E P I - I N S I G H T

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IN THE NEWS!

Meningococcal Disease and the "Meningitis C" Immunisation Programme

In October 2000, the Department of Health and Children introduced a National Immunisation Programme against Meningococcal Group C infection using Meningococcal Group C Conjugate (MCC) vaccine. Phase 1 of the programme targeted those at highest risk of contracting the disease; children under 5 years of age and young persons aged 15-18 years. Phase 2 of the campaign was announced on 20th March 2001 and targeted primary school children as a priority. The National Disease Surveillance Centre and the National Meningococcal Reference Laboratory (MRL) are actively involved in monitoring the impact of MCC vaccine on the epidemiology of meningococcal disease in Ireland. In the six month period (October 2000 – March 2001) since the MCC vaccine was introduced, 39 Group C cases have been notified (36 confirmed by Meningococcal Reference Laboratory), compared to 100 cases over the same period the previous year (October 1999 – March 2000). This indicates a reduction of 61% (Figure 1). A reduction in the number of Group B cases notified has also been observed, decreasing from 150 cases (October 1999 – March 2000) to 137 cases (October 2000 – March 2001), a drop of 9%. Of the 39 cases of Group C disease that occurred over the past six months all cases, with the exception of one arose in unvaccinated individuals (n=38). Three deaths due to Group C meningococcal disease have occurred over the last six months (all in unvaccinated individuals) compared to four deaths in the same period of the previous year.

To date, the MCC vaccination programme appears to be having a positive impact on the reduction of Group C meningococcal disease. However, it is imperative that parents and guardians ensure that their children are vaccinated against this disease. Only with a continued and sustained effort can the burden of Group C disease be effectively reduced/eliminated in Ireland.

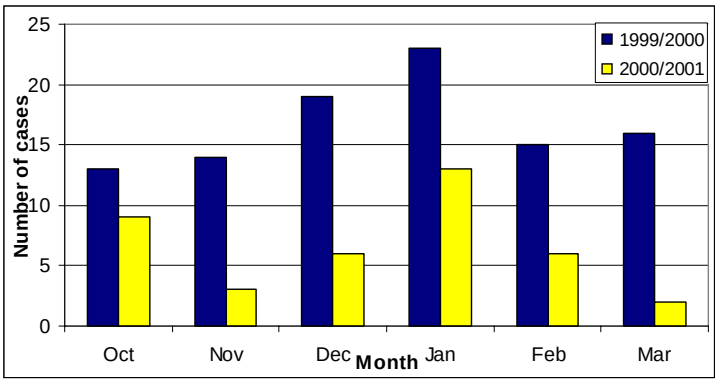

Figure 1: Cases of Group C meningococcal disease notified in Ireland by month, October to March 1999/2000 and 2000/2001.

Dr M Fitzgerald & Dr D O'Flanagan, NDSC; Dr M Cafferkey & Ms K Murphy, MRL.

Rare Vaccine, Immunoglobulin and Antitoxin

Cherry Orchard Hospital Admissions Unit maintains a supply of vaccines for administration to staff and patients of the hospital including **Influenza, Pneumococcal, Hepatitis A and B and Tetanus Vaccines.** In addition to these vaccines, supplies of **Rabies Vaccine** and a small supply of **Human Rabies Immunoglobulin** are held there for use nationally. These are used exclusively in the post exposure treatment of persons who have been bitten, licked or scratched by potentially rabid animals in countries where rabies is endemic. Twelve such persons were treated during the year 2000. The majority had commenced post exposure rabies treatment prior to returning home to Ireland and completed their treatment at Cherry Orchard Hospital. This treatment is available free of charge and can be accessed by contacting the Medical Superintendent at (01) 626 4702. Since September 1997 a supply of both **botulism antitoxin** and **diphtheria antitoxin** have been available through Cherry Orchard Hospital for national use. A small supply is kept in the vaccine fridge in the Admission Unit and larger stocks are immediately available through the nearby Central Supplies Department. There was no request for either botulism or diphtheria antitoxin in the year 2000. Both of these antitoxins can be accessed by contacting the Medical Superintendent or Night Superintendent at (01) 626 4702.

