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CURRENT NOTES

Update on *E. coli* O104 outbreaks

45/4201 The European Commission has amended the list of certain seeds, sprouted seeds, and beans prohibited from import to the European Union from Egypt.

In July the European Commission announced an emergency ban on the import of fenugreek and certain seeds, sprouted seeds and beans imported from Egypt until 31 October 2011, following the two outbreaks of *Escherichia coli* O104 in Germany and France.

Fresh and chilled peas and beans have now been taken off the list. The European Commission reassessed the risk from these products following an audit by officials of production sites in Egypt. The Food Standards Agency (FSA) has written to port health officials to inform them of these changes. The letter and revised list of affected products can be accessed at http://www.food.gov.uk/multimedia/pdfs/2011662eulettercpho.pdf.

The temporary ban was introduced following the European Food Safety Authority's (EFSA) report into the possible source of the outbreaks in Germany and France, which made more than 3000 people ill. The EFSA report concluded that a batch of fenugreek seeds originally supplied from a company in Egypt to a distributor in Germany is the most likely link between the two outbreaks. [FSA Press Release, 11 October 2011. http://www.food.gov.uk/news/newsarchive/2011/oct/ecolio104update]

Reducing infections among people who inject drugs

45/4202 In new guidance published on 12 October, EU agencies ECDC and the EMCDDA have joined forces to identify seven interventions to reduce and prevent infectious diseases in this vulnerable population. Many European countries have achieved substantial progress in recent years in preventing drug-related infections. Drug injecting, however, remains a major cause of infectious diseases across Europe.

In their guidance report, *Prevention and control of infectious diseases among people who inject drugs* (available at both http://www.emcdda.europa.eu/publications/ecdc-emcdda-guidelines and http://ecdc.europa.eu/en/publications/Publications/Forms/ECDC_DispForm.aspx?ID=757), the agencies explore good public health practices that can support effective policies to reduce infections. Common blood-borne viruses in this group include HIV, hepatitis B and hepatitis C. These are mainly spread through the sharing of needles, syringes and drug preparation equipment or unprotected sexual contacts. Launching the report during a meeting of infectious disease experts in Lisbon, the two agencies aim to support countries across Europe in their efforts to reduce infection risks.

The ECDC-EMCDDA joint publication is published together with a 'Guidance in brief' summary and with two technical reports providing a full assessment of the evidence. [Source: EMCDDA Press Release, 12 October 2011. http://www.emcdda.europa.eu/news/2011/5]

A framework for the guidance and review of part of the evidence concerning needle and syringe programmes and other services was produced under contract ECDC/10/2246 by Eva van Velzen and Sharon Hutchinson (University of Strathclyde/Health Protection Scotland); Norah Palmateer, Kirsty Roy, Alex Sánchez-Vivar, David Goldberg (Health Protection Scotland); Matt Hickman (University of Bristol); Avril Taylor (University of West of Scotland); Jennifer Kelly and John Campbell (Glasgow Addiction Services); and Vivian Hope (London School of Hygiene and Tropical Medicine). An additional review of the evidence regarding drug treatment was produced under EMCDDA contract CC.10.RES.011 by Georgie MacArthur and Matt Hickman (University of Bristol).

Dalgety Bay radioactive particle find

45/4203 The Scottish Environment Protection Agency (SEPA) has uncovered some high activity radioactive sources from Dalgety Bay beach which are giving cause for concern.

Over the weekend (8-9 October), SEPA scientists continued to investigate an area of the foreshore of Dalgety Bay. Further sources were found and an initial reading of activity in one of these sources gave sufficient concern for SEPA to ask Fife Council to restrict access to the area. The council cordoned off an area of the foreshore close to the public footpath and temporarily erected further

warning signs on Wednesday 12 October. SEPA has since continued its monitoring and retrieval of radioactive particles from Dalgety Bay beach and recovered more than 60 particles over the subsequent weekend. The total number of particles that have been recovered since the start of this monitoring program is around 200.

