December 2004

Closing the Loop

Communicable Disease Bulletin for the Eastern Regional Health Authority

Contents Issue 4:

Welcome to the Winter Issue of Closing the Loop.

In this issue we have introduced a new section called Microbiology Topics, which we hope will be a regular feature in future issues. The Mater Hospital Microbiology Laboratory is our first contributor. This is in the form of a report on respiratory samples, which the laboratory processed in the past year. Along with this are some guidelines for sending samples to the laboratory.

- Frequently asked questions about the ID Notification process
- Microbiology Topic: respiratory microbiology
- Mumps
- Leptospirosis…Weil's Disease
- Immunisation Update
- Hepatitis B
- Notifications

Editorial Board

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Frequently asked questions about the notification process

What diseases are notifiable?

Since January 1st 2004, 68 infectious diseases are notifiable. A full list of notifiable diseases may be seen on the ERHA website: www.erha.ie. or on the NDSC website: www.ndsc.ie

Hospital clinicians may see a wider range of diseases than GPs routinely do, while laboratories may see diseases, which may not have been diagnosed on a clinical basis alone.

To ensure that the appropriate diseases are notified it may be useful for clinicians in both primary care and in hospitals to highlight the commoner diseases so that a routine may be established for reporting them.

Who should notify?

All medical practitioners and clinical directors of diagnostic laboratories are required by law to notify all notifiable diseases to the Director of Public Health (DPH). The Department of Public Health gathers this data together and analyses it to produce information on the frequency (number of cases) and the distribution (who is getting the infection and where they are) of disease. This analysis is performed on an ongoing basis so that outbreaks and epidemics can be detected as soon as they begin, as it is necessary to take immediate action if the spread of an outbreak or epidemic is to be controlled or prevented.

Why is notification important?

Infectious diseases have always been recognized as being a major threat to public health. Most if not all Irish people have suffered from a notifiable disease at some point in their lives. Infectious diseases are common amongst hospitalised patients and are a common reason for attending primary care.

While vaccination programmes, the provision of safe drinking water and antibiotics have reduced the threat from many infectious diseases, people still die from infectious diseases.

Diseases, which were well controlled in the past, have begun to re-emerge and are reaching epidemic proportions in some countries. In 2000, a major epidemic of measles occurred which involved more than 1500 cases, leading to 2 measles–related deaths and hospitalisation of more than 100 children.

New diseases such as multidrug resistant TB, vCJD, SARS and infectious diseases that could be spread as part of a deliberate release by terrorists pose threats to public health.

Increased migration across the world and increased foreign travel can result in the emergence of diseases, which in the past were relatively uncommon.

Surveillance of these diseases is necessary to

Notification of Infectious Disease ID identifier (official use only) _____

Patient first name: _____ Surname: _____ Country of birth:

Infectious disease (see list at front): _____ Ireland ☐ Other ☐

Case classification (see case definitions): Possible ☐ Probable ☐ Confirmed ☐ Date of onset: __/__/__

Date of diagnosis: __/__/__ Laboratory results: _____

Type of specimen (stool, blood, csf etc): _____

Vaccination status (if vaccine preventable):

Complete ☐ Incomplete ☐ Unvaccinated ☐ Unknown ☐

Additional information: _____

Signed: _____

Title/Position: _____

Date of notification: __/__/__

Notifier (stamp may be used) (Please Print)

Name: _____

Address: _____

_____

_____

Tel: _____

allow timely public health intervention, to facilitate the prevention and control of disease and to monitor trends in endemic diseases.

Notification Form

A sample clinical notification form is shown above. To ensure effective and efficient follow-up of cases of infectious disease all questions on this form should be answered. Missing information may cause delays in identifying diseases, which require prompt public health action.

Booklets of these forms have been sent to all GPs and further copies are available from the Department of Public Health. If you do not have a form you may always make the notification over the phone.

Likewise specimens sent to laboratories must have the patient's name, address, date of birth, GP's name and clinical details. Please include relevant details if the specimen is part of an outbreak or if there is a history of foreign travel or if a specific diagnosis is being considered. This will not only facilitate a prompt result for you but also will help the laboratories to fulfil their statutory obligation to notify infectious diseases.

When should you notify?

