COMMUNICABLE DISEASES

Monthly Report

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Enhanced Surveillance of Meningococcal Disease (ESMD)

During the month of October 2004, six cases of invasive meningococcal disease were notified through the ESMD scheme. Two of these have been identified as serogroup B and one as serogroup Y. None of these three cases occurred in young children. Two further cases are, as yet, ungrouped and the remaining case has not been laboratory confirmed. No deaths due to meningococcal disease occurred during the month of October.

Between 1 January 2004 and 31 October 2004, CDSC (NI) received 78 notifications of invasive meningococcal disease through the enhanced surveillance of meningococcal disease (ESMD) scheme (Table 1), fifteen fewer than for the same period last year. To date, 47 of these 78 notifications (60 %) have been laboratory confirmed: 39 (83%) were identified as serogroup B, 1 (2%) as serogroup C, 2 (4%) as serogroup Y, 1 (2%) as serogroup W135 and 4 (9%) were ungrouped. To date, two deaths have been attributed to meningococcal disease. Both occurred in children aged 2 years or under. One child presented with septicaemia and had serogroup B infection. The other child presented with both meningitis and septicaemia, but infection was not laboratory confirmed.

Case definitions for invasive meningococcal disease

Confirmed case: final clinical diagnosis of meningitis, septicaemia or other invasive disease and at least one of the following:
Neisseria meningitidis isolated from blood, CSF or rash
Gram negative diplococci in CSF
Meningococcal DNA in blood, CSF or rash
Meningococcal antigen in blood, CSF or urine
>4 fold rise in IgG antibody to C polysaccharide

Probable case: final clinical diagnosis of meningitis, septicaemia or other invasive disease where meningococcal infection is considered the most likely diagnosis by the CCDC in consultation with the physician managing the case.

Meningococcal infection occurs most frequently between the months of November and March. Updates on disease activity will, therefore, appear in Monthly Reports throughout the meningococcal season.

Table 1: Meningococcal disease by Health and Social Services Board, Northern Ireland, January to October 2004

	Confirmed				
HSSB	B	C	Other and ungrouped	Not confirmed	Total
E	12	1	3	13	29
N	13	0	3	3	19
S	8	0	1	6	15
W	6	0	0	9	15
Total	39	1	7	31	78

Enhanced Surveillance of Influenza in Northern Ireland (ESINI)

Enhanced surveillance of influenza in Northern Ireland (ESINI) for the 2004-05 season commenced on 25th September 2004 (Week 40). Surveillance arrangements for this winter have been described previously (Monthly Report Vol 13 No 9).

Clinical Data

From Week 40 to Week 44 inclusive, a total of 11 cases of clinical 'flu and 145 cases of 'flu-like illness have been reported under the ESINI scheme. Overall, GP consultation rates for 'flu and 'flu-like illness have been at the level expected for the time of year and are considerably lower than those recorded during the same period of the 2003-04 season. Co-Op call rates from Week 40 to Week 44 are also in accordance with those of previous years.

Figure 1: Combined consultation rates for influenza and 'flu-like illness (FLI) in General Practice, Northern Ireland