SEPA has now removed the material of concern and is analysing the activity of the source to gain a better understanding of the potential risk to human health. SEPA has shared its findings with partner agencies including the Health Protection Agency and NHS Fife.

Radioactive material was first detected on a part of the foreshore at Dalgety Bay in 1990. It is thought that the contamination originates from the residue of radium-coated instrument panels from military aircraft incinerated and land filled in the area at the end of World War II. Monitoring has been undertaken by both SEPA and the Ministry of Defence and radioactive material has been removed periodically.

SEPA argues that it is now urgent that an appropriate long term remediation plan is developed which may require SEPA to designate an area of the foreshore at Dalgety Bay as Radioactive Contaminated Land. SEPA will be meeting with the Scottish Government and the Ministry of Defence on October 24, with a meeting of the Dalgety Bay Forum taking place on November 22.

Further information on the background of Dalgety Bay is available at http://www.sepa.org.uk/about_us/news/other/dalgety_bay.aspx. [Source: SEPA News Releases, 13 & 17 October 2011. http://www.sepa.org.uk/about_us/news.aspx]

Guidance on the management of the public health risks from fish pedicures

45/4204 A multi-agency working group including Health Protection Scotland, the Health Protection Agency, the Health & Safety Laboratory and local authorities has produced *Guidance on the Management of the Public Health Risks from Fish Pedicures*.

The guidance comes as a result of a number of enquiries to the HPA, HPS and other bodies from local environmental health practitioners and has been endorsed by the Royal Environmental Health Institute of Scotland and the Chartered Institute of Environmental Health.

The risk of infection associated with *Garra rufa* fish pedicures is likely to be very low, and there have been no reports in Scotland of cases of infection caused by people having had fish pedicures. Fish tank water has been shown to contain a number of microorganisms. Therefore, in a fish spa setting, there is the potential for transmission of a range of infections, either from fish to person (during the nibbling process), water to person (from the bacteria that can multiply in water), or person to person (via water, surrounding surfaces and fish). However, the overall risk of infection is likely to be very low, if appropriate standards of hygiene are adhered to.

The fish spa working group concluded that those with weakened immune systems or underlying medical conditions, including diabetes and psoriasis, are likely to be at increased risk of infection, and so fish pedicures are not recommended for such individuals. The working group advise that operators of fish spas should not promote treatment to these groups.

The guidance aims to provide easily accessible advice based on evidence, or expert consensus where this is lacking, on the potential public health risks from fish pedicures, and the practical measures that should be taken to mitigate these. It includes a sample local authority checklist to assist local inspection officers in assessing premises which offer this service.

The full guidance document is available at http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317131044395.

Carbon monoxide poisoning in the UK

45/4205 On 11 October, the Gas Safety Trust published the *Carbon Monoxide Hotspot Report 2011*, which contains the figures of gas-related carbon monoxide (CO) incidents gained from media report gathering throughout the UK.

The report indicates that, in the 12-month period between 1 July 2010 and 30 June 2011, there were 50-recorded incidents involving CO poisoning. Of the 105 people involved in these incidents, there were 25 fatalities and 80 injuries without fatal consequences - over three times as many fatalities as were reported in 2010.

The report reveals that the public are still at risk from CO poisoning in rented accommodation at home and abroad, as both domestic landlords and holiday providers are failing to provide adequate safety certificates. It also suggests that medical professionals are failing to diagnose symptoms correctly. Data for 2011 shows that when people exhibiting symptoms associated with CO poisoning sought medical help, only 1% were tested for this possibility.

The trust is calling for UK householders to be more aware of the dangers of CO and warns that, despite the dramatic rise in recorded incidents, the real figures could actually be much higher. [Source: Gas Safety Trust Press Release, 11 October 2011. http://www.gas-safety-trust.org.uk/report-reveals-fatalities-carbon-monoxide-poisoning-have-tripled]

Erratum: The *Respiratory bacteria quarterly report quarter two: 1 April to 30 June 2011* which appeared in issue no.35 (31 August 2011) stated that 'Thus far, serogroups have been determinable for 39 cases (55.7%) reported in 2011, **39** being infected with serogroup B and two with serogroup Y.' This should have read: 'Thus far, serogroups have been determinable for 39 cases (55.7%) reported in 2011, **37** being infected with serogroup B and two with serogroup Y.' All electronic versions of the report have now been corrected.