The Infectious Diseases legislation requires a medical practitioner to notify the Department of Public Health in writing or electronically as soon as he or she becomes aware or suspects that a patient has an infectious disease. Likewise the clinical director of a diagnostic laboratory is required to notify as soon as an infectious disease is identified in the laboratory. There are a number of diseases, which require immediate preliminary notification by telephone. These are poliomyelitis, anthrax, botulism, cholera, diphtheria, toxin producing E.Coli, haemophilus influenza, legionellosis, meningococcal disease, paratyphoid, plague, rabies, SARS, smallpox, tularaemia, typhoid, typhus, viral haemorrhagic fevers or yellow fever) and where there is a serious outbreak of any infectious disease.

Notification should be sent to:

The Director of Public Health,
ERHA Department of Public Health,
Dr. Steevens' Hospital,
Dublin 8.
Phone: 01 6352145
Fax: 01 6352103

What happens once the disease is notified?

For routine day-to-day matters, the SAMO in a Community Care Area is usually the person who initiates disease specific public health action to prevent the spread of infection in the community. This may involve contact tracing, the provision of chemoprophylaxis, immunisation, public education and reassurance and outbreak investigation when required.

The Department of Public Health conducts surveillance on infectious diseases to detect outbreaks and to prevent the spread of infection.

For certain diseases more detailed information is often required. Medical Officers, Environmental Health Officers, or Public Health Nurses in the Community gather this information which may include such items as food consumed prior to onset of illness, immunisation status, travel history, occupation (health care worker, food handler), contact with other cases, attending a crèche or school.

Surveillance data are presented in each issue of Closing the Loop and periodic reports are produced on specific diseases and presented on the ERHA website.

Case Definitions

A case definition is a set of clinical or microbiological characteristics by which a case of infectious disease is defined. This allows diseases to be classified as

possible, probable or confirmed. Booklets of case definitions have been sent to all GPs and to hospital laboratories. Further copies may be obtained from the Department of Public Health.

What should you tell the patient?

Notification of infectious diseases is a statutory requirement in the Irish Health System. While the general population may not be aware of this requirement patients should be informed by their GP that they have a notifiable disease before public health action is taken.

Key points about notification

By whom? The clinician or clinical director of a diagnostic laboratory

Which diseases? Any disease on the list of notifiable diseases

When? On suspicion or diagnosis of clinical disease or identification in a laboratory

How? On a notification form, which can be posted or faxed to the DPH or by telephone if urgent action is required

To whom? The Director of Public Health

Why? So that appropriate action to investigate and control spread, and to provide data for local and national surveillance

MICROBIOLOGY TOPIC

Laboratory Surveillance of Respiratory samples from General Practitioners

Surveillance of infections diseases requires not only a clinical description of a disease but in many instances a laboratory description in order to properly define a case of infectious disease. Laboratory participation in the surveillance process depends on clinicians submitting appropriate and timely specimens for analysis.

In order to improve awareness, simplify the reporting process and provide feedback to our notifiers we have decided to include a section in each issue on laboratory surveillance of groups of infectious diseases. In this issue the Microbiology laboratory in the Mater hospital has contributed a report on the results of respiratory (sputum) samples sent from general practice to the microbiology laboratory at the Mater Misericordiae University Hospital (MMUH) during the period 1st October 2003 to 30TH September 2004.

We hope to work with other laboratories in the region in future issues.

Lower respiratory tract infection is a common cause of morbidity resulting in frequent consultations in general practice. In many cases antibiotics are not necessary and should be avoided. When indicated, the choice of antimicrobial agent can be determined by knowledge of the likely pathogens and their antibiotic sensitivity pattern. In this study all sputum samples from general practice sent to the Microbiology laboratory at the MMUH during the period were analysed. The common pathogens were identified and their antibiotic susceptibility pattern recorded.

Results

A total of 234 sputum samples were received in the laboratory from 170 patients. Samples were good quality, graded as purulent or mucopurulent. Commensal flora was isolated from 135 samples. Of 87 positive samples, only one isolate per patient was included in the analysis, a total of 75 isolates. Table 1.

