



Health Protection Report

weekly report

Volume 2 Number 21 Published on: 23 May 2008

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Second UK-wide, community-based infectious intestinal disease study

A community-based study of infectious intestinal disease incidence begins collecting data this month with the aim of determining - at population level and through the investigation of ill-health cases presenting at GP surgeries - the true level of gastrointestinal infection in the UK.

An earlier similar exercise carried out in the 1990s concluded that the true incidence of gastrointestinal infection is over 100 times higher than that recorded by the currently operated routine surveillance schemes [1].

Led by the University of Manchester in collaboration with five other academic institutions, national health protection organisations and the MRC, the Second Study of Infectious Intestinal Disease in the Community (IID2) study is funded by the UK Food Standards Agency (FSA) and will run for approximately 15 months.

Infectious intestinal diseases are common but frequently preventable illnesses. Although symptoms are often mild, the number of people affected makes IID a significant public health problem. The first IID study, carried out on the recommendation of the 1990 Richmond report on the microbiological safety of food [2], concluded that approximately one in five of the population in England suffered from an IID each year (at an estimated cost to employers and the NHS of around £75 million) [3] and that for every case of IID reported to national surveillance there were 136 cases in the community.

Since the first study was completed a number of changes have taken place in the delivery of primary care, health protection and food safety in the UK. For example, the FSA has been established and, since a substantial amount of IID results from the consumption of contaminated food, the Agency's foodborne disease reduction target underpins the new research. The FSA target is to reduce foodborne disease by 20% in five years.

The main aims of the IID2 study are to:

- ▶ estimate prospectively the burden and causes of IID in the population and presenting to General Practitioners in the UK and to compare these results with national surveillance data;
- ▶ estimate the burden of self-reported IID in each UK nation via a telephone survey and to compare these results with the prospective estimate.

The two component studies are being conducted in parallel:

1. the four national telephone surveys; and

2. the prospective study using “future-proof” microbiological techniques comprising: a population cohort study; a study of cases of IID presenting to GPs; a study of routine clinical practice in primary care; and a study to estimate the completeness of reporting to the four national surveillance centres.

The sample size for the IID2 study is sufficient to detect a 20% decline in severe disease (defined as people presenting to primary care) and data will be used to re-calibrate national surveillance data, re-defining the relationship between disease burden in the community and national surveillance data.

Primary diagnostic microbiology for all the General Practices involved across the UK is being performed by the HPA Regional Laboratory in Manchester with further molecular tests being done at the HPA Centre for Infections. Health Protection Units will be provided with copy results in line with normal public health practice and study participants are warned that they might be contacted by an Environmental Health Officer under certain circumstances.

The University of Manchester-led study team for IID2 comprises a national collaboration involving the Medical Research Council General Practice Research Framework, the London School of Hygiene and Tropical Medicine and the Universities of Cardiff, East Anglia, Glasgow and Nottingham [4].

References

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4. Further details of the project can be found on the website www.iid2.org.uk

HPA report on health effects of magnetic resonance imaging

The chairman of the Health Protection Agency, Sir William Stewart this week announced that the Agency's Board had approved in principle the need for an epidemiological study of possible adverse health effects from high static field magnetic resonance imaging (MRI) machines.

Sir William said: "MRI scanning has some undoubted benefits in medicine, especially as an aid to accurate clinical diagnosis. However we need to bear in mind that the magnetic fields produced by the machines are quite substantial and that these fields are increasing in order to achieve improved clarity of image. The exposures to patients and medical staff from the magnetic fields can be high and there is a shortage of information on possible adverse long term health effects. The Agency's Board therefore considers more research is needed in this area."

The announcement follows a report to the Board from the Agency's independent Advisory Group on Non-ionising Radiation (AGNIR) which made a number of recommendations on new areas for research [1]. This followed a thorough examination of the sources of MRI exposure and the scientific evidence for biological effects and health effects. In particular the Chairman of AGNIR, Professor Anthony Swerdlow, said: "There is a pressing need for a well-conducted study of mortality and cancer incidence in workers with high occupational exposures to static magnetic fields, particularly those associated with medical MRI scanners."

The Board also noted that the view that there is a need for more epidemiological research on people exposed to MRI is shared by the World Health Organisation [2]. The WHO points out that an international collaborative study may be the most effective way forward, because it would ensure there are sufficient numbers of exposed cases in the study to draw accurate conclusions. The Agency will now examine the feasibility of such a study with specialists here and abroad, with the aim of launching such a study as soon as possible.

The Agency will be setting up a working group under the chairmanship of Board member Professor Andrew Hall. The Group will undertake a detailed review in order to advise the HPA Board on future research on possible long-term health consequences in people exposed to the static magnetic fields associated with MRI. Emphasis will be placed on identifying appropriate study groups and their exposures, the diseases of potential concern and the feasibility of future epidemiological investigations. The group will report to the HPA Board within one year of commencement of the scoping study.

