

Transmit

Health protection service bulletin

November 2010

Foreword

Immunisation matters dominate this issue of *Transmit*, in which we describe the circumstances and actions concerning the measles outbreak that started in mid-September and spread to other unimmunised people in Northern Ireland. As a consequence, the PHA has undertaken considerable work to promote MMR immunisation among children and young people, and raise awareness of measles infection among health professionals.

Although measles has been a very rare infection in Northern Ireland due to our high immunisation uptake rates, this is the second such outbreak this year. Increasing and maintaining high MMR uptake rates is a top priority for the health protection service in the PHA and we have the overall aim of trying to reach the WHO target of 95% coverage.

The Chief Medical Officer has now written to all doctors in Northern Ireland advising them of a change of age from 15 to 13 months for the administration of the first dose of MMR and pneumococcal booster vaccines. The PHA has lead responsibility in terms of implementation and we have recently written to all GP practices concerning this change in age: <http://ebgp.hpssweb.n-i.nhs.uk/index.html>

The childhood immunisation programmes in Northern Ireland are one of our most successful public health interventions, of which primary care professionals in particular should be very proud. However, there is no room for complacency and we must continue to pay close attention to vaccine preventable diseases and encourage the parents of all young children to ensure that their children are fully up to date with their childhood immunisations.



Lorraine Doherty

Dr Lorraine Doherty

Assistant Director of Public Health (Health Protection)

Childhood vaccines and vaccine preventable diseases

Measles outbreak

The most important piece of news in this area is that Northern Ireland is experiencing a measles outbreak. At the time of writing, there have been nine confirmed or highly probable cases. There had been no measles outbreaks in Northern Ireland for well over 10 years, but now there have been two outbreaks in the past 12 months. This demonstrates that there can be no room for complacency in the drive to further improve our uptake rates. We will aim for 95% vaccination uptake rates for both MMR1 and MMR2 as recommended by the WHO.

The current outbreak started in mid-September in someone recently arrived from abroad, who had come to work in a voluntary group for young people.

A second case occurred in one of the other volunteers in late September. Further spread then occurred among the group and the family of the second case. To date, most cases have been in their late teens or early twenties and had not been immunised.

Although, until now, there is only evidence of transmission within the youth organisation and family of the second case, there is the potential for further spread as there have now been associated cases in a secondary school, a primary school, a university and a college.

Action taken

The PHA has written to all young people/parents at the various institutions involved to urge them to ensure they have had the recommended two doses of MMR and to highlight the early symptoms of measles so that people can stay away from school as soon as symptoms develop.

Two press releases have been issued, again emphasising the need for two doses of MMR and highlighting the importance that anyone developing symptoms stays at home.

A letter has also been sent to all GPs in Northern Ireland as well as A&E units and other relevant hospital departments. This contained advice on how to respond to a possible case, as well as highlighting the importance of MMR vaccination.

In addition, measures were put in place to ensure MMR vaccine is available out of hours if it is needed urgently for contacts of cases.



Dealing with a potential measles case

It is not the intention here to go into all the details of dealing with a measles case, but rather to highlight some of the important issues and to explain the importance of seeking expert advice.

The case

- They need to be isolated using 'airborne precautions'. They need to be urgently removed from any area, such as a waiting room, where other people might be exposed. If they phoned in advance, they should not be brought into such a location in the first place and instead promptly assessed in an area set aside for infectious patients.
- The diagnosis needs to be confirmed. A nasal/pharyngeal swab should be taken and sent to the virology laboratory. Details on how to do this have been sent to all GPs and A&E departments.

Contacts

- They need to be identified and their level of risk assessed as quickly as possible. Those who are particularly susceptible to measles, such as the immunocompromised, pregnant women and babies under six months, may need to be given immunoglobulin urgently. Others may need to be given MMR vaccine. All of this needs to be discussed with public health, who should be contacted at an early stage.

It is hoped that these actions, together with the relatively high uptake of MMR vaccine, will bring this outbreak under control reasonably quickly. However, with such a highly infectious disease, we cannot be sure and only time will tell. We will keep you updated in future editions of *Transmit*.