Dr Seamus O'Dea, Acting Superintendent, Cherry Orchard Hospital

TB in Ireland 1999

Introduction

In Ireland, any medical practitioner diagnosing a patient as having tuberculosis, whether laboratory confirmed or clinically presumed is statutorily required to notify details of the case to the Director of Public Health in each health board. Public health doctors in each health board then complete and collate individual notification forms using the clinical, microbiological and histological data available to them, which in turn are sent to the National Disease Surveillance Centre (NDSC) for analysis. This is the second year national epidemiological data have been presented by NDSC.

Materials & Methods

The case definitions used were those recommended by the National Tuberculosis (TB) Working Group[1]. **A notified case** of TB refers to clinically active disease due to infection with organisms of the *Mycobacterium tuberculosis* (*M.tuberculosis*) complex. Active disease was presumed if the patient was commenced on a full curative course of anti-tuberculosis chemotherapy. Persons placed on chemoprophylaxis for preventive treatment or infected by mycobacterium other than *M. tuberculosis* complex were not included as cases. **Pulmonary TB** was defined as a laboratory confirmed case-either a positive smear, histology or culture of a respiratory sample-with or without radiological abnormalities, consistent with active pulmonary TB or a case where the physician took the decision that the patient's clinical symptoms and/or radiological signs were compatible with pulmonary TB. **Extra-pulmonary TB** was defined as a patient with a smear, culture or histology specimen, from an extra-pulmonary site, that was positive for *M. tuberculosis* complex or a case with clinical signs of active extra-pulmonary disease in conjunction with a decision taken by the attending physician to treat the patient with a full curative course of anti-tuberculosis chemotherapy. **Primary TB** was defined as a patient with a negative smear/culture/histology specimen but who had radiological signs of hilar lymphadenopathy on chest x-ray and a positive tuberculin skin test or there was clinical evidence that led the physician to treat the patient with a curative course of antituberculosis chemotherapy. Population data were taken from the 1991 and/or 1996 census of population. 95% confidence intervals were used to compare rates between groups of interest. Direct methods of standardisation were used to allow comparison of rates between geographical areas using the Irish population as the standard population.

Results

Four hundred and sixty nine cases (469) of TB, 284 males (61%) and 185 females (39%) were notified in 1999. This is a notification rate of **12.9/100,000**, a 10.2% increase on 1998 (11.7/100,000) and the second successive year that has seen an overall increase in case notifications since 1991 (Table 1).

Table 1: Notified cases of TB in Ireland in 1999.

Year	Number	Crude rate per 100,000	3 year moving average
1991	640	18.2	
1992	604	17.1	621
1993	598	16.9	581
1994	524	14.5	526
1995	458	12.6	468
1996	434	12	438
1997	416	11.5	426
1998	424	11.7	430
1999	469	12.9	

A 3-year moving average was calculated by applying the formula [(a+2b+c)/4] to each three successive points a,b and c (each letter represents a year) in the series and using the result as a smoothed value of b

Age & Sex: Two regions, the Western Health Board (17.9 per 100,000) and the Mid-Western Health Board (17.1 per 100,000) had a significantly higher rate than the North Western Health Board (8.4 per 100,000), North Eastern Health Board (8.3 per 100,000), the South Eastern Health Board (7.8 per 100,000) and the Midland Health Board (7.1 per 100,000).

Table 2: Total Cases and Age Standardised Incdence Rate (ASIR) for TB in Ireland in 1999 by Health Board.

