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Information Security Award

The National Disease Surveillance Centre (NDSC) has become the first public body in the Republic of Ireland to earn an internationally recognised certificate for the way it deals with information security.

The International Standard (IS) 17799 is a broad-based standard that requires organisations to address all aspects of security including physical access to its facilities, document handling and storage, secure communication in all formats and security of IT systems.

Welcoming the award, NDSC director, Dr Darina O'Flanagan, stressed the importance of secure storage, processing and transmission of data. "One of the core activities of NDSC involves exchanging information with partner organisations, so a decision was taken to go for the IS 17799 standard to make sure that we have appropriate policies, procedures and equipment in place to protect information held at NDSC," she said.

NDSC receives a significant volume of sensitive data as the centre collates Ireland's infectious disease statistics. The new standard will guarantee data providers like health boards, laboratories and hospitals that the information they provide will be dealt with in a secure and confidential manner.

NDSC IT Specialist, Myles Houlden said that NDSC was striving to be 'ahead of the game' in anticipating best practice in the area of securing sensitive information. "Information security is a serious issue for all organistations. Information can come under threat from many sources and with the increased use of new technology to store, transmit, and retrieve data, there is a corresponding increase in the risks to sensitive information," he said.

To comply with the standard, NDSC has had to show that it has appropriate policies, procedures and equipment in place to protect its information resources, and that its offices are secure and its internal communications systems robust.

NDSC is only the eighth organisation in the Republic of Ireland to be awarded the IS 17799 certificate.

Five Nations Health Protection Conference

The Five Nations Health Protection Conference, formally known as the Annual Conference on Epidemiology and Control of Communicable Diseases and Environmental Hazards, will be held on Monday 1st November to Wednesday 3rd November 2004 in Manchester Town Hall, Manchester.

The conference will address a wide range of health protection issues that have arisen in the past year and provide fresh perspectives on established areas of disease prevention and communicable disease control, non-communicable disease environmental threats and health emergencies. The themes for the sessions at the conference are:

- **International/European**
- **Health care associated illness**
- **Respiratory**
- **Training**
- **Bloodborne viruses**
- **Occupational health**
- **Case management – health protection in action**
- **Non-communicable disease and environmental health**
- **Zoonoses**
- **Immunisation.**

Those actively working in health protection will present short papers on the themed sessions. Abstracts are invited for papers and posters on the conference themes. They should be submitted by June 7th 2004 and should not exceed 300 words.

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Hospitalisations from Cryptosporidiosis in Ireland, 1999-2002

Introduction

Cryptosporidium is a protozoal parasite that causes a diarrhoeal illness in humans known as cryptosporidiosis. The organism became renowned in the 1980s and 1990s as a cause of severe diarrhoeal illness in patients with AIDS. It has increasingly become recognised as a major cause of diarrhoeal illness in healthy individuals in developed countries. Both humans and animals can serve as reservoirs for infection and multiple routes of transmission are possible. The consumption of contaminated water is regarded as being of primary importance in transmission, but infection can also occur as a result of recreational bathing, consumption of contaminated foods, and animal- and person-to-person transmission.

C. parvum is the main species associated with human infection, although a minority of infections have been linked with other species such as *C. felis* and *C. meleagridis*. *C. parvum* is divided into 2 genotypes: type I occurs exclusively in humans while type II occurs in livestock and humans. McLaughlin *et al*, 2003 reported that the epidemiology of these 2 genotypes differed geographically and temporally in the UK.[1] Genotype II was associated with a peak in the number of cases during spring while genotype I was significantly more common in patients infected during late summer/autumn and in those with a history of foreign travel.

In immunocompetent patients, *Cryptosporidium* causes watery non-bloody diarrhoea, sometimes accompanied by abdominal pain, nausea, anorexia, fever and /or weight loss. The severity of illness varies and symptoms usually subside after 1-2 weeks. In immunocompromised individuals, especially those with AIDS, diarrhoea can be chronic and persistent, causing clinically significant fluid and electrolyte depletion. Weight loss, wasting and abdominal pain may be severe.