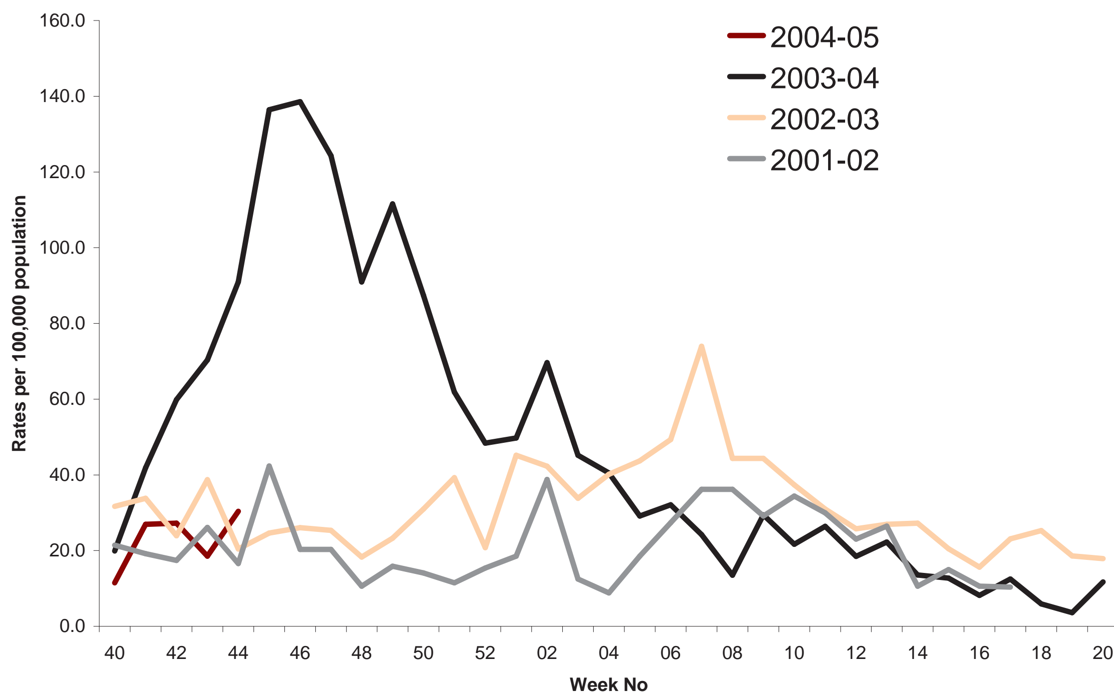
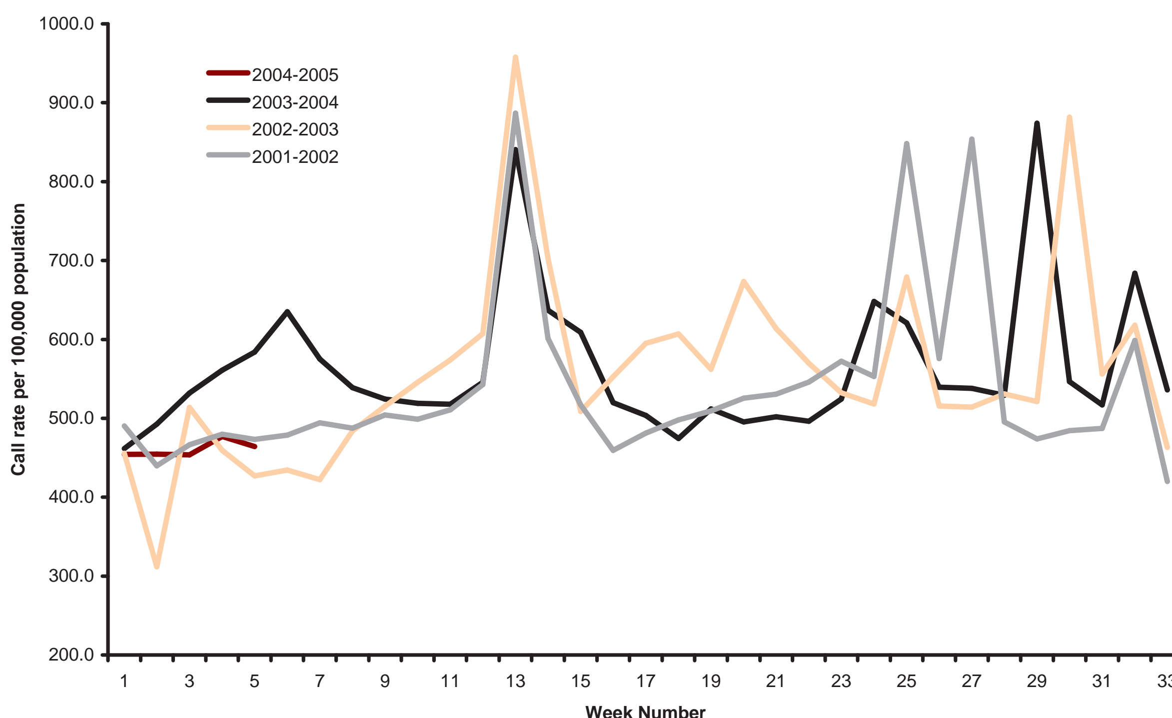


Figure 2: Total call rate for GP co-operatives, Northern Ireland



Virological Data

Since the beginning of the 2004-05, season there have been no influenza virus detections in Northern Ireland. This is in contrast to the same period last year, when 20 influenza A H3 virus detections were made between Week 40 and Week 44. Numbers of detections of other respiratory viruses, such as RSV, are also low at present.