Vaccinations

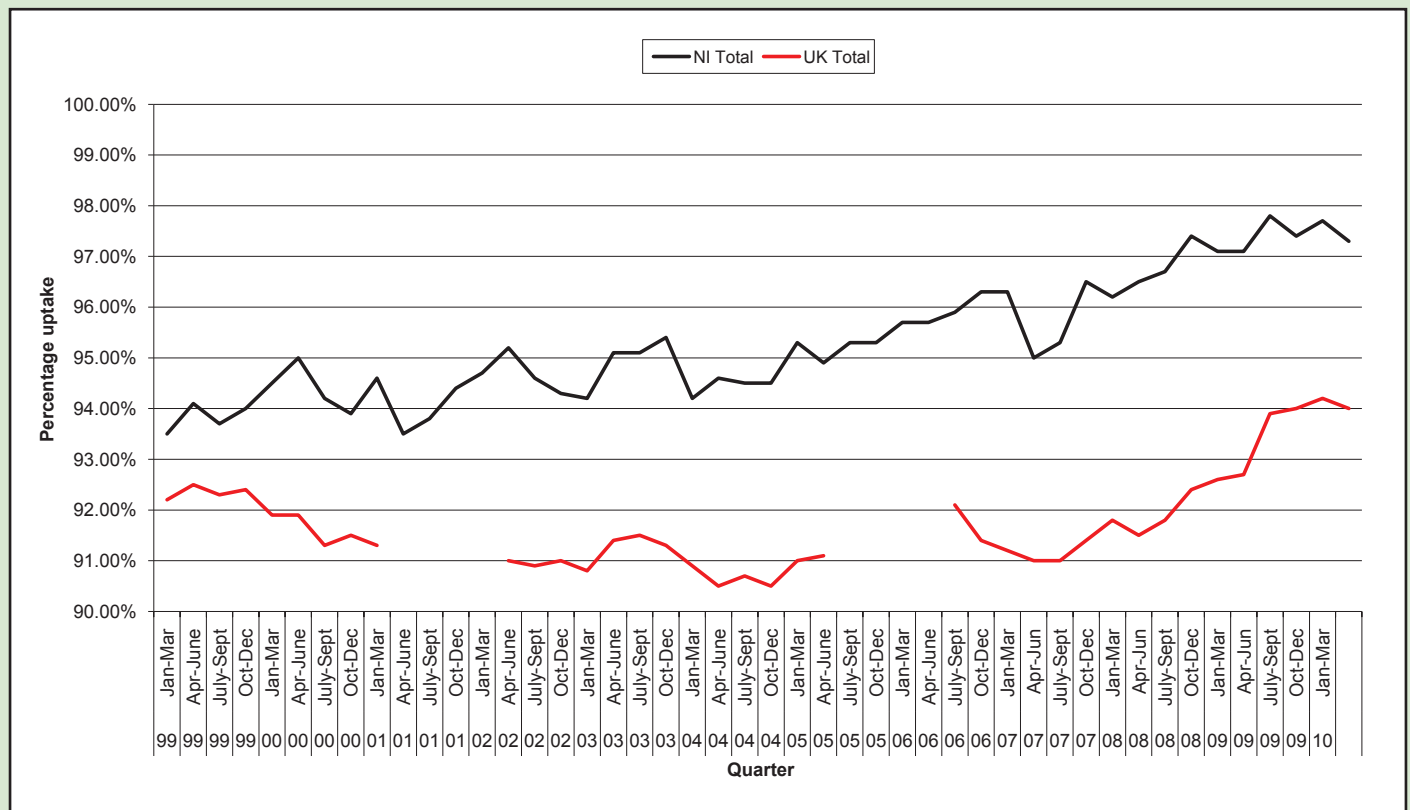
Vaccination coverage statistics (COVER/Korner Programme) are now available for the second quarter of 2010. They show that Northern Ireland uptake rates remain at very high levels and are virtually the same as for the first quarter. Some figures are up slightly, others are down slightly, but the changes are mostly less than one percentage point.

Table 1 and Figure 1 show vaccination uptake at 12 months of age. There has been a slight decline of about 0.5 percentage points but these slight quarter to quarter variations are common, as can be seen in Figure 1, which also shows that we remain at a historically high level. (In Figure 1, polio uptake is used as a proxy for all vaccines in this age group, as uptake rates for all vaccines are virtually identical.)