Legionellosis in Scotland in 2009 and 2010

Prepared by: Alison Potts[1], Katy Sinka[1], John Love[1], Martin Donaghy[1], Eisin McDonald[1], Fiona Johnston[1], Oliver Blatchford[1], Diane Lindsay[2], Alistair Brown[2], and Giles Edwards[2]

Introduction

Legionellosis is associated with two clinically and epidemiologically distinct illnesses:

- Legionnaires' disease (characterised by fever, myalgia, cough, and pneumonia);
- Pontiac fever (a milder illness without pneumonia).

Legionnaires' disease is an uncommon and potentially fatal form of pneumonia caused by *Legionella* bacteria. *Legionella* bacteria are distributed widely in both natural and artificial water supplies. In most cases, disease is caused by the inhalation of water containing *Legionella*. Sources include showers, air conditioning cooling towers, humidifiers, whirlpool spas and fountains.

Legionella are fastidious gram-negative bacilli. They grow best in warm water (25-45ºC) which is stagnant and are associated with bio-film and amoebae. However, *Legionella* have been found to survive in temperatures ranging from 6ºC to 60ºC.

The majority of cases of legionellosis are caused by *Legionella pneumophila*. There are 16 recognised serogroups of *L. pneumophila*, of which serogroup 1 (Sg1) is the most common. In addition there are over 50 other species of *Legionella* that have been shown to cause human disease. There is evidence of previous exposure to *Legionella* species in a high proportion of the population, as determined in seroprevalence studies in blood-donor blood. However, evidence of previous exposure to *L. pneumophila* Sg1 is more uncommon.

The incidence of legionellosis in Scotland is low, and there are usually between 20 and 40 cases per year, the majority of which are contracted overseas. Older age and male gender are both associated with increased risk, as is smoking and underlying respiratory disease.

Legionellosis surveillance in Scotland

Health Protection Scotland has undertaken enhanced surveillance of *Legionella* infections in conjunction with the Scottish Haemophilus, Legionella, Meningococcus and Pneumococcus Reference Laboratory (SHLMPRL). The purpose of this enhanced surveillance is to characterise the *Legionella* species and identify likely sources of infection.

In April 2009, the former Scottish Legionella Reference laboratory merged with the Scottish Meningococcal Pneumococcal Reference laboratory to become the Scottish Haemophilus, Legionella, Meningococcus and Pneumococcus Reference Laboratory (SHLMPRL).

The majority of cases of legionellosis are detected in hospitalised patients. Patient samples may be tested locally, but are not confirmed as positive until tested and confirmed at the reference laboratory. Once cases are confirmed, the NHS board where the patient is being treated is requested to complete an enhanced surveillance report form. This collects demographic data, information on clinical presentation and risk factors for each patient, and detailed information on travel away from home during the incubation period of the illness (2-10 days prior to onset of symptoms). All cases suspected to be travel-related are immediately reported to ELDSNet.

HPS publishes two-yearly summaries of legionellosis in Scotland. Readers are referred to previous reports for more detailed information about past years.[1] This report provides an update on cases of legionellosis in Scotland to the end of December 2010.

Legionnaires' disease surveillance in Europe

Only the severe form of legionellosis, Legionnaires' disease, is monitored at a European level. This monitoring is administered by the European Centre for Disease Control (ECDC), through the European Legionnaires' Disease Surveillance Network (ELDSNet).[2,3]

Legionnaires' disease is monitored in two ways:

1. annual submission of datasets of all Legionnaires' disease cases in member states;[4,5]
2. immediate reporting of travel-related cases of Legionnaires' disease as they are diagnosed by member states.[6] This aims to improve knowledge and information on the epidemiological and microbiological (both clinical and environmental) aspects of Legionnaires' disease, to locate sources of infection and to prevent further cases of infection.

