health Board	2001 Number of cases	2001 Age standardised rate (per 100,000)	2002 Number of cases	2002 Age standardised rate (per 100,000)
ERHA	66	5.1	7	0.5
MHB	3	1.5	0	0.0
MWHB	3	1.0	4	1.3
NEHB	11	3.6	1	0.3
NWHB	3	1.6	1	0.5
SEHB	19	4.8	5	1.3
SHB	1	0.2	7	1.2
WHB	6	1.7	0	0.0
Total	**112**	**-**	**25**	**-**

Rates are calculated using population data from the 1996 census

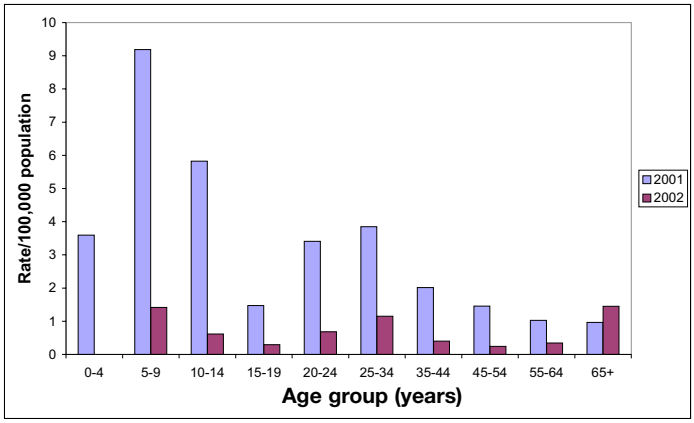

Figure 3. Age-specific rates of notified cases of hepatitis A, 2001 and 2002 (Data for 2002 are provisional)

Outbreaks

Few hepatitis A outbreaks in Ireland have been documented in the literature. In 1992, an outbreak occurred in Irish haemophiliacs (29 cases) associated with solvent-detergent treated factor VIII.[7] Another

outbreak in 1996, involved 31 cases of hepatitis A in children attending a unit for learning disabilities and their families.[8] In addition, there have been several outbreaks of hepatitis A reported in regional communicable disease reports,[9] laboratory bulletins[10,11] and one outbreak was reported to the Food Safety Authority of Ireland (FSAI) in 1999, through the national outbreak surveillance system for infectious intestinal disease set up in 1998 (FSAI, personal communication). No outbreaks of hepatitis A have been reported to NDSC since they assumed responsibility for outbreak surveillance in July 2001.

Morbidity and Mortality

It is estimated that 50% of symptomatic infections are mild (treated by the general practitioner), 30% moderate (referred by a general practitioner to a specialist), 19.9% severe (requiring hospitalisation) and 0.1% of cases result in fulminant disease.[12] The hospital inpatient enquiry (HIPE) scheme collects clinical and administrative data regarding discharges and deaths from acute public hospitals. There were 176 discharges with a principal or secondary diagnosis of viral hepatitis A in 1999, 191 in 2000 and 121 in 2001 (HIPE unit, personal communication). Although no data are available specifically for Ireland, data from the UK Transplant Support Service Authority have shown that acute hepatitis A was the primary indication for liver transplantation in 0.2% (5/2692 patients) of cases of liver transplants carried out in the UK and Ireland between 1994 and 1998.[13]

The mortality of hepatitis A infection is low but increases with age. A study in the UK which looked only at hospitalised cases showed the case fatality rate increased from 2% of cases aged 50-59 years to 12.8% of cases over 70 years of age.[3] In Ireland, hepatitis A was recorded as the primary cause of death of 9 people between 1990 and 2001 (CSO personal communication), most of whom were women (n=7) (table 2).

Table 2. Number of hepatitis A notifications and deaths, 1990-2001

Year	Number of notifications	Number of deaths
1990	538	0
1991	205	1
1992	430	2
1993	369	2
1994	94	0
1995	133	0
1996	313	0
1997	422	1
1998	218	0
1999	323	0
2000	309	2
2001	112	1*
Total	**3466**	**9**

**Provisional data by year of registration*

Prevention

Until the introduction of hepatitis A vaccine in 1992, protection against hepatitis A relied on high standards of hygiene and selective passive immunisation of those at high risk of infection using human normal immunoglobulin (HNIG).[14] Nowadays, active immunisation is recommended for certain high-risk groups.[14] Selective immunisation of high risk groups is a cost effective strategy as long as the levels of immunity in the groups targeted is <45%.[12]