Weekly Influenza Bulletin

An Influenza Bulletin is issued each week during the 2004-05 season (Week 40 of 2004 to Week 20 of 2005). This is circulated to the Department of Health, Social Services and Public Safety, Boards and Trusts, participating GP practices and Co-Operatives, and other national influenza surveillance centres. If you wish to be added to the mailing list for this bulletin, please contact Dr Hilary Kennedy on 028 90 263765 or by email hilary.kennedy@hpa.org.uk. Alternatively, current bulletins are posted on the website http://www.cdscni.org.uk and may be downloaded directly from there.

Northern Ireland is a member of the European Influenza Surveillance Scheme (EISS) and local age-specific and virological data are entered weekly onto the EISS database. Up-to-date detailed information, on the incidence of influenza throughout Europe, may be accessed via the website http://www.eiss.org.

Meningococcal disease cluster following a football match

(Submitted with permission and contributed by Dr S Harper, Dr M Devine, Dr Y Doherty, Professor J Watson)

Summary

Two cases of meningococcal disease were reported to the Northern Health and Social Services Board (NHSSB) in January 2004. Both cases were teenage boys who lived in the same town (population 2,400) and had become symptomatic within two days of each other. Initially both were considered sporadic cases but further enquiries established that both boys had travelled on the team bus to a football game and played in the same team. The cases were considered a cluster and other contacts on the team bus were given prophylactic antibiotics. The pathogen isolated in both cases was subsequently identified as a similar type of *Neisseria meningitidis* Group B.

Case reports

Case 1 was reported on 26 January 2004. The 18 year old had developed flu-like symptoms and meningism on 25 January. He was admitted to hospital and diagnosed with bacterial meningitis. Five close contacts were identified and prescribed prophylaxis in line with national guidance[1]. He attended a college and a local athletics club.

Case 2 was reported on 28 January 2004. He was aged 16 years, from the same town and had developed signs of meningococcal septicaemia on 27 January. Four close contacts were identified and prophylaxis arranged. He attended a local school and soccer club.

The cases were reviewed and initially there was no obvious link between educational institutes, sports clubs or social contacts. On further enquiry it was discovered that both boys were on the same football team and had travelled on the team bus to a soccer match on Saturday 24 January 2004. The total journey time on the bus was approximately three hours.

Control Measures

GPs, Dalriada Doctor-on-call and Accident & Emergency Consultants had been informed at the time of each case. Community Trust staff provided information to the educational institutes regarding symptoms.

When the cluster was identified, it was decided that prophylaxis and information should be given to all twenty-three people who had travelled on the bus.

The team coach provided a list of names, addresses, phone numbers and GPs, of those on the bus. All the boys were contacted and the appropriate GPs prescibed rifampicin which was dispensed from the local pharmacist.

Both cases recovered and no further cases were reported. Both strains were identified as *Neisseria meningitidis Group B.*

Discussion

Many cases of meningococcal infection are sporadic but clusters do occur at times. This cluster highlights the importance of enquiring about other social contacts, such as football teams, when two or more cases are reported around the same time. Clusters of meningococcal infection associated with sports activities have been reported before following incidents in England and Belgium.[2,3]

Communication and the need for up to date information is required during an outbreak, for health professionals, other institutions, the media, those people involved and the general public. This must all be done while preserving the confidentiality of those involved.

References

1. Guidelines for public health management of meningococcal disease in the UK. Communicable Disease and Public Health 2002; 5:187-204.