Table 1

Organism	Total number & %
Haemophilus influenza	30 (40%)
Moraxella catarrhalis	14 (19%)
Streptococcus pneumoniae	6 (8 %)
Staphlococcus aureus	5 (7%)
MRSA	5 (7%)
Pseudomonas	5 (7%)
Others (coliforms)	10 (13%)
Total	**75**

Of the *Haemophilus influenzae* isolates, 83% were sensitive to ampicillin and 95% were sensitive to co-amoxyclav. One of six (8%) *Streptococcus pneumoniae* isolates showed intermediate resistance to Penicillin (MIC 1.0µg/ml). *Staphylococcus aureus* was isolated from 10 samples (14%), 5 were sensitive to commomly used antibiotics such as flucloxacillin and co-amoxyclav, and 5 were Methicillin resistant *Staphylococcus aureus* (MRSA). All *Pseudomonas* isolates were sensitive to ciprofloxacin.

Discussion

Results of sputum culture must be interpreted with care since many of the organisms responsible for pneumonia are normal upper respiratory tract commensals. The value of sputum examination depends on the quality of the specimen, the interval between expectoration and examination and prior antibiotic therapy. *Coliform* commensals are frequently isolated from patients who have received antibiotic therapy.

The commonest organisms implicated in community-acquired pneumonia are those identified in this study, *Streptococcus pneumoniae*, *Haemophilus influenzae* and *Moraxella catarrhalis*. *Staphylococcus aureus pneumonia* occurs in the context of recent influenza infection. Causes of atypical pneumonia include *Mycoplasma pneumoniae, Chlamydia pneumoniae* and *Coxiella burnetti. Mycoplasma pneumonia* tends to occur in epidemics every 4 to 5

years and affects younger age groups. These organisms are not isolated in routine sputum culture. Diagnosis relies on antibody detection with a rise in antibodies from acute to convalescent (2 weeks after onset of symptoms) sera. Respiratory viruses such as respiratory syncytial virus (RSV), influenza and adenoviruses may occasionally cause primary viral pneumonia.

Based on the susceptibility patterns of the isolates in this study, the most effective empiric therapy for community-acquired pneumonia is co-amoxyclav. If there are features suggestive of atypical pneumonia, a macrolide such as clarithromycin is effective. However, the increasing problem of antibiotic resistance is reflected in this study with the prevalence of MRSA and penicillin resistant *Streptococcus pneumoniae* and caution with antibiotic use is advised.

Key Points on sending sputum samples to the Laboratory

- Specimens should be fresh and taken before antimicrobial treatment is started
- Material required is sputum from the lower respiratory tract
- Saliva and postnasal secretions are not suitable
- A minimum of 1ml of sputum is required
- Specimens should be transported and processed as soon as possible
- If transport or processing is delayed, refrigeration is preferable to storage at ambient temperature. Delays of over 48 hours are undesirable

Mumps

There has been an increase in reported cases of Mumps throughout the country. In 2003 there were 20 cases of mumps in the eastern region. Up to mid December 2004 there were 79 notifications. The number of cases of mumps in the eastern region in each week to date is shown in Figure 1.

The majority of these cases were in teenagers and young adults who were never immunised or had only received one dose of MMR vaccine. Very few cases are occurring in younger children as many are protected by MMR. In the past decade there has been increasing recognition of the need for two doses of MMR vaccine to prevent outbreaks. MMR vaccine is approximately 95% effective in preventing infections. Two doses of MMR are recommended for all children.

As the scheduling of the school based MMR changed in 1992 from 11-12 years to 4-5 years many of the current 3rd level students are likely to have had only one MMR vaccine.

We are recommending that 16-24 year olds in 3rd level institutions be offered MMR, unless they are certain they have received 2 doses in the past. Contacts of cases may also be referred to their GP for immunisation. The immunisation may be delivered either by GPs or the College Student Health Services.