ECDC provides case definitions for Legionnaires' disease, which all member states use. In local outbreaks these definitions may be modified to be more inclusive, allowing more rapid identification of an infection source. For the purposes of routine surveillance and reporting to ECDC, HPS and SHLMPRL use the following definitions (taken from ECDC).[7]

A confirmed case of Legionnaires' disease must have clinically defined pneumonia and at least one of the following three laboratory criteria:

- isolation of *Legionella* species from respiratory secretions or any normally sterile site;
- detection of *Legionella pneumophila* antigen in urine;
- *Legionella pneumophila* serogroup 1 specific antibody response.

Probable cases of Legionnaires' disease must have clinically defined pneumonia and at least one of the following laboratory criteria:

- detection of *Legionella pneumophila* antigen in respiratory secretions or lung tissue;
- detection of *Legionella* species nucleic acid in a clinical specimen;

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- specific antibody response to *Legionella pneumophila* non-serogroup 1 or other *Legionella* species;
- Single high titre of specific antibody for *Legionella pneumophila* serogroup 1, other *Legionella pneumophila* serogroups or other *Legionella* species.

Cases are linked epidemiologically if at least one of the following criteria are met:

- environmental exposure;
- exposure to the same common source.

The case definition detailed above is the latest version available on the ELDSNet web pages, taken from the Commission Decision of 28 April 2008, when ECDC case definitions were reviewed and revised.[7] This differs from the case definitions in the current Health Protection Guidance,[8] which incorporates the old ECDC case definitions. This update in definitions reflects changes to laboratory methods for detection of *Legionella* bacteria. HPS and SHLMPRL use the revised ECDC definitions for normal surveillance activities.

Descriptive Epidemiology

Characteristics of cases

The number of SHLMPRL-confirmed cases of legionellosis diagnosed in Scotland between 1995 and 2010 is shown in Figure 1. In 2009 there were 25 cases, of which 23 were confirmed and two were probable cases, and in 2010 there were 16 cases, of which 14 were confirmed and two were probable. In 2010 there were an additional two cases of legionellosis in Scottish residents that were diagnosed and treated overseas - these are not included in the data in this report.

The annual incidence rate of legionellosis in Scotland was 4.8 cases per million population in 2009 and 3.4 in 2010. This incidence remains relatively low when compared to the rest of Europe, which had an average incidence of 11.8 per million population for the period 2007-08[4] and 11.2 per million population in 2009.[5]

FIGURE 1: Enhanced surveillance of legionellosis in Scotland: Annual total of cases reported to HPS 1995-2010

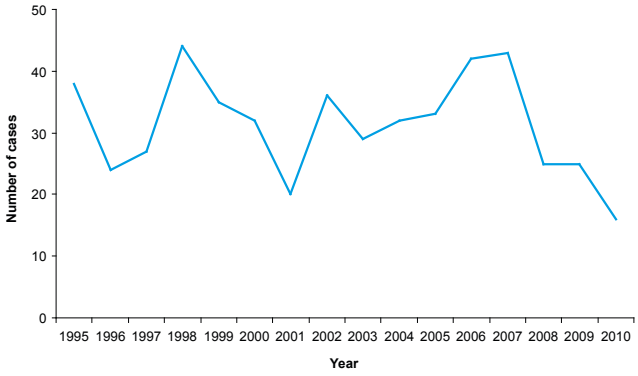
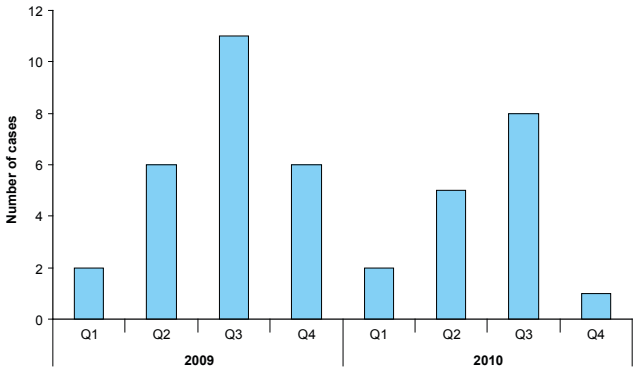