2. Orr H, Kaczmarski E, Sarangi J, Pankhania B, Stuart J on behalf of the Outbreak Investigation Team: Cluster of meningococcal disease in rugby match spectators, Commun Dis Public Health 2001; 4: 316-8.

3. Reintjes R, et al: Detection and response to a meningococcal disease outbreak following a youth football tournament with teams from four European countries, Int J. Hyg. Environ. Health 205, 291-296(2002).

Shooting Up

Northern Ireland data from the Unlinked Anonymous Prevalence Monitoring Programme's survey of Injecting Drug Users (IDUs) in contact with specialist drug services has recently been published as part of *Shooting Up*, the HPA's survey of infections among UK IDUs. [1]

Data from the 130 salivary samples returned in 2002 and 2003 showed 17% to have antibodies to hepatitis C, 2% to have antibodies to hepatitis B core antigen, and less than 1% to have HIV infection.

While these levels are significantly lower than those reported in the rest of the UK, risk behaviours were worse in Northern Ireland. 44% of those who had injected in the four weeks prior to the study (35/79) reported the direct sharing of needles and syringes compared to 35% in Wales, 34% in Scotland and 23-37% in the English regions. This emphasises the need for a continued focus on harm reduction in Northern Ireland.

[1] Health Protection Agency, SCIEH, National Public Health Service for Wales, CDSC Northern Ireland, CRDHB, and the UASSG. Shooting Up; Infections among drug users in the United Kingdom 2003. London: Health Protection Agency, October 2004.
http://www.hpa.org.uk/infections/topics_az/injectingdrugusers/shooting_up.htm

Extended spectrum beta-lactamases (ESBLs)

(Contributed by Dr. A Loughrey, Consultant Microbiologist)

Extended spectrum beta-lactamase bacteria are the major source of resistance to cephalosporins in Enterobacteraciae (coliform type organisms). Most are mutants of TEM- and SHV- type enzymes. However in recent years a new group of ESBLs with CTX-M-type enzymes has emerged.

These enzymes were first detected in South America, Germany and France. Subsequent reports found them in other European countries as well as in the Far East and in North America. [1]

Most producers of TEM- and SHV-type enzymes have been nosocomial isolates, predominantly Klebsiellae.

During 2003, the Health Protection Agency's Antimicrobial Resistance Monitoring and Research Laboratory (ARMRL) received increasing numbers of *E. coli* isolates for ESBL confirmation. These produced a CTX-M-type beta lactamase and many were reported from patients in a community rather than a hospital setting. The emergence of ESBL producing *E. coli* in community settings is also being reported in other parts of Europe and Canada.[2]

Woodford *et al* suggest there is an epidemic strain (Strain A) as well as at least four other major strains circulating within the UK [2]. It appears that certain geographical regions currently have particularly high prevalence of the epidemic strain. The Eastern Health and Social Services Board (EHSSB) area is one of these.

At the time of writing, laboratories within the EHSSB have identified over 300 ESBL producing *E. coli* to date in 2004. Of these approximately one third are from patients in the community with an apparent predominance among elderly patients in care homes. Consistent with other isolates submitted to ARMRL most are from urine specimens although a number of bacteraemias were also identified. Hospital associated isolates have been identified in patients from at least three hospitals.

ESBL producing organisms are clinically important. Not only does the plasmid mediated resistance mechanism destroy cephalosporins but additional resistance mechanisms to other unrelated drugs may also be carried on the same plasmid. The ESBL producing *E. coli* strains within the EHSSB area are also consistently resistant to quinolones and trimethoprim and variably resistant to aminoglycosides and beta-lactam/beta-lactamase inhibitor combinations such as Tazocin. They are reliably sensitive to the penem antibitiotics (imipenem, meropenem and ertapenem) which are the drugs of choice for severe infections caused by these ESBL producers. Therapeutic options, particularly for urinary tract infections in a community setting, are severely limited and advice should be sought from a consultant microbiologist.