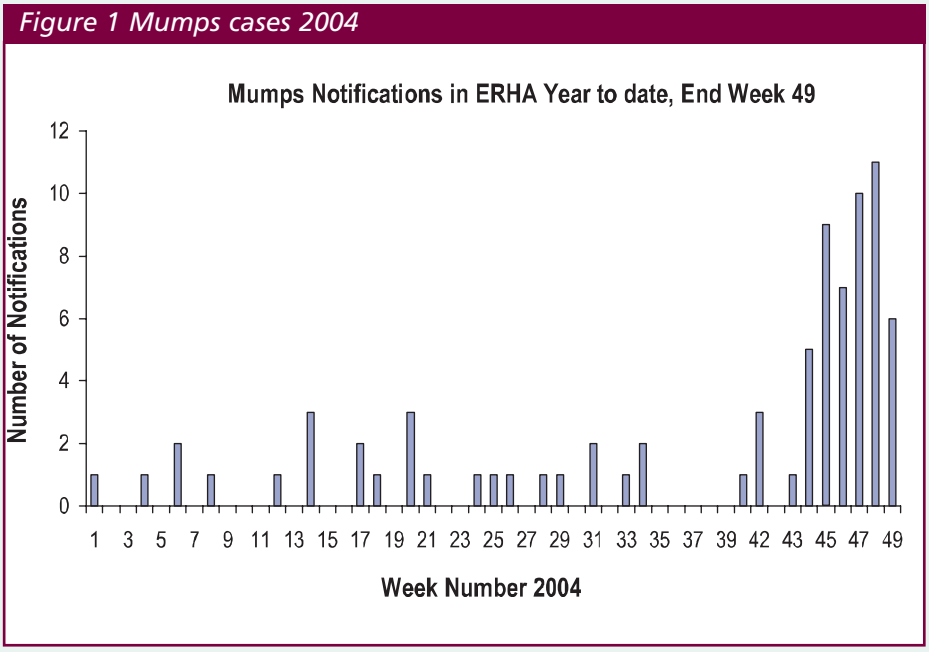
Payment for administration of the vaccine will be the current fee payable to GPs for booster immunisation or vaccination in certain situations such as disease outbreaks- €32.76.

The five part primary Childhood Immunisation record/return form should be submitted for payment. Further information on mumps may be found on the National Disease Surveillance Centre website: www.ndsc.ie

Leptospirosis

During November six cases of Leptospirosis were notified to the Department of Public Health, ERHA. In at least five cases there was a definite link to canoeing on the River Liffey close to the sluice gates in Leixlip. Our investigations

Figure 1 Mumps cases 2004



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are continuing. A press release alerting the public to the risks involved with canoeing and other activities in the rivers was sent out on the 25th November. We also advised A&E departments and other relevant hospital staff. The Department of Public Health has been working with the Irish Canoe Union to advise members about the risks and preventative measures. An outbreak meeting involving the environmental health department was held on the 26th November.

Information and a fact sheet were circulated to GPs in the region as well.

In November 2001 the Department of Public Health investigated another outbreak of Leptospirosis among canoeists on the same stretch of the River Liffey. The weather conditions at the time were similar for both outbreaks in that there was heavy rainfall over a number of days causing the river to swell and this was followed by mild weather.

Prior to this outbreak only one case of Leptospirosis was notified in 2004.

The number of cases recorded nationally in Ireland is usually low with 7 cases recorded in 2000, 9 cases in 2001 and 8 cases in 2002.

Leptospirosis is a worldwide bacterial disease that affects humans and animals. Bacteria of the genus Leptospira, of which more than 200 species have been identified, cause it. Leptospirosis in Ireland is usually picked up from rats, although a milder form can be caught from cattle, dogs or cats. The infection is spread through contact with rats, or rat, cattle cat or dog urine or faecal fluids from cattle. Infection is transmitted by contact with skin especially if abraded, or of mucous membranes with water, moist soil or vegetation contaminated with urine of infected animals; occasionally through ingestion of food contaminated with the urine of infected rats.

Leptospirosis is an occupational hazard of farmers, vets and sewage workers. It is a recreational hazard for campers or those who participate in outdoor sports in contaminated areas and has been associated with water sports. In Ireland it has increased in particular in those who engage in canoeing following periods of high rainfall.

Clinical features

The clinical spectrum of the disease is wide. Some individuals may be asymptomatic. The disease often follows a biphasic course. The initial phase has a sudden onset characterised by headache, myalgia, chills fever and conjunctivitis, generally lasting four to nine days. The second phase occurs from the sixth to twelfth day of the disease and is characterised by high antibody titres and reappearance of symptoms. The classical form, Weil's disease, described in 1886 by Adolf Weil, is characterised by fever, jaundice, renal failure and haemorrhage.

The illness is often misdiagnosed as meningitis, encephalitis or influenza. The case fatality is low but increases with increasing age and may reach 20% or more in patients with jaundice and kidney damage that have not been treated with dialysis.