FIGURE 2: Number of cases of legionellosis in Scotland by quarters, in 2009-2010



Cases of legionellosis were diagnosed in all quarters in 2009 and 2010, with the highest numbers of cases diagnosed in quarter 3 (July to September) in both years, see Figure 2. This is in line with patterns at a European level where the largest number of cases is diagnosed in August or September.[4,5]

Table 1 shows the breakdown by sex of cases in Scotland from 1995 to 2010. In 2009, 68% of cases were male and in 2010 50% of cases were male. The general pattern of higher incidence amongst males is typical for Legionnaires' disease, with on average twice as many male cases in Scotland than female cases. In Europe in 2009, 72.6% of cases were male and 27.4% were female.[5]

TABLE 1: Cases of legionellosis reported by SHLMPRL to HPS 1995 to 2010

Year	Cases	Male cases	Percentage male	Female cases	Percentage female
2010	16	8	50.0%	8	50.0%
2009	25	17	68.0%	8	32.0%
2008	25	16	64.0%	9	36.0%
2007	43	28	65.1%	15	34.9%
2006	42	32	76.2%	10	23.8%
2005	33	18	54.5%	15	45.5%
2004	32	23	71.9%	9	28.1%
2003	29	17	58.6%	12	41.4%
2002	36	24	66.7%	12	33.3%
2001	20	14	70.0%	6	30.0%
2000	32	22	68.8%	10	31.3%
1999	35	26	74.3%	9	25.7%
1998	44	34	77.3%	10	22.7%
1997	27	12	44.4%	15	55.6%
1996	24	18	75.0%	6	25.0%
1995	38	32	84.2%	6	15.8%

Legionellosis is more common in older age groups. Figure 3 shows the age band distribution of cases in the years 1995-2010. In 2009 all cases were older than 40 years and in 2010 more than 90% of cases were in those older than 40 years. During 2009 and 2010, the most common age range of cases was 60-69 years (16 cases, 39%). Figure 4 compares numbers of cases in each age band for 2001-02, 2003-04, 2005-06, 2007-08 and 2009-10.

FIGURE 3: Cases of *Legionella* reported to HPS by age group, 1995-2010

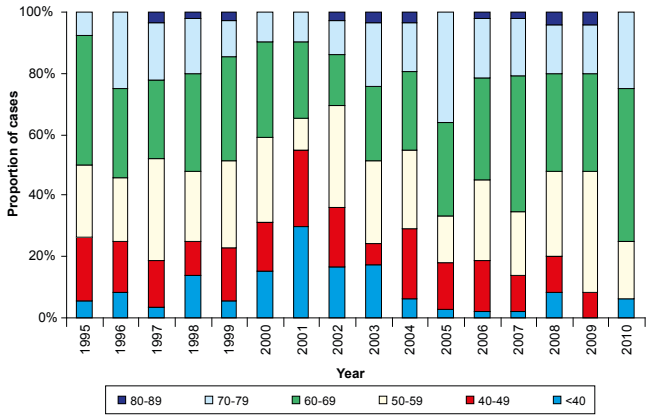
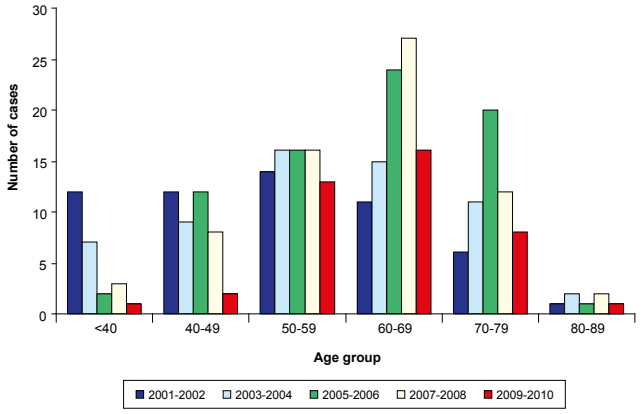


FIGURE 4: Cases of Legionellosis reported to HPS by age group, two-year periods 2001-2010



Smoking and lung disease are known risk factors for legionellosis. For the cases in 2009 and 2010, 54% were smokers, 27% did not smoke and for 19% of cases smoking status was not known or not recorded. This compares to 44% smokers in 2007-08 (35% not smokers, 21% smoking status not known or not recorded).