Health Board	TB cases	Age standardised incidence rate	95% CI
ERHA	180	14.1	12-16.2
MHB	15	7.1	3.5-10.7
MWHB	54	17.1	12.5-21.7
NEHB	25	8.3	5.1-11.6
NWHB	19	8.4	4.6-12.2
SEHB	31	7.8	5.0-10.5
SHB	75	13.4	10.4-16.5
WHB	70	17.9	13.6-22.3
Ireland	469	12.9	11.8-14.1

The North Eastern Health Board (8.3 per 100,000), the South Eastern Health Board (7.8 per 100,000) and the Midland Health Board (7.1 per 100,000) had a significantly lower rate than the national rate (12.9 per 100,000) (Table 2).

Two hundred and forty cases (51.2%) were aged over 45 years with just over a quarter of all cases occurring in the over 65 age group (25.4%).

The age and sex specific rates per 100,000 population in Ireland in 1999 are illustrated in Figure 1. The highest rate was observed in those over 65 years.

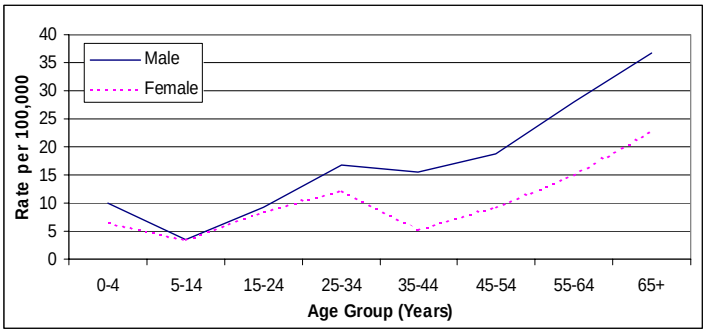

Figure 1: Age & Sex specific rates of notified cases of TB per 100,000

Geographic origin: There were 65 patients born outside Ireland (13.8%): 28 from Europe, 23 from Asia, 13 from Africa and 1 from Oceania. The non-national population did not differ from the Irish population in terms of sex, disease category, sputum or culture status but they were younger ($p<.00001$).

Diagnostic and Clinical Details: Of the 469 TB notifications, 260 (55.4%) were definite cases, i.e. culture confirmed (7.2 per 100,000) and 209 (44.6%) were other than definite cases (5.8 per 100,000).

Of the 469 TB notifications, **306** were pulmonary TB (65.2%), 110 cases were extrapulmonary TB (23.5%), 22 cases were pulmonary+extrapulmonary TB (4.7%) and 27 cases were primary TB. The diagnostic breakdown in each health board is shown in table 3. The age distribution of diagnostic groups is illustrated in Figure 2.

Of the 328 TB cases with a pulmonary disease component, 202 cases (61.5%) were definite, i.e. culture confirmed (5.6 per 100,000). There were 124 (38%) sputum smear positive pulmonary cases (3.4 per 100,000).

Of the 260 definite, culture confirmed cases, 95.7% of isolates were *M. tuberculosis* (n=242) and 4.3% were *M. bovis* (n=11). Seven isolates were not available. Resistance was documented in six cases out of a total of 242 *M.tuberculosis* isolates (2.5%). Mono-resistance to

Table 3: Diagnostic categories of TB by Health Board in 1999.

Health Board	P	E	P+E	Pri	Total*
ERHA	124	36	11	9	180
MHB	13	0	2	0	15
MWHB	27	24	0	3	54
NEHB	14	8	3	0	25
NWHB	12	4	1	2	19
SEHB	23	7	1	0	31
SHB	43	23	4	4	74
WHB	50	8	0	9	67
Total	306	110	22	27	465
P-Pulmonary, E-Extr-pulmonary, PRI-Primary					

isoniazid was recorded in 4 cases. There were two multi-drug resist TB (MDR-TB)cases, defined as resistance to at least isoniazid **and** rifampicin, notified and treated in 1999. Six patients had HIV in association with TB. Five cases were pulmonary TB, the sixth pulmonary+extrapulmonary TB. Five were culture positive for *M.tuberculosis*, fully sensitive to standard TB chemotherapy.