Laboratory confirmation

During the first phase of the illness organisms may be cultured from blood, CSF or urine. As the immune response develops a significant rise in antibody titres can be detected. If initial serology is negative this should be repeated after 10 days.

Treatment

Leptospirosis is treated with antibiotics, such as penicillin or doxycycline, which should be given early in the course of the disease. Intravenous antibiotics may be required for persons with more severe symptoms.

Preventative Measures

- Control rodent population
- Educate risk groups both occupational and recreational
- Avoid swimming or boating in water which is obviously polluted
- Cover any cuts or abrasions with a waterproof dressing while swimming or canoeing
- Wear protective clothing
- Shower thoroughly following water activities
- Wash hands after handling any animal or contaminated clothing and always before eating, drinking or smoking
- Doxycycline prophylaxis 200mg once weekly should be considered for those at high risk either through occupational exposure or recreational activities

Leptospirosis is a notifiable disease and should be notified to the Director of Public Health.

Hepatitis B

Hepatitis B is one of the commonest causes of liver disease worldwide. Around half of acute infections in adults have no symptoms and diagnoses are made during screening for other reasons. All those with hepatitis B, whether they are acute or chronic cases, are potentially infectious to others. One of the changes to the list of notifiable diseases is that Hepatitis B must be now be notified as either acute or chronic. Although Ireland had a very low rate of hepatitis infection in the general population, rates in high-risk groups especially intravenous drug users (IVDU) within the ERHA are higher. Since the late 1990s the number of cases of hepatitis B infections notified has increased dramatically in the country reflecting the continued influx of immigrant testing especially in refugee centres and in maternity hospitals. Fig. 2. Under-reporting is common but since January 2004 as laboratories are legally obliged to notify infectious diseases the numbers have risen dramatically.

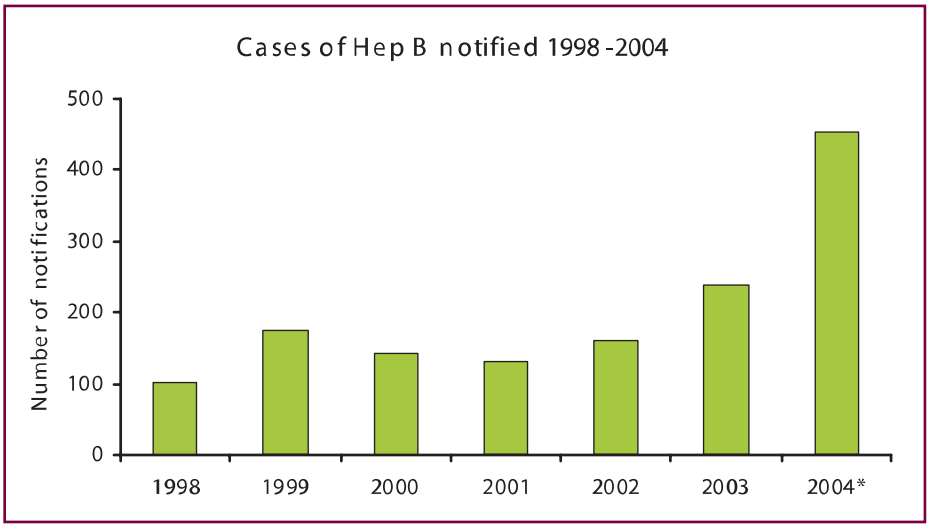

Figure 2 Hepatitis B notifications 1998-2004

From January to November 2004 a total of 454 cases of hepatitis B (acute and chronic) have been notified compared with 237 for the whole of 2003 and 159 in 2002. Of these 454, there were 40 acute cases. The sources of notification are shown in Figure 3. Since April this year a medical officer in the Department of Public Health has co-ordinated the follow-up on each new acute case.

In order for the Department of Public Health to take important public health action in terms of follow-up, contact tracing and enhanced surveillance it is important that complete patients details are provided by the notifier. It is important also to be aware that not all infectious disease clinics or private practitioners undertake contact tracing.