Control of ESBL producing Enterobacteraciae will not be easy. Like all Enterobacteraciae, the site of colonisation is the gastrointestinal tract and there are no known effective decolonisation strategies. Control measures include isolation, contact precautions and minimising broad-spectrum antimicrobial use, particularly third generation cephalosporins. There is currently no UK/US national guidance specific to ESBL producers and clinical practice is variable. [3]

Nursing homes may pose a particular problem. Patients with nosocomially acquired ESBL colonisation or infection may return to a nursing home with persistent gastrointestinal carriage. Empiric antimicrobial use in nursing homes is commonplace and infection control arrangements may be less structured than in hospitals. There is accordingly the potential for such institutions to act as a reservoir of ESBL and other resistant organisms for acute hospitals.

The changing epidemiology of ESBL producers means that laboratories must be more vigilant than before. Coliform type organisms may be incorrectly labelled as sensitive to cephalosporins unless checked for possible ESBL production. The Health Protection Agency issued new guidance recently and all laboratories are asked to take note of these. [4]

A local group has been established to investigate this emerging problem. EHSSB, using Antimicrobial Resistance Action Plan (AMRAP) funds, have appointed a Project Officer based at CDSC (NI) who will be conducting a study of ESBL producing *E. coli* in the Board area. Co-operation from colleagues in hospitals and General Practice will be much appreciated.

1. CTX-M–type â-lactamases affect community *Escherichia coli* treatment, Greece [letter].
   Pournaras S, Ikonomidis A, Sofianou D, Tsakris A, Maniatis AN. Emerg Infect Dis . 2004 June
2. Community and hospital spread of *Escherichia coli* producing CTX-M extended-spectrum â-lactamases in the UK
   Woodford et al. *J. Antimicrob. Chemother.* 2004; 54: 735-743.
3. Variation in approach to ESBL *Enterobacteriaceae* among infection control practitioners: results of an Ontario-wide survey
   Canada Communicable Disease Report Volume 28-15 1 August 2002
4. Guidance to Diagnostic Laboratories. Laboratory detection and reporting of bacteria with extended spectrum â-lactamases.
   Health Protection Agency June 2004

UK Zoonoses Report: 2003

The sixth annual report on zoonotic infection has recently been published by the Department for Environment Food and Rural Affairs (DEFRA). It combines information from human, food and animal surveillance as well as that from recent research such as the 2003 GB abattoir survey of foodborne pathogens in cattle, sheep and pigs at slaughter. It also describes how zoonotic surveillance is undertaken in the UK. This is an important consideration, as data interpretation requires an insight into how it is obtained and its associated limitations.

It is essentially a reference document for use by those who deal with zoonoses in a professional capacity and also to the non-specialists who wish to get a greater insight as to how zoonotic surveillance is undertaken and the key features of the main zoonoses.

The key points in the sixth report include:

- The continuing fall in reported human cases of campylobacter with 49,050 reports in 2003 compared to the peak of 65,209 reports in 1998. This trend is seen throughout the UK but while the Northern Ireland trends parallel those in GB the incidence rates are substantially less.

- The total number of human reports of salmonella in 2003 (16,343 cases) was similar to that in 2002 (16,319 reports). However there has been an increase in non-PT4 *S. enteritidis.* This increase and a number of outbreaks of non–PT4 *S. enteritidis* associated with eggs and foods containing eggs have been partially associated with a continuing problem with eggs originating in Spain and used in catering.

- The rates of VTEC O157 continue to fall in Scotland from previously high levels and the Scottish incidence rate is now similar to that in Northern Ireland at 3/100,000 population.

- In the GB abattoir survey to determine annual faecal carriage of the main foodborne zoonotic organisms in cattle, sheep and pigs approximately 7700 samples were obtained and the results are tabulated below. VTEC O157 carriage is highest in cattle, salmonella carriage highest in pigs and campylobacter carriage highest in pigs.

Table 2: 2003 GB abattoir survey

Organism	Cattle		Sheep		Pigs	
	%	95% CI	%	95% CI	%	95% CI
VTEC 0157	4.7	3.9 - 5.6	0.7	0.5 - 1.1	0.3	0.06 - 0.5
E Coli 0157	5.2	4.4 - 6.2	1.3	1.0 - 1.8	0.6	0.3 - 1.0
Salmonella sp	1.4	1.0 - 1.9	1.1	0.7 - 1.5	23.4	19.9 - 27.3
Campylobacter sp	54.6	50.7 - 58.4	43.8	40.1 - 47.5	69.3	65.2 - 73.2

The report also notes the declining numbers of reported cases of BSE and the control measures employed to curtail the current outbreak of brucellosis in cattle in Northern Ireland.