Table 1: Completed primary immunisations by 12 months of age, April–June 2010, Northern Ireland

Area	% coverage at 12 months			
	No of children in cohort	DTaP/IPV/Hib3	MenC2	PCV2
Eastern	2,291	96.30%	96.20%	96.60%
Northern	1,523	97.20%	97.20%	97.40%
Southern	1,408	98.50%	98.50%	98.30%
Western	1,004	98.10%	98.10%	97.80%
NI total	6,226	97.30%	97.30%	97.30%

Figure 1: Polio vaccination uptake rates at 12 months, NI and UK, 1999–2010

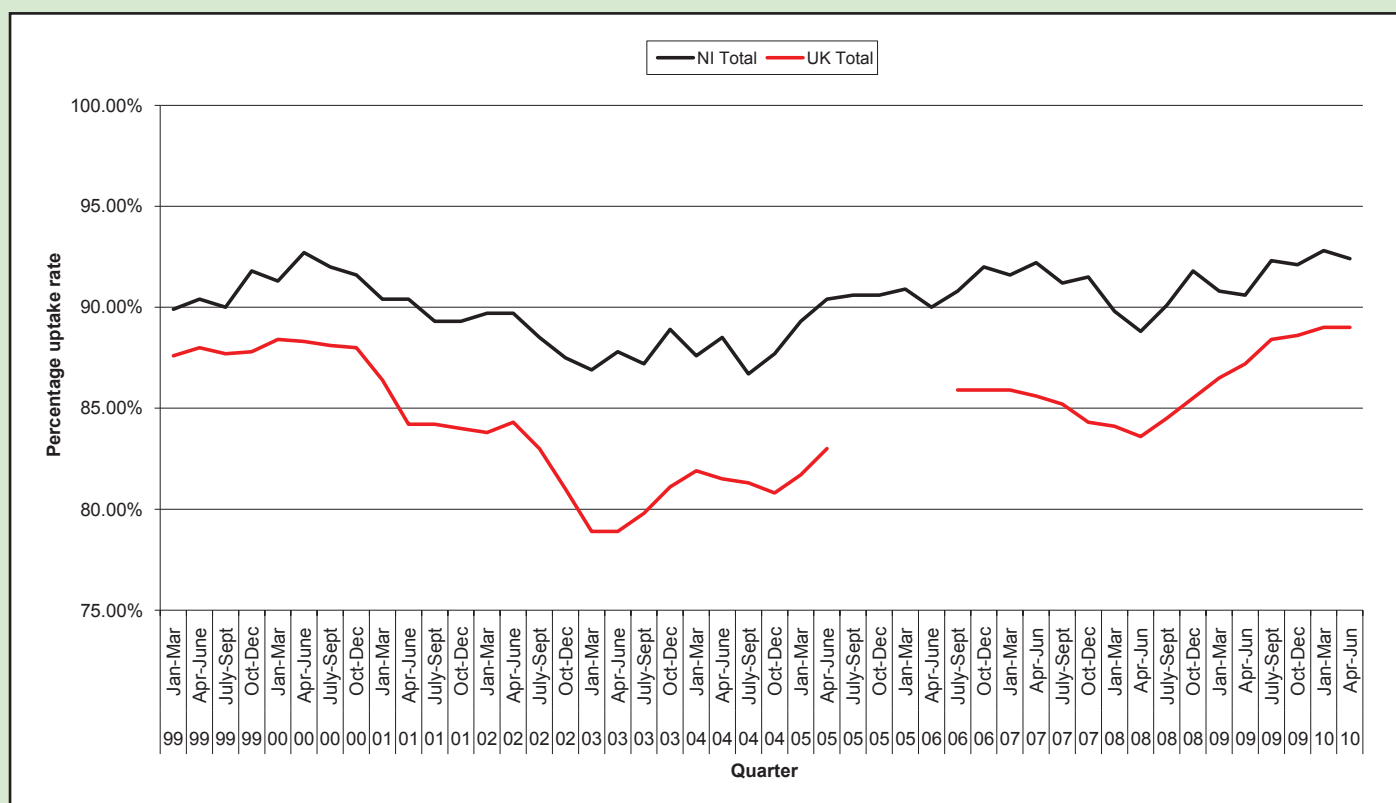


At two years of age, uptake rates have risen slightly for DTaP/IPV/Hib3 (third Pediacel), meningococcal group C and the PCV booster, but have fallen slightly for MMR (Table 2). Figure 2 shows that in spite of this slight fall for MMR, we remain at a very high level.