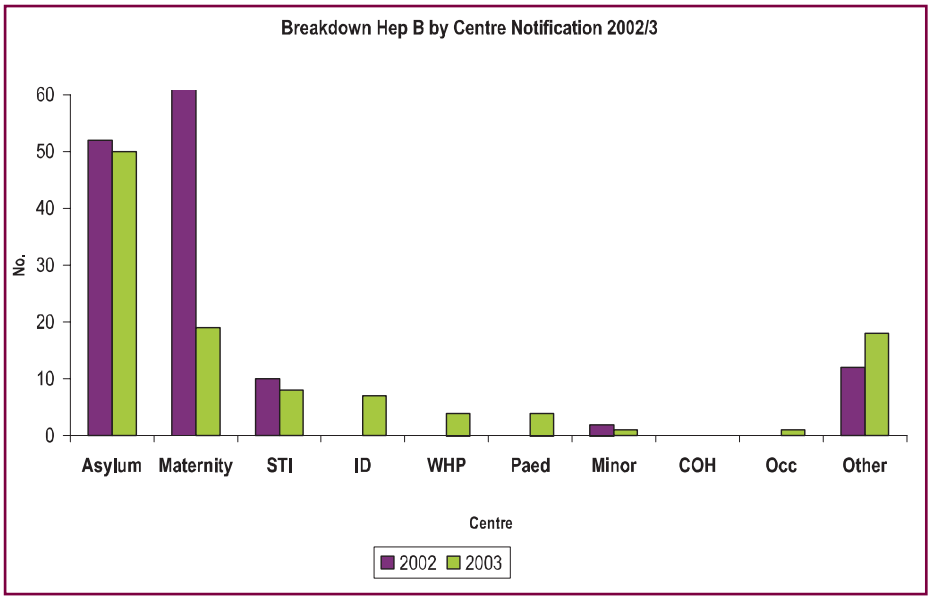

Figure 3 Hepatitis B notifications

Access to Hepatitis B Vaccine for General Practitioners

The Immunisation Guidelines for Ireland 2002 (Chapter 6) recommends that the spouses, sexual partners, family and household contacts of acute cases and carriers of HBV receive 3 doses of HepB vaccine if the potential recipient is non immune (anti HBc negative).

GPs may request Hepatitis B vaccine (Adult and Child doses) by using the same form as used requesting routine childhood vaccines. Cahill May Roberts will then deliver vaccines as arranged.

GPs are reimbursed for administration of vaccine for GMS patients. Private patients should make their own arrangements.

Under this new system GPs no longer need to request the Hepatitis B vaccine through their local Community Care Offices.

Immunisation Update

The immunisation target in Ireland is for 95% of children to have completed the immunisation schedule by two years of age. If this is achieved and maintained it is possible to eradicate and control vaccine-preventable diseases and future outbreaks can be avoided.

The immunisation uptake rates for children born between 01/07/2003 and 30/09/2003 and who had received three doses of DTaP, IPV, Hib and MenC by the time they were 12 months old are presented below for each of the area health boards (Table 2). Rates for each quarter refer to the cohort of children born in the corresponding quarter the previous year.

The immunisation uptake rates for children born between 01/07/2002 and 30/09/2002 and who had received three doses of DTaP, IPV, Hib and MenC and one dose of MMR by the time they were 24 months old are presented below for each of the area health boards (Table 3). Rates for each quarter refer to the cohort of children born in the corresponding quarter two years previously.

% Uptake at 12 months
Cohort born 01/07/2003 – 30/09/2003

NAHB		%DT	%P	%Polio	%Hib	%Men C
	Q1-2004	77.8	77.6	77.6	77.7	77.0
	Q2-2004	75.5	75.3	75.5	75.5	74.5
	Q3-2004	77.4	77.2	77.2	77.4	76.4
SWAHB						
	Q1-2003	74.1	74.1	74.1	74.1	73.5
	Q2-2003	74.8	74.8	74.8	74.9	74.1
	Q3-2003	73.5	73.4	73.5	73.5	73.0
ECAHB						
	Q1-2004	79.3	78.2	79.1	79.2	78.4
	Q2-2004	80.0	79.9	80.0	80.0	79.3
	Q3-2004	78.9	78.9	78.9	78.9	78.6