The report can be downloaded from the DEFRA website
http://www.defra.gov.uk/animalh/diseases/zoonoses/reports.htm

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 eleventh cohort of fellows is planned, starting in September 2005. The programme invites applications for twelve fellowships for this 24-month training programme in communicable disease field epidemiology.

FELLOWSHIPS

Applicants for the 2005 cohort must be nationals of an EU member country, Switzerland 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 25 participating European countries, Switzerland 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 website at www.epiet.org. Letter of application accompanied by curriculum vitae should be submitted electronically by 31 January 2005 to epietapplications@smi.ki.se

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Positive Blood Cultures: Laboratory Reports, Weeks 1-40

	2004/01-40	2003/01-40
Gram negative bacteria		
Acinetobacter sp	32	31
Aeromonas sp	3	2
Brucella sp	0	1
Campylobacter sp	1	3
Citrobacter sp	15	23
Enterobacter sp	61	59
Escherichia coli	510	489
Haemophilus influenzae	9	15
Haemophilus sp	0	2
Klebsiella sp	110	132
Legionella sp	0	0
Leptospira	0	0
Neisseria meningitidis	3	16
Neisseria sp	0	1
Proteus sp	59	79
Providencia sp	5	5
Pseudomonas aeruginosa	44	56
Pseudomonas sp	43	38
Salmonella sp	8	6
Serratia sp	48	61
Other gram negative bacteria	30	26
Total	**981**	**1045**
Gram positive bacteria		
Corynebacterium sp & Diphtheroids	12	8
Staphylococci:		
S. aureus	436	433
coagulase negative	262	258
Streptococci and enterococci:		
group A	26	28
group B	32	40
group C	9	2
group G	16	10
Enterococcus sp	150	136
α- and non-haemolytic	52	60
S. pneumoniae	103	132
Other gram positive bacteria	30	31
Total	**1128**	**1138**
Anaerobic bacteria		
Anaerobic cocci	3	4
Bacteroides sp	45	42
Clostridium sp	18	25
Other anaerobic bacteria	4	1
Total	**70**	**72**
Grand Total	**2179**	**2255**

Foodborne and Gastrointestinal Tract Infections: Laboratory Reports, Weeks 37-40

	Number of Reports received		Cumulative total	
	04/37-40	03/37-40	04/01-40	03/01-40
Campylobacter	45	68	596	612
C. difficile Toxin	56	91	981	747
C. perfringens	2	1	8	17
E. coli O 157	1	16	9	51
Salmonella total	111	31	358	187
S. enteritidis (PT 4)	5	15 (3)	55 (5)	80 (15)
S. typhimurium (DT 104)	0	5 (1)	138 (80)	40 (10)
Salmonella other	106	11	165	67
Shigella	0	1	8	11
Cryptosporidium	6	9	113	126
Giardia	1	1	12	15
Adenovirus (faeces)	7	19	112	104
Enterovirus (faeces)	1	2	10	24
Rotavirus	9	8	436	547
SRSV	12	2	88	102

Comment:

Salmonella (other than *enteritidis* or *typhimurium*):

S. derby 1
S. newport 49
S. virchow 17
S. sp 39

The following was associated with foreign travel:

Laboratory reports of *C. difficile* Toxin, *Salmonella* and Adenovirus have increased by 31%, 91% and 8% respectively compared with the same period last year. There have been 3 outbreaks of *Salmonella* to date this year namely *S. newport*, *S. typhimurium* and *S. virchow*.

With the exception of those organisms mentioned above, cumulative reports of foodborne and gastro-intestinal tract infections have decreased compared with the same four-week reporting period in 2003.

Contributing Laboratories

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Belvoir Park	Regional Virus
Causeway	Royal Victoria
Craigavon	Tyrone County
Daisyhill	Ulster
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