Table 2: Completed primary immunisations by 24 months of age, April–June 2010, Northern Ireland

Area	% coverage at 24 months					
	No of children in cohort	DTaP/IPV/Hib3	Infant MenC	PCV Booster	Hib/MenC	MMR1
Eastern	2,279	98.90%	97.10%	91.60%	94.10%	89.80%
Northern	1,593	99.10%	97.90%	93.70%	96.30%	93.00%
Southern	1,338	98.90%	97.20%	94.80%	96.60%	94.50%
Western	1,024	98.90%	97.80%	94.40%	97.10%	94.60%
NI total	6,234	99.00%	97.40%	93.30%	95.70%	92.40%

Figure 2: MMR vaccination uptake rates at 24 months, NI and UK, 1999–2010



Northern Ireland remains well above the UK average at both 12 and 24 months (Table 3).

Table 3: Completed primary immunisations, by 12 and 24 months of age, April–June 2010, in the UK

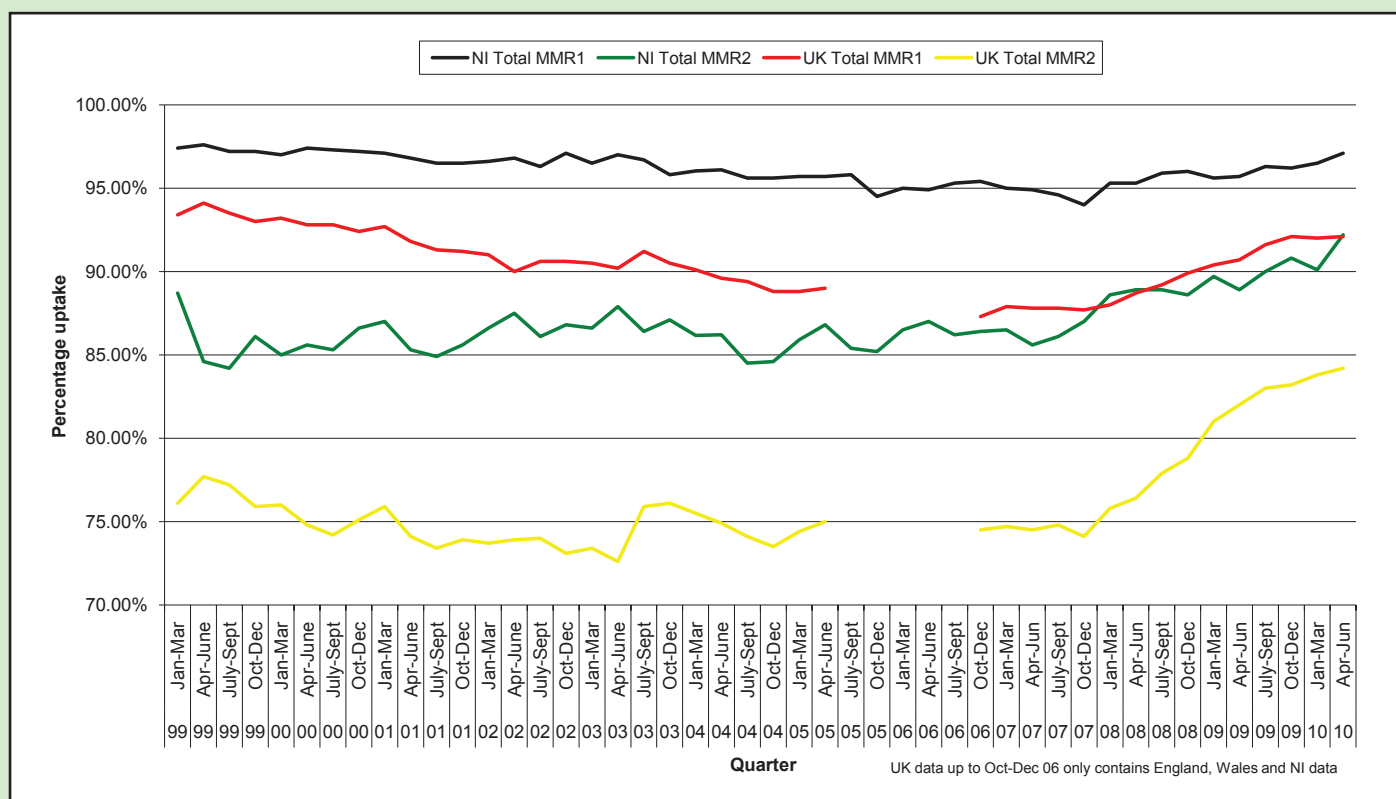
Country	% coverage at 12 months				% coverage at 24 months			
	DTaP/IPV/Hib3	MenC	PCV2	DTap/IPV/Hib3	Infant MenC	PCV Booster	Hib/MenC	MMR1
England	93.50%	92.90%	93.00%	95.50%	94.60%	88.30%	90.90%	88.30%
Scotland	97.00%	96.80%	97.10%	98.60%	96.50%	94.00%	93.90%	93.40%
Wales	95.70%	95.40%	95.50%	97.40%	96.20%	91.10%	93.60%	92.10%
Northern Ireland	97.30%	97.30%	97.30%	99.00%	97.40%	93.30%	95.70%	92.40%
UK	94.00%	93.40%	93.60%	95.60%	94.90%	89.00%	91.40%	89.00%