Table 2 % uptake at 12 months

% Uptake at 24 months
Cohort born 01/07/2002 – 30/09/2002

NAHB		%DT	%P	%Polio	%Hib	%Men C	%MMR
	Q1-2003	83.0	82.6	82.9	82.6	81.7	73.2
	Q2-2003	83.8	83.4	83.7	83.7	82.0	73.8
	Q3-2003	84.8	84.5	84.9	84.7	83.1	74.7
SWAHB							
	Q1-2003	84.8	84.5	84.3	84.4	83.3	74.2
	Q2-2003	86.6	86.4	86.4	86.3	85.2	75.7
	Q3-2003	86.2	86.1	86.2	86.2	84.5	74.9
ECAHB							
	Q1-2003	88.2	87.8	87.7	88.1	87.8	79.9
	Q2-2003	88.3	87.6	88.1	88.1	86.5	79.5
	Q3-2003	88.8	88.1	88.4	88.8	86.9	80.1

Table 3 % uptake at 24 months

Influenza Immunisation for Healthcare workers

Reminder for healthcare workers:
Influenza vaccine will protect both you and your patients.

Be Wise - Immunise

A video called Be Wise - Immunise has been produced by the Mid-Western Health Board on behalf of the Health Boards Executive. It will be distributed to all health boards over the next few weeks and it is envisaged that it will be made available to parents via GPs and Public Health Nurses.

ERHA infectious Disease Notifications 2004

Data on notifications presented below show the various methods of notification used in the third quarter of 2004. (Clin = Clinical only; Lab = Laboratory only) ** These only reflect notifications received from laboratories by the end of September 2004.

Disease	Clin	Lab**	Clin & Lab**	Total
Acute anterior poliomyelitis	0	0	0	0
Acute infectious gastroenteritis	42	31	9	82
Bacterial meningitis (not otherwise specified)	2	1	2	5
Campylobacter	17	109	66	192
Clostridium perfringens	0	0	0	0
Creutzfeldt Jakob disease sporadic	0	0	0	0
Cryptosporidiosis	18	1	0	19
Enterococcal bacteraemia	0	22	0	22
Enterohaemorrhagic E coli toxin producing	0	3	2	5
E coli infection (invasive)	0	48	1	49
Giardiasis	0	6	2	8
Haemophilus influenza disease (invasive)	0	3	0	3
Hepatitis A (acute)	0	5	2	7
Hepatitis B (acute & chronic)	21	82	26	129
Hepatitis C	17	190	8	215
Infectious parotitis (mumps)	2	3	2	7
Influenza A	0	0	0	0
Influenza B	0	0	0	0
Listeriosis	0	1	1	2
Malaria	3	2	1	6
Measles	43	10	38	91
Meningococcal disease	6	0	10	16
Noroviral infection (sporadic cases)	23	25	4	52
Pertussis	10	3	2	15
Rubella	11	0	0	11
Salmonellosis	8	41	38	87
Shigellosis	0	5	2	7
Staphylococcus aureus bacteraemia incl. MRSA	0	57	0	57
Staphylococcus aureus enterotoxigenic food poisoning	1	0	0	1
Streptococcus pneumonia invasive	1	4	2	7
Streptococcus pyogenes, group A infection (invasive)	1	4	0	5
Toxoplasmosis gondii	0	6	1	7
Tuberculosis	5	13	16	34
Typhoid Salmonella Typhi	0	0	1	1
Viral meningitis	1	1	0	2
Yersiniosis	0	0	1	1
Total	232	676	237	1145

C. C. A Address and Contact numbers

1 Tivoli Road,
Dun Laoghaire,
Co. Dublin.
Tel: 284 3579
Fax: 280 8785

2 Vergemount Hall,
Clonskeagh,
Dublin 6.
Tel: 269 8222
Fax: 283 0002

3 1-25 Lord Edward Street,
Dublin 2.
Tel: 648 6500
Tel: 648 6600

4 Old County Road,
Crumlin,
Dublin 12.
Tel: 415 4700
Fax: 415 4804

5 Cherry Orchard Hospital,
Ballyfermot,
Dublin 10.
Tel: 620 6300
Fax: 620 6358

6 Rathdown Road,
Dublin 7.
Tel: 868 0444
Fax: 868 0394

7 193 Richmond Road,
Dublin 3.
Tel: 857 5400
Fax: 857 5449

8 Cromcastle Road,
Coolock,
Dublin 5.
Tel: 816 4200
Fax: 847 9944

9 Beech House
Dublin Roads
Naas
Co Kildare
Tel: 045 981 800
Fax: 045 981870

10 Glenside Road,
Co. Wicklow.
Tel: 0404 68 400
Fax: 0404 69044