Recently, the South-Eastern and Western Health Boards published information on incidence of cryptosporidiosis in these regions.[2 3] In 2001, there were 70 (18/100,000 population) laboratory-confirmed infections and 66 (19/100,000) notifications of cryptosporidiosis in the SEHB and WHB regions respectively. Moreover, both health boards reported that preliminary data for 2002 demonstrate an increase on 2001 in the number of cases of cryptosporidiosis. This confirms the importance of *Cryptosporidium* as a cause of infectious diarrhoea in Ireland. A small number of outbreaks in Ireland have also served to heighten concerns regarding cryptosporidiosis.[4 5]

Before January 1st 2004, cryptosporidiosis was notifiable in Ireland only in young children under the category '*gastroenteritis in children under 2*'. Because of this it has not yet been possible to describe the national incidence in the population as a whole based on clinical notifications. The source of data used in this report is Hospital In-Patient Enquiry (or HIPE) data information collected by the Economic and Social Research Institute (ESRI) on behalf of the Department of Health and Children on hospital discharges in Ireland. Using these data, an attempt is made here to develop a national perspective on the basic epidemiology of cryptosporidiosis in Ireland.

Methods

HIPE records for patients discharged in the period January 1st 1999 to December 31st 2002, whose principal diagnosis was cryptosporidiosis, were obtained from the HIPE unit of the ESRI for the purposes of this report (national coverage was 95% based on Department of Health and Children estimates, A Mulligan, personal communication). The dataset was received in aggregate form.

Results

Annual number of hospitalisations

There were an average of 60 cases hospitalised per annum between 1999 and 2002, 49% of whom were male. This represents an average annual hospitalisation rate of 1.5 per 100,000 population.

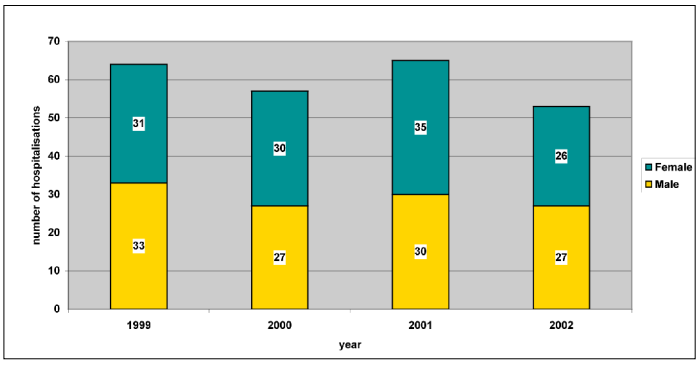

Figure 1. Number of cryptosporidiosis hospitalisations 1999-2002

Age distribution of hospitalised cases

Children were at highest risk of being hospitalised with cryptosporidiosis and all hospitalised patients reported were under 40 years of age. Seventy-two per cent of cases in this dataset were under 5 years of age; thirty-eight per cent were under 2 years of age.

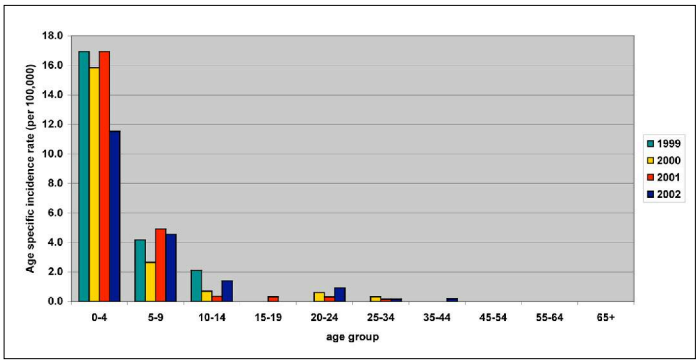

Figure 2. Age-specific incidence rates for cryptosporidiosis hospitalisations in Ireland, 1999-2002

Seasonality

There was a strong seasonal effect with a peak in late spring/early summer. During this 4-year period, 63% of all hospitalised cases were reported during the months March to June. The peak in the number of cases in 1999 and 2002 appeared to be slightly earlier than in 2000 and 2001, being from March to May. Elevated numbers of hospitalisations are also evident in January and September of 2001.

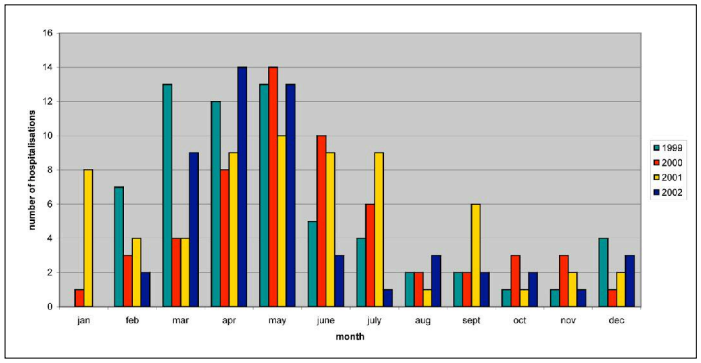

Figure 3. Seasonal distribution of hospitalised cryptosporidiosis cases 1999-2002 by month of admission

Geographical distribution of cryptosporidiosis

Figure 4 shows the average crude hospitalisation rate and age-standardised hospitalisation rate by health board between 1999 and 2002. The SHB shows the highest rate followed by the SEHB, the NWHB, the MHB and the WHB. The lowest hospitalisation rates were recorded in the ERHA, the MWHB and the NEHB.