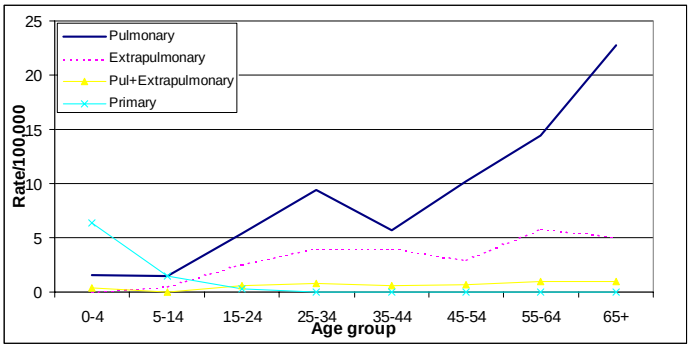

Figure 2: Distribution of TB disease by age group in 1999.

Treatment outcome: Seventy five patients (16.9%) had a documented "treatment completed" outcome. Five patients (1%) had a recorded "lost to follow-up" outcome.

There were 34 deaths (7.2%) amongst the 469 notified cases of TB in Ireland in 1999. In nine cases (1.9%)TB was the recorded cause of death giving a crude death rate of 0.2/100,000. A summary profile of the epidemiology of TB in Ireland in 1998 and 1999 is shown in Table 4.

Discussion

In Ireland there was a 10.2% increase in the notification rate in 1999 compared to 1998. This has also been reflected in the 3 year moving average, which for the first time in the 1990s has seen a reversal of the steady downward trend in the number of TB cases. In 1999, 13.8% of all TB cases were born outside Ireland compared to the the 1998 figure of 8.3%. When compared to several other European countries, e.g. Norway, Sweden, Denmark and Switzerland, where more than 50% of tuberculosis cases are in patients of foreign origin[2], it means we still have one of the lowest proportion of TB cases in foreign born patients in the EU. Within Ireland there is quite an obvious east-west divide in the notification rates of TB seen in 1999. The WHB and the MWHB had the highest rates of TB in 1999, which was also the case in 1998 (Figure 3). There were 2 cases of multi-drug resistant TB in 1999. With a further 2 cases of MDR-TB provisionally reported for 2000 (unpublished data, NDSC) through the National TB Surveillance System it is an issue that needs to be kept under surveillance, something that can be greatly facilitated with the establishment of a

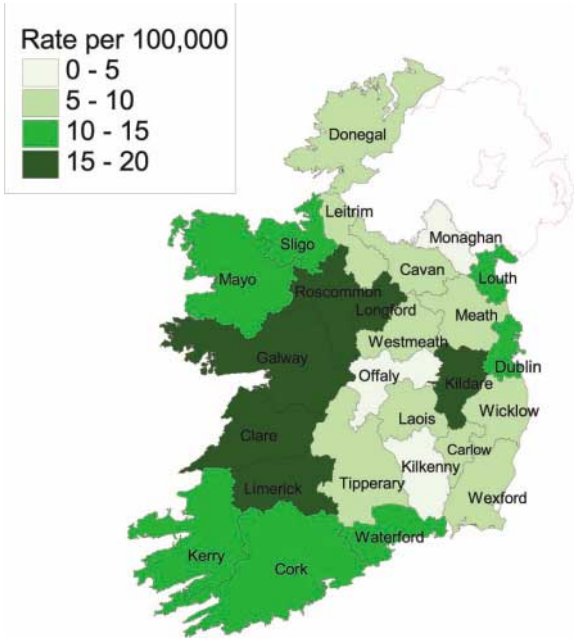

Figure 3: Age-standardised incidence of TB in Ireland, 1999.

National TB Reference Laboratory. This is the second successive year, which has seen an increase in the crude number of notified cases. Although the increase is small, it is a reminder that tuberculosis in Ireland hasn't gone away and that tuberculosis treatment and contact tracing services need to be maintained and preferably enhanced.