The uptake figures for children aged five years are encouraging in that they show increases for all vaccines. Of particular note is the increase for both doses of MMR vaccine, with the second dose uptake going up by over two percentage points.

Table 4: Completed primary immunisations and boosters by five years of age, April–June 2010, Northern Ireland and UK

Area	% coverage at five years of age					
	DTP/Pol3	Hib3	MenC	MMR1	MMR2	DTaP/IPV
Eastern	97.30%	93.90%	94.90%	96.40%	89.90%	91.80%
Northern	97.80%	95.20%	96.60%	96.90%	92.80%	95.00%
Southern	98.70%	95.60%	95.10%	97.70%	93.40%	95.20%
Western	99.20%	95.50%	95.70%	98.10%	94.80%	95.80%
NI total	98.10%	94.90%	95.50%	97.10%	92.20%	94.00%
England	94.50%	94.10%	93.20%	91.40%	83.30%	85.60%
Scotland	98.50%	97.80%	98.00%	96.10%	89.30%	91.70%
Wales	96.80%	96.40%	95.10%	94.10%	87.00%	90.40%
UK	95.00%	94.50%	93.70%	92.10%	84.20%	86.60%

Figure 3: MMR vaccination uptake rates at five years, NI and UK, 1999–2010



Vaccine preventable diseases

As outlined in the second issue of *Transmit*, there are three routine sources of information regarding childhood vaccine preventable diseases:

- statutory notifications based on clinical diagnosis;
- salivary antibody tests to confirm a clinical diagnosis;
- laboratory reports.

Data for the second quarter of 2010 are shown in Tables 5–7.

Table 5: Notifications of vaccine preventable infectious diseases, Northern Ireland*

Disease	Quarter 2 weeks 14-26 2010	Quarter 2 weeks 14-26 2009	Quarter 2 weeks 14-26 2008	Cumulative total to week 26 2010	Cumulative total to week 26 2009	Cumulative total to week 26 2008
Diphtheria	0	0	1	0	0	1
Measles	9	18	9	26	29	13
Mumps	53	215	26	145	298	60
Polio	0	0	0	0	0	0
Rubella	2	4	7	7	11	14
Tetanus	0	0	0	0	0	0
Whooping cough	7	6	5	11	12	9

*Data provisional

Table 6: Laboratory reports of vaccine preventable infectious diseases, Northern Ireland*

Disease	Quarter 2 weeks 14-26 2010	Quarter 2 weeks 14-26 2009	Quarter 2 weeks 14-26 2008	Culmulative total to week 26 2010
Diphtheria	0	0	1	0
Measles**	0	1	2	7
Mumps**	1	30	3	9
Polio	0	0	0	0
Rubella**	0	1	0	1
Tetanus	0	0	0	0
Whooping cough	0	4	5	4

*Data provisional

**Serologically confirmed by RVL

Table 7: Salivary antibody testing results, second quarter of 2010, Northern Ireland*