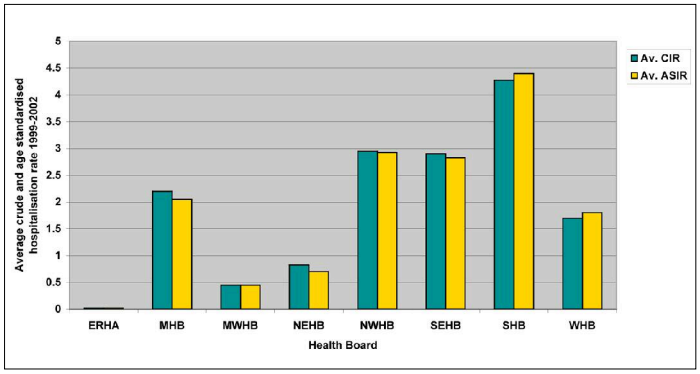

Figure 4. Average crude and age standardised hospitalisation rates in each health board of residence, 1999-2002

Usage of hospital facilities

In total, the 239 patients documented here spent 938 days in hospital, an average of 3.9 days per hospitalised cryptosporidiosis case.

Incidence rate in Ireland

Two methods can be used to estimate the burden of illness due to *Cryptosporidium* in Ireland. There were 149 clinical notifications for cryptosporidiosis among children under 2 reported to NDSC in 2002 under the category '*gastroenteritis in children under 2*'.[6] In this study it was noted that 38% of hospitalised cases were under 2 years of age. Therefore we can estimate that approximately 392 (149x100/38) cases of cryptosporidiosis occur annually in Ireland, suggesting an incidence rate of 10.0/100,000 population. A second way to estimate the national incidence rate is to use the data published for the SEHB and WHB.[2 3] Given that 31% of all hospitalised cases (1999-2002) were reported from these regions and that 136 cases were reported between them in 2001, another estimate of incidence is 439 (136x100/31) cases or 11.2/100,000 for the country as a whole.

Discussion

Cryptosporidiosis became a notifiable disease in Ireland in January 2004. Prior to this, in the absence of clinical notification or a national laboratory reporting system, our knowledge of the epidemiology of cryptosporidiosis in Ireland was limited. Moreover, not all laboratories test for *Cryptosporidium* and some of those that do have criteria such as age thresholds for deciding on whether or not to screen for *Cryptosporidium*.[7] Ireland has no reference laboratory for *Cryptosporidium* and isolates are rarely genotyped, except in the event of an outbreak. Therefore a thorough understanding of the epidemiology in Ireland is not currently possible. The amendment to the Infectious Disease Regulations 1981(SI No. 707 of 2003) making cryptosporidiosis notifiable will enhance our understanding of the epidemiology of cryptosporidiosis.

In the interim, we have used information on cryptosporidiosis hospitalisations compiled by the ESRI in an attempt to develop a national perspective on the basic epidemiology of cryptosporidiosis in Ireland. The dataset is not ideal in that it obviously includes only hospitalised cases, which may result in the over-representation of young children in the dataset. Secondly, cryptosporidiosis has only recently received an individual diagnostic code under the ICD-9-CM system meaning that it has only been possible to analyse data on hospital discharges due to cryptosporidiosis since 1999.

Despite the limitations of the available data, there are some notable trends. It is an illness that affects young children most severely. Seventy-two per cent of all HIPE entries between 1999 and 2002, with cryptosporidiosis as their primary diagnosis, were under 5 years of age. It is possible, however, that this reflects both a higher incidence among this age group and a higher probability of a young child being hospitalised in the event of suffering gastroenteric symptoms. In Northern Ireland, the proportion of laboratory-confirmed cases under 5 years of age were 55%, 54%, 40% and 59% in 1999, 2000, 2001 and 2002 respectively.[8] It should be noted however, apart from the fact that this includes not just hospitalised cases that three large outbreaks occurred in Northern Ireland during 2000 and 2001, which may have influenced the age distribution.