In the US, routine vaccination is recommended for children in areas (states, counties or communities) where the incidence of hepatitis A is at least twice the national average (i.e. ≥ 20/100,000), while children in areas where the rates are between the national average and twice the national average (i.e.10-20 cases/100,000) should also be considered for vaccination.[15]

Hepatitis A vaccine should also be used as close to the time of exposure as possible for preventing secondary cases and outbreaks. The vaccine is effective in preventing disease in contacts only if administered within seven days from onset of illness in the primary case, otherwise contacts should be offered HNIG in addition or in preference to vaccine. In general, the use of HNIG more than two weeks after the last exposure is not indicated.[14]

Discussion

A review of notifiable diseases and the process of notification carried out by NDSC has recommended that, in future, laboratories should also be specified as notifiers. If this recommendation is adopted by the Department of Health and Children then all laboratories would be obliged to report cases of notifiable diseases they identify. In the case of a disease such as hepatitis A, whose definitive diagnosis requires laboratory confirmation, obligatory laboratory notification would undoubtedly provide the most accurate estimate possible of hepatitis A incidence in Ireland.

The main burden of disease in several European countries is now seen as being in IDUs, MSM, and travel related cases. In the UK, the proportion of cases acquired abroad has increased dramatically since the early 1990s, mainly due to a decrease in the number of domestic cases.[3] Information on risk factors, or level of vaccine uptake in high risk groups, is not routinely gathered in Ireland. In the future, NDSC would like to develop an enhanced surveillance system for hepatitis A to allow more detailed examination of the epidemiology of hepatitis A in Ireland, in particular risk factor information and data on the vaccination status of cases.

A proposal is currently being prepared for the European Commission to develop a European surveillance network on hepatitis A. One of the major areas to be included in this network will be information on the molecular epidemiology of hepatitis A. Molecular epidemiology can be used for a variety of purposes, such as estimating the prevalence of subtypes of hepatitis A at global or country level, helping identify the country of origin of a case, monitoring shifts in viral strains over time, and is particularly useful for linking apparently sporadic cases occurring in different countries to a common source. Currently no molecular typing of hepatitis A is carried out in Ireland. The participation of Ireland in this network would necessitate the development of this service in the future.

As the incidence of hepatitis A declines, the average age at infection increases, and the level of susceptibility in the community increases. The fact that the majority of the population in Ireland under 30 years of age is now likely to be susceptible to infection with hepatitis A,[5] coupled with the potential for faecal contamination of drinking water supplies and changing food habits (e.g. the use of pre-prepared salad vegetables) means that we are potentially vulnerable to common source outbreaks.

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FIRST TWO CASES OF INFLUENZA VIRUS DETECTED

The National Virus Reference Laboratory has identified the first two cases of influenza virus for the 2002/2003-influenza season. Influenza activity has been at low levels to date this season, with recorded activity broadly in line with this time last year. A network of 33 sentinel general practices, which report weekly on the number of patients with influenza-like illness, identified the cases - one influenza A (H3N2) and one influenza B. The network was established by the National Disease Surveillance Centre, in partnership with the Irish College of General Practitioners and the National Virus Reference Laboratory, and produces a weekly influenza surveillance report. The first positive cases of influenza virus during the 2001/2002 influenza season were also detected in January. A total of 65 positive cases of influenza virus were detected last season, peaking in February 2002. Influenza B is the dominant type of influenza virus currently circulating throughout Europe.

The weekly influenza surveillance reports, along with further information on influenza and the flu vaccine are available on the NDSC website at www.ndsc.ie/Publications/InfluenzaWeeklySurveillanceReport/

EPI-INSIGHT POSTAL SURVEY 2002

Epi-Insight, the monthly newsletter of the National Disease Surveillance Centre, is produced in two formats – electronic and printed. The Editorial Committee decided to look at the possibility of producing the newsletter in electronic format only, in order to reduce costs and give more flexibility in terms of size. In 2002, a survey of recipients on the postal mailing list was carried out to see how many could receive Epi-Insight electronically and how many would be willing to do so.

Results
There were 359 questionnaires sent out and 256 were returned giving a response rate of 71%.