	Area	Notifications	Salivary test completed	Confirmed case	Not confirmed
Measles	Northern	4	4	0	4
	Southern	3	1	0	1
	Eastern	1	1	0	1
	Western	1	1	0	1
	Total	9	7	0	7
Mumps	Northern	9	4	0	4
	Southern	12	5	0	5
	Eastern	21	12	3	9
	Western	11	4	0	4
	Total	53	25	3	22
Rubella	Northern	0	0	0	0
	Southern	0	0	0	0
	Eastern	1	1	0	1
	Western	1	0	0	0
	Total	2	1	0	1

*Data provisional

**Notification data to week 26

The measles outbreak described earlier occurred after quarter two and is therefore not reflected in these figures.

The main point of note is that the mumps outbreak that has been ongoing since 2009 seems to be less widespread than before. Table 5 shows that the number of notifications is significantly lower than for the same quarter in 2009 and is also down on the first quarter of 2010. This is further confirmed in Table 6, which shows much fewer laboratory reports, and in Table 7, which shows that of those tested, a much smaller percentage were positive (12% in quarter two compared with 35% in quarter one).

There were no confirmed cases of measles, rubella or whooping cough in quarter two.

Gastrointestinal infections

Gastrointestinal infection (infectious intestinal disease) affects as many as one in five of the population each year. Symptoms of gastrointestinal infection, which are not necessarily confined to diarrhoea and vomiting, are caused by the organisms themselves or by the toxins they produce. Viral infection has become a prominent feature of outbreaks, with norovirus being the principal cause within the adult population.

The usual incubation period for norovirus is 24 to 48 hours and the most common clinical features are vomiting, diarrhoea and fever. The human gastrointestinal tract is the usual reservoir of infection. Infectivity lasts for 48 hours after resolution of symptoms. The infective dose is extremely low.

Transmission usually occurs from person to person by the faecal oral route. However, aerosols of projectile vomit also play a part in transmission of infection. This can lead to environmental contamination, especially of toilet areas. Contaminated food and water, especially bivalve molluscs, are sometimes a source.

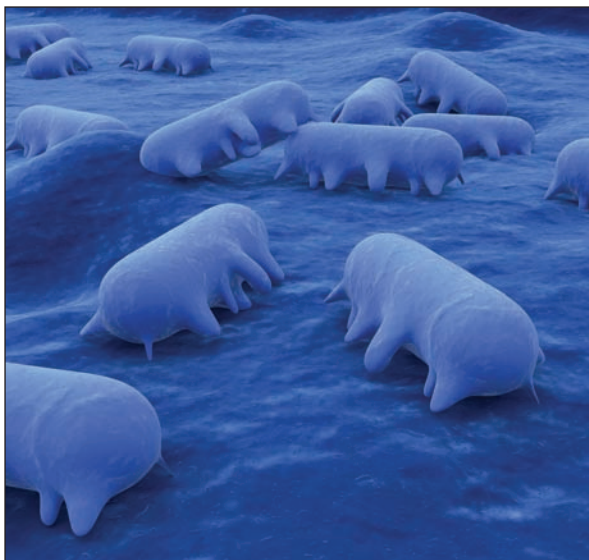
Food-borne and gastrointestinal outbreaks: January–March 2010

Viral or suspect viral infections were thought to be the main cause of outbreaks of gastroenteritis reported during the first quarter of 2010. There was one food-borne outbreak during this period.

A total of 144 non-food-borne outbreaks of gastrointestinal illness were reported, affecting at least 1,121 people. Eighty outbreaks occurred in hospitals and 64 in nursing/residential homes.

Table 8: General outbreaks of food-borne and other gastrointestinal illness reported to the PHA, January–March 2010 (provisional)