The large variation in incidence between health boards is notable. In two studies conducted concerning cryptosporidiosis in Irish children, the higher incidence among children from rural backgrounds was noted.[9 10] The particularly low rate of cryptosporidiosis hospitalisations among the ERHA population is consistent with this observation. In the UK, London has historically also had a low rate of cryptosporidiosis reported.[11] The striking variation in regional incidence in Ireland may also reflect different diagnostic policies and different hospitalisation policies between regions.

The seasonal effect reported here has been reported elsewhere for Ireland.[3 10] In the UK however, two peaks in incidence are evident: a late spring/early summer peak and a second late summer/early autumn peak.[1 12] The cases acquired during late spring/early summer were believed to be zoonotic in origin whereas human sources of infection may be more common during the later peak in incidence.[12] In late summer/early autumn, there were also a higher number of cases in England and Wales with a history of foreign travel.[1] A decrease in incidence in the spring of 2001 was suggested to be due to a decrease in human exposure to the animal reservoirs of infection during the Foot and Mouth Disease outbreak.[11] Regan suggested that new water catchment protection measures introduced in the North West of England may also have contributed to the reduced incidence in that region during the spring of 2001.[12] In the absence of genotyping data or further information on cases, it is not possible to hypothesise about the transmission routes in Ireland.

During this four-year period the number of hospitalised cases has remained relatively stable. It was estimated here that between 10.0 and 11.2 cases per 100,000 occur annually in Ireland. Incidence rates for cryptosporidiosis in 2002 worldwide range from 1.4/100,000 in the US[13] to 16.6/100,000 in Australia (Paul Roche, DoH, personal communication). Incidence rates within the UK in 2002 have ranged from 5.7 in England and Wales (Gordon Nicholls HPA, personal communication) and 7.5 in Northern Ireland[8] to 12.6 in Scotland (Susan Brownlie SCIEH, personal communication), making Irish rates broadly similar to those in the UK. In 2003, there was an increase in the incidence of cryptosporidiosis in many parts of the UK.[14] It remains to be seen whether a similar rise in incidence occurred in Ireland in 2003.

With cryptosporidiosis now being notifiable in Ireland, it will in time be possible to provide a more accurate and timely picture of the epidemiology of cryptosporidiosis here.

P Garvey and P McKeown, NDSC

Acknowledgements

We wish to thank Ms Aisling Mulligan and Ms Anne Clifton of the HIPE unit of the ESRI for providing the HIPE data on which this report is based.

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Sexually Transmitted Infections in Ireland, 2002

Introduction

Since the mid-1990s, the incidence of reported sexually transmitted infections (STIs) has been rising throughout Europe. This increase has also been observed in Ireland. Between 1989 and 2002 notifications of STIs in Ireland increased by 370%. The increase is consistent with an increase in unsafe sexual practices.

Notifications

During 2002, 10,471 STIs were notified compared to 9,703 in 2001 (table 1), a 7.9% increase. The numbers of all notifiable STIs* (table 1) increased in 2002, compared to 2001, with the exception of ano-genital warts, gonorrhoea and *P. pubis* which decreased and chancroid which remained the same. There were no cases of granuloma inguinale reported in 2002. The number of STIs notified in 2002 is the highest number reported for any year on record. The three most commonly notified STIs in 2002 were ano-genital warts, non-specific urethritis and *C. trachomatis*. The highest increases recorded during 2002, compared to 2001, were for infectious hepatitis B (46.2%), molluscum contagiosum (35.1%) and non-specific urethritis (23.9%). Figure 1 illustrates the proportions of STIs notified by each health board for 2002. The numbers of notifications increased in all health boards in 2002, compared to 2001, with the exception of the Eastern Regional Health Authority (ERHA) where STI notifications decreased by 9.9%. In 2002, the majority of notified STIs occurred in the 20-29 year age group, with the exception of syphilis and lymphogranuloma venereum where the majority of cases were aged between 30 and 39 years.

Discussion

The increase in STIs in Ireland during 2002 is likely to be associated with an increase in unsafe sexual behaviour. Anecdotal evidence also suggests that improved acceptability of STI clinic services and greater public and professional awareness of certain STIs may have contributed to the increases in identification and reporting of STIs. The rise in reported genital chlamydial infections is also likely to reflect the availability of sensitive and specific tests using nucleic acid amplification and increased testing for this infection. Recently concern has been raised over a resurgence of STIs, particularly among men who have sex with men (MSM). Between 2000 and 2002, there was a dramatic increase in syphilis amongst MSM in Dublin. This was against a low incidence of syphilis throughout the 1990s. This outbreak peaked in Q3, 2001 and there now remains a high level of endemicity. Syphilis, like other genital ulcer diseases, increases the risk of transmitting and acquiring HIV.