Approximately 93% of respondents had access to e-mail or the Internet and 88% of these would be willing to receive Epi-Insight either by e-mail or via the Internet (table 1). General Practitioners were the least likely to want to receive Epi-Insight electronically instead of by post.

Table 1. The number of respondents who have access to e-mail/Internet and who would be willing to receive Epi-Insight electronically rather than by post, by place of work

Willing to receive either	Hospital	Health board	Laboratory	General practice	Other	Total
Yes	90 (88.2%)	61 (95.3%)	22 (81.5%)	7 (63.6%)	29 (85.3%)	**209 (88.2%)**
No	12 (11.8%)	3 (4.7%)	5 (18.5%)	4 (36.4%)	4 (11.8%)	**28 (11.8%)**
Unknown	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (2.9%)	**0 (0.0%)**
Total	102 (100%)	64 (100%)	27 (100%)	11 (100%)	34 (100%)	**237 (100%)**

TRAINING FELLOWSHIPS FOR INTERVENTION EPIDEMIOLOGY IN EUROPE

The European Programme for Intervention Epidemiology Training started in 1995. The programme is funded by the European Commission and by various EU member states as well as WHO and Norway. Subject to agreement for another round of funding, the ninth cohort of fellows is planned, starting in September 2003. The programme invites applications for eight fellowships for this 24-month training programme in communicable disease field epidemiology.

FELLOWSHIPS

Applicants for the 2003 cohort must be nationals of an EU member country or Norway and should have experience in public health, a keen interest in fieldwork and be pursuing a career involving public health infectious disease epidemiology. They should have a good knowledge of English and of at least one other EU language, and be prepared to live abroad for a period of 24 months.

AIM OF THE TRAINING

The aim of the training is to enable the fellow to assume service responsibilities in communicable disease epidemiology. The in-service training will focus on outbreak investigations, disease surveillance, applied research, and communications with decision makers, the media, the public and the scientific community.

Fellows will attend a three-week intensive introductory course and then be located in a host institute in one of the 15 participating European countries and Norway. Further training modules are organised during the two-year programme, normally in one of the participating national institutes with responsibility for communicable disease surveillance.

Detailed information can be obtained from the EPIET programme office at the address below. Letters of application accompanied by curriculum vitae should be submitted by 28 February 2003 to:

The Swedish Institute for Infectious Disease Control
EPIET Programme Office
SE-171 82 Solna
Fax: 00 46 8 30 06 26
Email: carole.desmoulins@smi.ki.se

NEW PUBLICATIONS

The National Disease Surveillance Centre has recently published its **Annual Report for 2001** and three new reports produced by various subgroups of the Scientific Advisory Committee. They include:

- **National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis During Construction/Renovation Activities.** Nosocomial aspergillosis is a well-recognised complication of construction and renovation activities in or near hospital wards accommodating immunocompromised patients. It can cause severe illness and mortality in these patients. The purpose of the guidelines is to advise on how construction/renovation activities in hospitals providing for immunocompromised patients can be undertaken in a safe and appropriate manner to reduce the risk of infection.

- **The Management of Legionnaires' Disease in Ireland**. The recommendations set out to improve the notification, diagnosis and treatment of Legionnaires' disease and reduce the risk of exposure of the general public to *Legionella* bacteria.

- **The Management of Viral Haemorrhagic Fevers in Ireland**: The risk of endemic spread of VHFs in Ireland is negligible. However, with the speed and volume of international travel and commerce the risk that persons incubating VHFs may present in Ireland after visiting endemic areas has increased. The guidelines have been issued to ensure that the Irish healthcare system is ready to deal with a suspected case of VHF.

All the reports are now available on the NDSC website at www.ndsc.ie

Salmonella Monthly Report (December 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-Feeney, INSRL.

Health Board	E	M	MW	NE	NW	SE	S	W	Total
S.Corvallis	1	0	0	0	0	0	0	0	1
S.Enteritidis	0	0	0	0	0	0	1	0	1
S.Hadar	1	0	0	0	0	0	0	0	1
S.Rissen	0	0	0	1	0	0	0	0	1
S.Senftenberg	1	0	0	0	0	0	0	0	1
S.Typhi *	1	0	0	0	0	0	0	0	1
S.Virchow	1	0	0	0	0	0	0	0	1
Total	**5**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**7**
* Travel-associated (Nigeria)									