Food-borne outbreaks					
Area	Location	Organism	Suspect vehicle	Number ill	Number positive
Northern	Other	Viral	Food-borne (followed by person to person transmission)	20	n/a
Other gastrointestinal outbreaks					
Area	Number of outbreaks reported	Location	Organism*	Number ill	Number positive
Eastern	41	Hospital	Norovirus	211	114
	3	Hospital	Nil identified	3+	n/a
	3	Hospital	<i>C. difficile</i>	13	11
	7	Residential institution	Norovirus	74	19
	18	Residential institution	Nil identified	143	n/a
Northern	9	Hospital	Norovirus	41	27
	1	Hospital	Nil identified	10	n/a
	9	Residential institution	Norovirus	153	34
	3	Residential institution	Nil identified	46	n/a
Southern	12	Hospital	Norovirus	40+	32
	10	Residential institution	Norovirus	155	26
	7	Residential institution	Nil identified	42	n/a
Western	7	Hospital	Norovirus	41	24
	1	Hospital	Norovirus and <i>C. difficile</i>	5+	4 Norovirus, 2 <i>C. difficile</i>
	2	Hospital	Nil identified	5	n/a
	1	Hospital	<i>C. difficile</i>	4	4
	4	Residential institution	Norovirus	60	16
	5	Residential institution	Nil identified	75+	n/a
	1	Residential institution	<i>C. difficile</i>	n/a	3



Salmonella infections

Salmonella is a common occurring bacteria that is often present in the gastrointestinal tract of wild and domestic animals, birds (especially poultry), reptiles, amphibians (eg terrapins) and occasionally humans.

Transmission is predominantly from foodstuffs (most commonly red and white meats, raw eggs, milk and dairy products) following contamination of cooked food by raw food, or by failing to achieve adequate cooking temperatures. Occasionally, person to person spread occurs, usually during the acute diarrhoeal phase of the illness, by close contact with a case. Transmission can also occur through contact with infected animals, and it is worth noting that they may not necessarily show signs of illness.

Salmonella and reptiles

Since 2006, there have been five reports in Northern Ireland of human salmonella infection associated with reptiles. Of concern, four of these cases were in infants less than 12 months of age. The reptiles included lizards, boa constrictors and other snakes. The salmonella serotypes were: *S. kintambo*, *S. typhimurium* DT191, *S. arizonae* and *S. newport*.

Most reptiles carry salmonella in their gut without showing signs of infection and shed the bacteria in their droppings. These droppings can quickly spread over the reptile's skin, and any surface or object that the reptile comes into contact with can then be contaminated with salmonella, including cages, toys, furniture and household surfaces. Some reptile foods such as frozen or defrosted mice, rats and chicks can also contain salmonella and be a potential source of infection for both the reptile and its owners.



Children are particularly at risk because they like to handle and stroke pet reptiles. As a result, their hands and fingers can become contaminated. Babies and small children may be infected by their parents who have handled a reptile and then not washed their hands before feeding or touching the child.

The Health Protection Agency has produced a leaflet on reducing the risks of acquiring salmonella from reptiles: www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1259152367287

Outbreak of *Salmonella enterica Paratyphi B* variation Java

An outbreak of *Salmonella enterica Paratyphi B* variation Java has been identified, with cases being reported throughout the UK. The Public Health Agency is contributing to this UK-wide investigation. Infection with this salmonella serotype is often associated with a more severe clinical presentation than other salmonella infections. It causes gastroenteritis in humans through the consumption of contaminated food, but it can also be invasive, producing typhoid-like clinical symptoms.

The initial results of a case control study found a significant association between eating salad leaves at a take-away and consuming mixed salad leaves at home. The source of the salad leaves/salad remains unclear.

Cases are distributed across England, with a predominance of cases in the east of England, London and the south east. Three of the cases are from Northern Ireland.

The highest age specific incidence rate of laboratory reported *E. coli* O 157 infection in 2009 was in the under five years age group.

Duty room queries

Hand, foot and mouth disease (HFMD)

Coxsackie viruses are enteroviruses that cause a range of clinical syndromes, including hand, foot and mouth disease (HFMD).