STI surveillance is mainly clinic-based, although some notifications also come from primary care. The data represented in figure 1 are the proportion of STIs by notifying health board and do not necessarily reflect cases among residents of a particular health board area. People may travel from their area of residence to STI clinics outside their area, for example, there are no STI clinics in the Midland or North Eastern Health Boards and this is reflected in the very small numbers of STIs reported from these health boards. The decrease in reported cases from the ERHA may not represent an actual decline in incidence or diagnosis of STIs in the ERHA but may reflect incomplete reporting as people may be opting to attend local services e.g. General Practitioners, and cases may not be reported. Modern STI control and policy-making require behaviourally and geographically targeted interventions. STI surveillance systems must collect data from all sites where STIs are identified including general practice and must include a range of behavioural, geographical, clinical and microbiological information. A subcommittee of the Scientific Advisory Committee of NDSC is currently undertaking a review of STI surveillance in Ireland and will make recommendations in this regard.

NDSC would like to thank all those who provided data for this report, particularly the STI Clinics, GPs and the Departments of Public Health

L Domegan, M Cronin, S Jackson, NDSC

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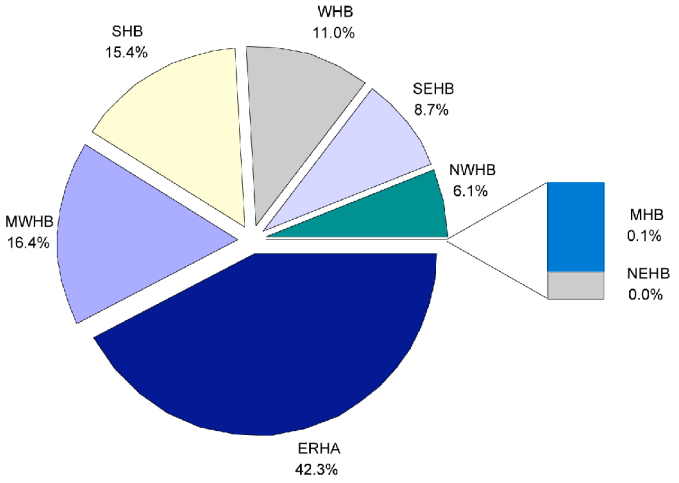

Figure 1. STI notifications, 2002, by notifying health board/authority

Table 1. Notified sexually transmitted infections from 1989 to 2002*

Sexually Transmitted Infection	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Ano-Genital Warts	505	917	1089	1066	1432	1532	1972	2286	2514	2886	3049	3735	3993	3932
Candidiasis	688	1056	1257	1157	1400	1360	1271	1321	1521	1277	1105	1095	1150	1351
Chancroid	2	0	0	2	0	2	3	1	1	0	1	16	1	1
Chlamydia Trachomatis	174	215	164	192	315	133	245	364	462	646	869	1343	1649	1922
Genital Herpes Simplex	78	123	109	125	124	173	198	181	211	243	275	269	331	358
Gonorrhoea	27	90	73	51	24	98	91	83	98	125	175	290	349	214
Granuloma Inguinale	0	0	0	0	6	0	0	1	1	0	1	0	0	0
Infectious Hepatitis B	0	0	0	0	0	0	4	2	0	0	2	15	39	57
Lymphogranuloma Venereum	0	0	0	0	0	0	0	0	5	1	2	0	0	1
Molluscum Contagiosum	31	39	43	44	34	56	59	34	74	84	83	118	111	150
Non-Specific Urethritis	600	738	549	585	756	610	781	823	1034	1083	1265	1726	1634	2025
Pediculosis Pubis	60	70	72	70	77	69	86	79	81	105	113	138	103	84
Syphilis	12	19	20	20	8	11	11	17	16	15	6	46	279	303
Trichomoniasis	51	86	163	41	57	29	60	71	94	38	47	78	64	73
Total	2228	3353	3539	3353	4233	4073	4781	5263	6112	6503	6993	8869	9703	10471

* This table lists the 14 STIs notifiable in 2002; this list was updated in January 2004

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