Acknowledgements: I would like to thank all those who participated in the collection of information in each health board: notifying physicians, public health doctors, microbiologists, nurses and laboratory staff without whom this report would not have been possible.

References:

1. Department of Health (Dublin, Ireland) Report of the Working Party on Tuberculosis 1996; Government Publications.
2. EuroTB (1999) Surveillance of Tuberculosis in Europe. Report on Tuberculosis cases in 1997.

Dr Alan Smith, NDSC.

Table 4: Summary Profile of TB in Ireland 1998-9.

Epidemiology of TB: Summary Profile	1998	1999
Total number of cases	424	469
Notification rate	11.7	12.9
Foreign born TB patients	35	65
% Culture positive cases	56.8	55.4
M. tuberculosis	234	242
M. bovis	6	11
% Smear positive pulmonary cases	38.6	38.0
Cases resistant to isoniazid alone	2	4
Cases resistant to rifampicin alone	0	0
Cases resistant to ethambutol alone	0	0
Cases resistant to streptomycin alone	2	0
Multi drug resistant cases	0	2
Deaths attributable to TB	6	9

MRSA bacteraemia in Europe

The European Antimicrobial Resistance Surveillance System (EARSS) project collects data on isolates of *Staphylococcus aureus* (*S. aureus*) from patients with bacteraemia. In 2000, the nineteen Irish participant laboratories in EARSS reported 645 patients with *S. aureus* bacteraemia. Of these isolates, 38.8% (95% confidence interval 35 - 42.5%) were resistant to methicillin (n=250). This contrasts with EARSS data from northern European countries that report MRSA rates below 3% (Denmark, Sweden, Finland and Netherlands) and is similar to data reported from southern European countries with rates over 30% (Greece, Spain, Italy, Portugal and Bulgaria).[1] Most cases of *S. aureus* bacteraemia occur in men (61%). This percentage is seen in almost every country.

CDR Weekly[2] reported a 5% increase in methicillin resistance in *S. aureus* isolated from patients with bacteraemia over the past year, 9454 isolates of *S. aureus* for which methicillin susceptibility data were available, 42% were resistant in England and 46% were resistant in Wales. In Scotland, 40% (585/1466) of episodes of *S. aureus* bacteraemia in 2000 (up to week 40) were resistant to methicillin according to SCIEH Weekly Report.[3] In Northern Ireland, there were 344 *S. aureus* bacteraemias reported in 2000, of which 123 (36%) were methicillin resistant.[4]

From April 2001, the Department of Health in England has confirmed the introduction of "compulsory universal bacteraemia surveillance, focussing on MRSA in the first instance". According to CDR Weekly, this "will be the first step in improving surveillance of antimicrobial resistance and healthcare associated infections".[5] Data will be reported on a quarterly basis by hospitals.

The EARSS project continues to provide systematic, ongoing surveillance of this important cause of morbidity and mortality in Europe. Voluntary participation by Irish hospitals since 1999 has provided consistent and reliable data on invasive isolates of *S. aureus* and *Streptococcus pneumoniae*. The EARSS project expanded in 2001 to examine resistance in *Enterococcus faecium* and *Enterococcus faecalis* and *Escherichia coli* from blood cultures, in several countries in Europe.

1. National Institute of Public Health and the Environment (RIVM). EARSS Newsletter 2000; **3** (http://www.earss.rivm.nl/PAGINA/DOC/newsl3.pdf)

2. CDSC. *S. aureus* bacteraemia England & Wales. *Commun Dis Rep CDR Wkly* [serial online] 2001 [15th February 2001]; **11**(7): bacteraemia. Available from www.phls.co.uk/publications/CDRelectronic/CDR%20Weekly/CDR%20Weekly/PDF%20files/cdr0701.pdf

3. SCIEH Weekly Report 2000; **47** www.show.scot.nhs.uk/scieh/PDF/pdf2000/0047.pdf

4. Communicable Diseases: Provisional Summary 2000 Northern Ireland Edition. 2001; **9** (13): 4. (CDSC Northern Ireland, Belfast City Hospital)

5. CDSC. Mandatory bacteraemia surveillance from April 2001. *Commun Dis Rep CDR Wkly* [serial online] 2001 [22nd March 2001]; **11**(12): bacteraemia. Available from www.phls.co.uk/publications/CDR%20Weekly/archive/news1201.html#mandatory

Dominic Whyte, NDSC.