Immunocompromised individuals have increased risk of infection with a variety of pathogens. For the cases in 2009 and 2010, 20% were immunocompromised, 75% were not immunocompromised and for 5% this was not known or not recorded. This compares to 24% immunocompromised in 2007-08 (63% not immunocompromised and 13% not known or not recorded).

Clinical presentation

All of the reported cases in 2009 and 2010 were Legionnaires' disease, with no cases of Pontiac fever diagnosed. In 2009, 24 cases presented with pneumonia (96%) and in 2010, 14 cases presented with pneumonia (87%). Other clinical symptoms for these cases included fever, shortness of breath, cough, headache, muscle pain, lethargy, confusion, nausea, vomiting, diarrhoea and collapse.

TABLE 2: Number of deaths caused by *Legionella* in Scotland reported to HPS 1995 to 2010

Year	Deaths
2010	0
2009	3
2008	6
2007	1
2006	3
2005	1
2004	4
2003	2
2002	2
2001	2
2000	3
1999	3
1998	3
1997	3
1996	4
1995	3

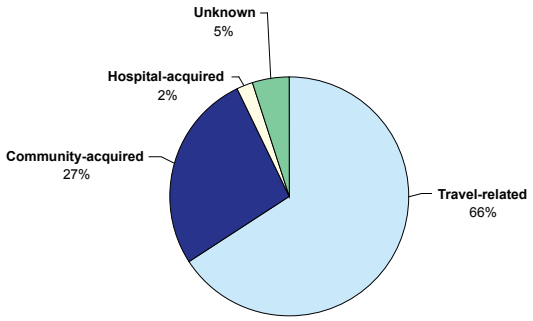
Mortality

There were three recorded deaths among cases of legionellosis reported in 2009 and none in 2010 (Table 2). Mortality data captured through this surveillance scheme does not infer *Legionella* infection as the cause of death recorded on the death certificate. For 2009 and 2010 the mean case fatality rate was 7.3%. This is lower than the rate seen in Scotland for 2007-08 (10.3%) but similar to the rate seen previously in 2004-06 (7.5%). However, the small number of deaths makes case fatality rates subject to large annual variation and are therefore difficult to interpret.

Suspected source of infection

Of the 41 cases reported in 2009 and 2010 the majority (66%) were travel-related; 27% were community-acquired; 2% were hospital-acquired; and 5% were of unknown origin. This distribution is shown in Figure 5, which shows an increase in the number of community-acquired cases from the previous reporting period 2007-08 (75% travel-related, 15% community-acquired; 1% hospital-acquired, 9% unknown origin).

FIGURE 5: Likely source of *Legionella* infection reported to HPS, 2009-2010



Travel-associated cases

The countries associated with travel-acquired cases are listed in Table 3. For 2009 and 2010 travel to Spain, Greece and travel within the UK (including Scotland) accounted for the most travel-related cases.