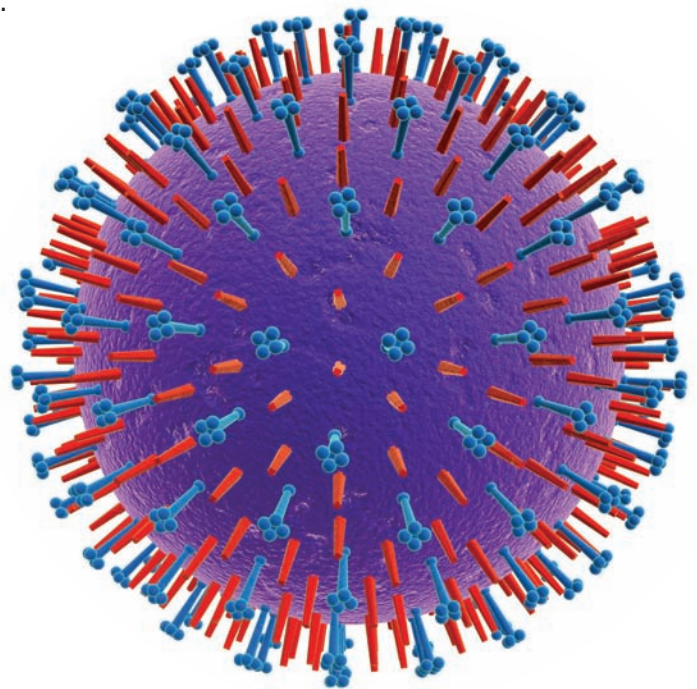
The duty room has received a number of calls relating to clusters of infection among children attending day care centres. HFMD is usually a mild illness, with ulcers in the mouth and a maculopapular or vesicular rash on the hands, feet and buttocks. Spread within child care settings is commonly by direct contact with faeces, blisters and respiratory droplets. The incubation period is three to five days and the child will be infectious during the acute illness and while excreting the virus in the faeces.

There is no specific treatment and it is usually a self-limiting infection. Children should be excluded from day care settings until they are clinically well. To help reduce the spread of infection, greater attention to both personal and environmental hygiene should be emphasised.

Seasonal flu vaccine and egg allergy

A number of practices have contacted the duty room for advice regarding seasonal flu vaccine and patients with documented egg allergy.

The trivalent seasonal flu vaccine should not be given to individuals with a confirmed anaphylactic hypersensitivity to egg products. Celvapan is, however, grown in mammalian cells and does not contain egg. It therefore can be administered to those with confirmed anaphylactic hypersensitivity to egg products. However, it only protects against the influenza A (H1N1) virus and not other circulating influenza viruses, unlike the seasonal flu vaccine.



PPV: adults aged 65 years and over

A single dose of PPV is recommended for this age group and individuals who have previously received 12- or 14-valent PPV or PCV should be immunised with the 23-valent vaccine to gain additional protection.

Antibody levels are likely to decline rapidly in individuals with no spleen, splenic dysfunction or chronic renal disease. Re-immunisation every five years with 23-valent PPV is recommended for this high risk group.

Change of age from 15 to 13 months for administration of first dose of MMR and pneumococcal booster vaccines.

The Chief Medical Officer wrote to all doctors regarding this change to the childhood vaccination schedule, which took place on 1 November. Bringing forward to 13 months the MMR1 and pneumococcal booster vaccinations means that the vaccination schedule in Northern Ireland is now consistent with the rest of the UK.

In the context of an increase in measles cases in recent weeks, this change will also mean that infants will be offered protection two months earlier than previously and this is an important benefit: www.dhsspsni.gov.uk/index/phealth/professional/cmo_communications/letters-and-urgent-communications-2010.htm

Travel advice and the Hajj

The Health Protection Agency has reminded UK travellers going to Mecca for the annual Hajj pilgrimage in mid-November to seek medical advice before starting their journey. The Hajj is the largest annual international gathering of its kind, with more than two million Muslims travelling from around the world and approximately 25,000 expected to travel from the UK.

In addition to general travel health advice and ensuring all routine vaccinations are up to date, the Saudi Arabia Ministry of Health recommends seasonal influenza vaccination and requires proof of vaccination against meningitis strains A, C, W135 and Y (this is a visa requirement): www.nathnac.org/travel/factsheets/Hajj_Umrah.htm#vacc

Contact details for health protection issues

Public health protection duty room
Mon–Fri, 9.00am–5.00pm
Tel: 028 9055 3994 or 028 9055 3997
Email: pha.dutyroom@hscni.net

Outside office hours, contact ambulance control on 028 9040 4045 and ask for the first on-call public health doctor.

Further information for health professionals and other agencies:

Health protection duty room
Public Health Agency
4th Floor
12–22 Linenhall Street
Belfast
BT2 8BS

Tel: 028 9055 3994 or 028 9055 3997
Email: pha.dutyroom@hscni.net