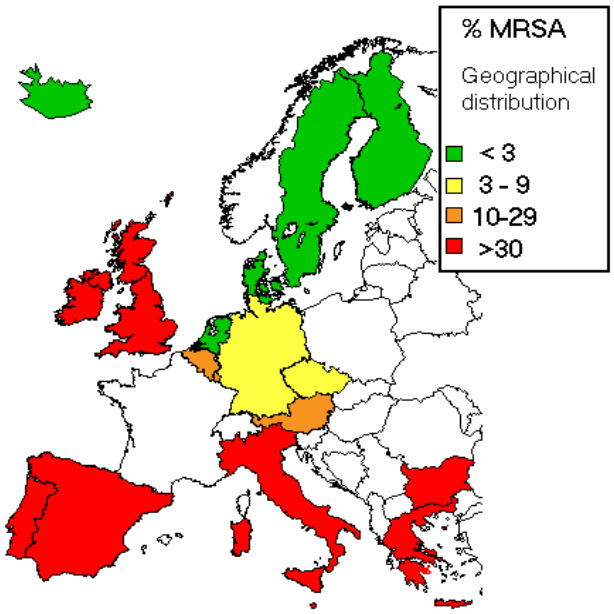

Figure 1: Percentage of bacteraemias caused by methicillin resistant S. aureus *in European countries, as reported to EARSS 1998-2000.*

Foot-And-Mouth Disease (FMD) & Human Health

A single human case of FMD has recently been reported in the UK. It should be pointed out that the overall risk of human infection with Foot-and-Mouth Disease is extremely small. The last human case reported in Britain occurred in 1966, during the last FMD epidemic. In these rare cases symptoms have mostly been mild and self-limiting, mainly uncomfortable tingling blisters on the hands but also fever, sore throat, and blisters on the feet and in the mouth. No human to human transmission has ever been reported and there is no evidence of transmission to humans through the consumption of meat or pasteurised milk. FMD is therefore not a public health threat.

WHO Influenza Vaccine Composition

The World Health Organization (WHO) released details[1] of the composition of the influenza vaccine (Northern Hemisphere) for the 2000-2001 season. Experts in Geneva agreed to recommend that the vaccine contain:

- an A/New Caledonian/20/99(H1N1)-like virus
- an A/Moscow/10/99/(H3N2)-like virus
- a B/Sichuan/379/99-like virus

WHO strongly recommends the use of vaccine as an effective preventive measure against this potentially fatal disease. About 50% to 80% of vaccine recipients will be protected against the disease when there is good match between the vaccine and strains of influenza virus that are in circulation. In cases where the vaccine does not fully protect against the disease, severity of illness and the frequency of serious complications are reduced.

1. WHO Press Release WHO/08 2001 [Online] 16th February 2001 http://www.who.int/inf-pr-2001/en/pr2001-08.html

Salmonella Monthly Report (March 2001):

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.Typhimurium	0	0	2	0	1	0	2	0	5
S.Enteritidis	2	0	0	0	0	1	0	0	3
S.Bredeney	1	0	0	0	0	0	0	0	1
S.Dublin	0	0	0	0	0	0	1	0	1
S.Kentucky	0	0	0	1	0	0	0	0	1
S.Seftenberg	1	0	0	0	0	0	0	0	1
Total	4	0	2	1	1	1	3	0	12