TABLE 3: *Legionella* cases associated with travel (within UK or abroad) 2004-2010

Country	2004	2005	2006	2007	2008	2009	2010
Spain	3	11	11	6	6	4	1
Italy	4	4	3	7	2	0	0
UK	3	2	1	8	2	2	2
France	1	1	3	1	0	1	1
Bulgaria	1	0	3	1	0	1	0
Greece	0	1	3	2	0	0	3
Malayasia	0	0	3	0	0	0	0
Austria	1	0	1	1	0	0	0
Channel Islands	0	0	2	0	0	0	0
Cruise ship	0	0	2	1	1	0	0
Dominican Republic	1	0	1	0	0	0	0
Turkey	0	1	1	1	2	1	1
United Arab Emirates	1	1	0	1	0	0	0
Portugal	0	0	0	3	0	1	0
Egypt	0	0	0	1	0	1	1
USA	0	0	0	0	0	0	2
Malta	0	0	0	1	1	1	0
Other	1	3	2	2	3	3	1

In 2009, 15 travel-related cases were reported to EWGLI (European Working Group for *Legionella* Infections now replaced by ELDSNet). Five have been attributed to clusters – that is where travellers from different places are suspected to have contracted legionellosis from the same source accommodation in a two-year period. In 2010, of the 12 cases reported to EWGLI, eight cases were linked with six different clusters, with two cases attributed to each of two of these clusters.

Community-acquired cases

Of the 11 community-acquired cases in 2009 and 2010 only two cases had strongly suspected specific sources based on environmental testing. One case with case *L. pneumoniae* Sg1 subtype Philadelphia had the same strain isolated from their home hot water tap. One case with *Legionella longbeachae* had the same strain isolated from branded, bagged potting compost that they had been using. These cases and related cases where a source was suspected but typing could not be fully confirmed are discussed in the laboratory section of this report. Cooling towers were not suspected in any of the community acquired cases. Due to the widespread and ubiquitous environmental distribution of *Legionella* bacteria, a specific source for most sporadic cases of community-acquired disease is never identified.

HPS was not informed of any Scottish outbreaks of epidemiologically linked cases of Legionnaires' disease or Pontiac fever in 2009 and 2010.

Hospital-acquired cases

Only one case of hospital-acquired legionellosis was reported in 2009 and 2010. For this case, water sampling of the ward identified *L. pneumoniae* Sg1 strain Olda and this was confirmed in the patient. This is discussed in more detail below.

Cases of legionellosis described in travellers to Scotland

In 2009-10 there was one Scottish case of legionellosis associated with travel within Scotland (this case is included in the data for this report). We are not aware of any cases of legionellosis in visitors to Scotland in 2009 and 2010, whose suspected source of infection was Scottish accommodation.

SHLMPRL testing for legionellosis in 2009 and 2010

A total of 2,941 specimens for the diagnosis of legionellosis were submitted to SHLMPRL in 2009, a decrease of 23% on 2008. In 2010, 2,700 specimens were submitted, a decrease of 8% on 2009 (Table 4). This drop in specimen numbers is largely due to a decrease in the numbers of sera being submitted and an increase in the number of sending laboratories performing urinary antigen assays on site. However, SHLMPRL would encourage all laboratories to send any positive samples for confirmation before reporting to local public health departments.

Characteristics of laboratory confirmed cases of *Legionella* infection

In 2009 and 2010, 32 (44%) of all positive samples were confirmed by urinary antigen test, 15 (21%) by PCR, 12 (17%) by sero-conversion, six (8%) by single high antibody titre and seven (10%) by culture isolation (Table 5). A total of seven cultured isolates were obtained from human illness in 2009 and 2010. Of these, five were confirmed as *L. pneumophila Sg*1 and two as *L. longbeachae* Sg1. The breakdown of *L. pneumophila* Sg1 isolates by monoclonal subtype was Philadelphia (two), Benidorm (two) and Allentown/France (one).

Environmental samples

A total of 73 environmental cultures were received in 2009 and 39 in 2010. This compares with 168, 252, 90, 183 and 207 in years 2008, 2007, 2006, 2005 and 2004 respectively. The species, serotypes and subtypes are shown in Table 6. *L. pneumophila* Sg1 was the most common serotype confirmed with 48 of 112 (43%). Of these, the most common monoclonal subtype was Philadelphia (17; 35%). Of the other *L. pneumophila* serogroups Sg4 (5%), Sg6 (13%) and Sg14 (5%)

TABLE 4: Distribution and nature of requests submitted to SHLMPRL from 2009 to 2010