MRI was first developed 30 years ago as an aid to medical diagnosis. It is based on a well established scientific technique, nuclear magnetic resonance, which uses the interaction of magnetic fields with the spin of the nuclei of atoms to provide detailed information on the constituents of chemicals and biological materials. MRI can provide excellent, detailed images of the body's soft tissue and is an alternative to using x-ray techniques such as computed tomography (CT). MRI does not use ionising radiation and this can be a distinct advantage for examinations of children or for abdominal examinations where radiation doses can be high. However, MRI requires large magnetic fields for successful scanning and hence the need for a study of people who work in the fields. People are exposed to high magnetic fields in industry and elsewhere, but MRI produces the highest magnetic fields in use today, and hence the need for a study of people who regularly work with the machines.

References

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2. World Health Organization (2006). *Environmental Health Criteria* 232. Static Fields. Geneva. ISBN 92 4 157232 9; ISSN 0250-863X.

Confirmed measles cases in England and Wales – an update

Measles continues to be confirmed in all regions of England, and in Wales, but particularly in London. Up to the 16 May, 367 cases had been confirmed (first quarter data on laboratory confirmed cases are reported elsewhere [1]), 146 having onset dates since the end of March.

The London region accounts for the majority of cases this year (257 at 16 May) (figure and table), outbreaks being reported from nurseries, schools, hospitals – including healthcare staff, traveller communities and extended families.

However, three other regions have now also reported recent increases: South West region reported a school outbreak involving 12 cases (aged between one and 26 years) which was linked to an outbreak in London [2]; North West region has confirmed cases in children from an area with low vaccine coverage; and Yorkshire and Humber has also identified nine cases without clear links.

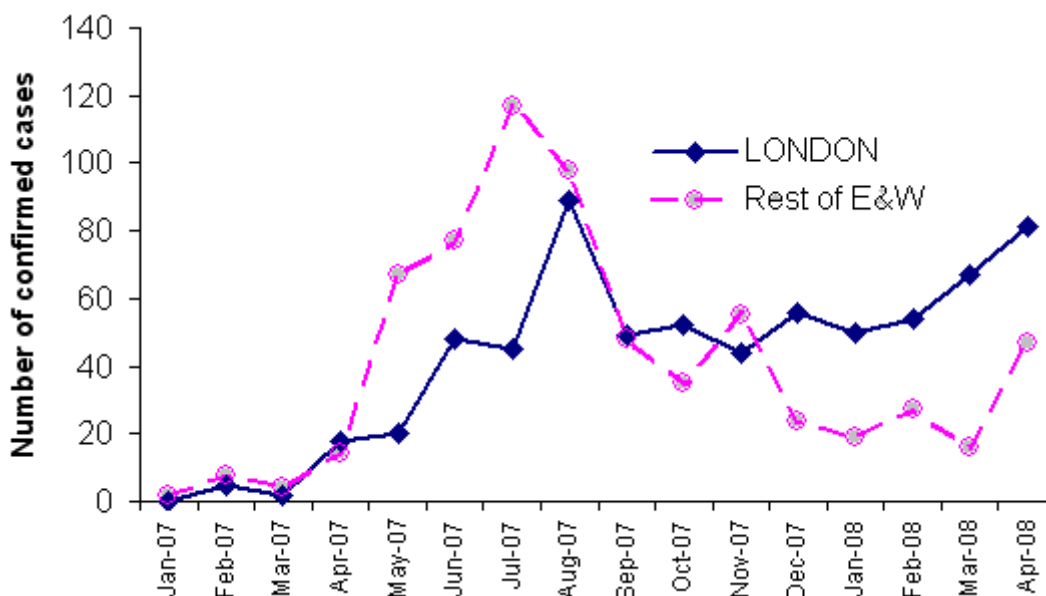
All recent indigenously-acquired cases with a genotype have been shown to be the same D4 sequence (MVs/Enfield.GBR/14.07). This genotype was first identified in April 2007 and is now endemic in the UK.

Cases have been confirmed in all age groups with 35% (127/367) in children under five years of age. National MMR vaccine coverage at two years of age for children born between 2003 and 2006 has ranged from 81 to 85%, although coverage in London is around 10% lower [3].

Table: Confirmed cases of measles by age group and region, England and Wales: Accumulative total for 2008 up to 16 May 2008

Region	Age Group (years)							Total
	<1	1-4	5-9	10-14	15-19	20-24	≥25	
North East	1	3	1	2	-	-	-	7
North West	-	1	2	-	-	-	2	5
Yorkshire & Humber	2	12	9	6	-	-	3	32
East Midlands	-	1	-	-	-	-	2	3
West Midlands	-	3	-	2	-	-	-	5
East of England	1	7	5	2	-	1	5	21
London	29	56	47	55	32	18	20	257
South East	3	3	-	1	4	4	8	23
South West	1	3	5	1	1	-	1	12
Wales	-	1	-	-	-	-	1	2
Total	37	90	69	69	37	23	42	367

Figure: Confirmed cases of measles by month of onset, England and Wales: accumulative total from 2007 up to 30 April 2008



References

1. Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: January to March 2008, *Health Protection Report HPR* [serial online] 2008 [cited 23 May 2008]; **2**(21): News. Available at <http://www.hpa.org.uk/hpr/infections/immunisation.htm>
2. HPA. Outbreak of measles in Cornwall. *Health Protection Report HPR* [serial online] 2008 [cited 20 May 2008]; **2**(18): News. Available at <http://www.hpa.org.uk/hpr/archives/2008/news1808.htm#cornw>
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EBLV-2 in a Daubenton's bat held in captivity for nine months

The case of a wild bat that was cared for by a number of bat handlers over a period of several months before it was diagnosed as infected with European Bat Lyssavirus (EBLV type 2 - 'bat rabies') and euthanised, has been investigated by the HPA.

The bat had been in captivity since August 2007 after being attacked by a cat in a park in Middlesex. After having a wing removed by a vet, the animal had been looked after by a number of bat handlers before appearing at a wildlife show in April 2008 where it started behaving in an abnormal way (snapping at minder's glove and twitching). As a result it was taken to a bat carer in Essex where it remained until its condition deteriorated and it was euthanised on 2 May 2008.

The Veterinary Laboratory Agency reported that the bat was positive for rabies by fluorescent antibody test on 7 May and this was subsequently confirmed by molecular tests as EBLV-2.

A list of handlers who had come into contact with the animal during its captivity was obtained and local Health Protection Units contacted the individuals in their areas. All were asked about other potential contacts before undertaking an assessment as to their level of risk using an EBLV data collection form which enabled information to be collected in a standardised way.

All of the bat handlers had received pre-exposure rabies vaccine, as recommended by the Department of Health [1]. However veterinary staff who had performed the wing amputation were not fully vaccinated, including one who had received needlestick injuries during the procedure.

After individual risk assessments, undertaken by the Rabies Office at the Virus Reference Department, of the man who had originally found the bat (who was unvaccinated), the bat handlers and the veterinary surgeons and staff who had performed the operation, post-exposure vaccination was administered to all concerned.

The bat handler who took the bat to the wildlife show confirmed that no members of the public touched the bat either at that event or a local bat group meeting held earlier in the year.

It is not known how long the bat is likely to have been infective. An investigation by Animal Health concluded that the bat had been kept under such control throughout its captivity that it could not have come into direct contact with other mammals. The local HPU also successfully traced the man who had originally found the bat and he identified the cat involved in the original incident as belonging to his neighbour and confirmed that it was still alive and well.

Prior to this case there have been only six confirmed cases of EBLV2 infection in bats in the UK, all Daubenton's bats (*Myotis daubentonii*), as in this case: one in Newhaven, Sussex, in 1996 [2]; two in Lancashire in 2002 [3] and 2003; one in Surrey in 2004 [4]; one in Oxfordshire in 2006; and one in Shropshire in 2007.

Only four human cases have been reported in Europe since 1977 – one in Finland, two in the former Soviet Union, and one in Scotland in 2002 – despite over 600 cases in bats. All four have been in people who had been in close contact with bats and had not received treatment after their exposure.

The case underlines both the importance of bat handlers being up-to-date with rabies vaccination. In addition, it is important for members of public and veterinary staff coming into contact with bats to report bites/scratches and needlestick injuries.

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Further information

European Bat Lyssavirus - frequently asked questions, HPA website, www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1195733827209?p=1191942176099

Infection reports

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Immunisation

- ▶ **Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: January to March 2008**
- ▶ **Invasive meningococcal infections, England and Wales, laboratory reports: weeks 01-13/08 (01-13/07)**

Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: January to March 2008

First quarter 2008 data presented here include cases confirmed by oral fluid IgM antibody tests, PCR and routine laboratory reports (table 1). Analyses are by date of onset. Regional breakdown figures relate to Government Office Regions rather than regional health authorities (pre-April 2002 definitions).

Quarterly figures for cases confirmed by oral fluid antibody detection only from 1995 and annual total numbers of confirmed cases by health region and age are available from:

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1191942172799?p=1191942172799>

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1191942172913?p=1191942172913>

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1191942172140?p=1191942172140>

Table 1 Total confirmed cases of measles, mumps, and rubella, and oral fluid IgM antibody tests in notified cases: weeks 01-13/2008

c	Cases			Oral fluid IgM antibody results		Results		
	Notified	Tested	%	Total Positive	Recently vaccinated	Oral fluid IgM confirmed	Other lab confirmed	Total Confirmed cases
Measles	970	943	97	189	25	164	57	221
Mumps	1958	1368	70	290	4	286	136	422
Rubella	288	227	79	6	1	5	2	7

Measles

Two hundred and twenty one cases of confirmed measles with onset dates in the first quarter of 2008 were reported, compared to 272 in the last quarter of 2007 [1]. Nationally, the proportion of confirmed measles amongst oral fluid samples tested is around 20%. This is mainly due to the high proportion confirmed in London, currently around 50%, whereas elsewhere the rate is nearer 10%.

In the first quarter 2008, 73% of all cases (162 of 221) were reported in London where there was a continuation of outbreaks that began last year: in North London (42 cases) [2], in South East London hospitals (10 cases), and associated with schools in South East (36 cases) and North West London (16 cases).

Outbreaks in the North East and South East regions were linked to family members in Scotland, where 28 confirmed cases had been reported by 19th March [3]. In addition, a case with links to London was confirmed from Northern Ireland and is the first report from this region since the mid-1990s. Other sporadic cases are still being reported from travelling families around England.

One hundred and sixty-three cases (65%) were in children aged less than 15 years (19 less than one year; 59 aged one to four years; 48 aged five to nine years; and 37 aged 10 to 14 years); the remaining 58 cases were aged over 14 years (15-54 years). Ten cases this quarter reported receiving measles-containing vaccines: one had a single measles vaccine, seven reported having received one MMR vaccine and two reported receiving two doses of MMR.

Cases were reported from all English regions except South West (London 162, Yorkshire and the Humber 18, South East 14, East of England 13, West Midlands four, North East four, North West three and East Midlands two) and one case was reported from Wales. The predominant measles genotype continues to be a D4 strain (MVs/Enfield.GBR/14.07). Thirteen cases in this quarter were confirmed by PCR alone and a further two epidemiologically linked cases (not included in table 1) were identified.

Only four reports had a history of recent travel abroad: one case had recently returned from Germany and another returned from Italy, however neither had a genotype identified. Wild measles virus was detected in the samples from two cases who had travelled to Israel (D4 genotype) and Japan (D5).

Mumps

Four hundred and twenty-two cases of mumps with onset dates in the first quarter of 2008 were confirmed compared to 322 in the last quarter of 2007 [1]. Cases continue to be confirmed predominantly in those aged between 17 and 28 years (67%), known to be at highest risk due either to not having been routinely offered MMR vaccination in childhood, or having only received one dose (table 2).

Table 2 Confirmed cases of mumps by age group and region, England and Wales: weeks 01-13/2008

Region	Age Group (years)							Not known	Total
	<1	1-4	5-9	10-14	15-19	20-24	≥25		
North East	-	2	5	2	21	43	21	1	95
North West	-	1	-	2	44	27	20	-	94
Yorkshire & Humber	-	2	2	1	9	7	16	-	37
East Midlands	-	2	-	1	3	2	6	-	14
West Midlands	-	-	2	-	1	6	2	1	12
East of England	-	3	1	-	4	5	12	-	25
London	-	1	1	1	3	9	12	-	27
South East	-	1	1	2	33	25	23	-	85
South West	-	-	-	-	-	6	7	-	13
Wales	-	1	1	-	1	3	1	-	7
Not known	-	-	-	-	5	3	5	-	13
Total	-	13	13	9	124	136	125	2	422

Rubella

Seven cases of rubella were confirmed in the first quarter of 2008 in comparison to none in the last quarter of 2007 [1]. Five cases were males aged from seven months to 32 years old. The two cases in females were adult foreign nationals studying in UK.

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Invasive meningococcal infections, England and Wales, laboratory reports: weeks 01/08-13/08 (01/07-13/07)

	Method of diagnosis						Cumulative* totals to week to week	
	CSF and blood Culture		Non-culture		Other sites		13/2008	13/2007
	2008	2007	2008	2007	2008	2007		
Group A	1	-	-	-	-	-	1	-
B	148	151	197	220	10	15	355	386
C	5	10	1	5	-	-	6	15
W135	6	6	-	3	-	2	6	11
X	-	-	-	-	-	-	-	-
Y	7	10	-	3	-	-	7	13
Z/29E	2	-	-	-	-	-	2	-
Ungroupable	1	1	-	-	-	-	1	1
Ungrouped	-	1	24	20	1	-	25	21
Total	170	179	222	251	11	17	403	447

*Latex antigen, microscopy, polymerase chain reaction combined Health Protection Agency Centre for Infections data and Meningococcal Reference Unit data.