NHS board	Serology		Urinary		Culture & PCR		Total		% Change on Previous year	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Ayrshire & Arran	93	75	0	1	0	0	93	76	-74%	-18%
Borders	66	56	59	60	2	0	127	116	-64%	-9%
Dumfries&Galloway	73	41	1	3	0	2	74	46	-32%	-38%
Fife	37	26	28	24	1	3	66	53	-267%	-20%
Forth Valley	82	115	63	76	36	62	181	253	-17%	40%
Grampian	3	20	1	4	0	1	4	25	25%	525%
Greater Glasgow & Clyde	259	277	791	936	106	111	1156	1324	-12%	15%
Highland	92	96	186	187	0	0	278	283	18%	2%
Lanarkshire	178	157	145	136	20	37	343	330	-84%	-4%
Lothian	52	17	557	85	1	2	610	104	13%	-83%
Orkney	0	0	0	0	0	0	0	0		
Shetland	0	0	0	0	0	0	0	0		
Tayside	6	83	1	1	0	2	7	86	-14%	1129%
Western Isles	1	1	1	3	0	0	2	4	-50%	100%
TOTAL	**942**	**964**	**1833**	**1516**	**166**	**220**	**2941**	**2700**	**-23%**	**-8%**

TABLE 5: Main diagnostic techniques employed by species and serogroup 2009-2010

Organism	Isolation	Seroconversion	Single High Titre	Urinary antigen	PCR	Total#
L. pneumophila serogroup 1	5	10	5	32		52
L. pneumophila					12	12
L. longbeachae serogroup 1	2	2			2	6
L. anisa			1		1	2
TOTAL	**7**	**12**	**6**	**32**	**15**	**72**

More than one test may have been positive in each case

TABLE 6: Identity of cultures examined by SHLMPRL from 2009-2010

Species	Serogroup	Subgroup	Human		Environmental		Total Isolates	
			2009	2010	2009	2010	2009	2010
L. pneumophila	1	Allentown/France	1				1	
		Benidorm	1	1	4		5	1
		Philadelphia	2	1	14	3	16	4
		Heysham			10	1	10	1
		Olda			8	8	8	8
	4				4	2	4	2
	5				1	3	1	3
	6				9	6	9	6
	7					1		1
	8				1		1	
	14					6		6
L. longbeachae	1			1	3		3	1
L. feelei					1	1	1	1
L. rubrilucens						1		1
L. anisa/bozemanii					18	7	18	7
TOTAL			**4**	**3**	**73**	**39**	**77**	**42**

were the most frequently found in the environment. *L. anisa* and *L. bozemanii* accounted for the second most commonly isolated *Legionella* species at 22%.

All patient and related environmental isolates of *L. pneumophila* are routinely genotyped using Sequence Based Typing (SBT). One patient isolate and an isolate from the water supply in the patient's home were typed and both found to be identical (*L. pneumophila* Sg1 Philadelphia subtype 37). Two further unrelated urinary antigen positive cases (which were *L. pneumophila* Sg1 but no further typing could be done) had *L. pneumophila* Sg1 Philadelphia subtype 37 isolated from their home water supply.

Each year the lab participates in external quality assurance schemes for SBT, detection of *Legionella* DNA in respiratory samples by PCR, detection *Legionella* uninary antigen and isolation of *Legionella* species from environmental water samples. The lab continues to preform satisfactorily in all four schemes.

New developments in testing

Currently, a 16sRNA PCR ELISA is used as the screening PCR for the identification of *L. pneumophila* and *Legionella* species in respiratory secretions. Any positives by PCR are further genotyped using a nested SBT typing method that allows the classification of a sequence type from DNA extracted from a patient sample. This enables genotyping in culture negative cases that are positive by urinary antigen and/or serology. There has been an increase in PCR positives (21%) compared to culture alone (10%) (Table 5).

Nested SBT was utilised in a case linked to an outbreak in Wales in 2010. One patient was urinary antigen positive, PCR positive but culture negative. A nested SBT was performed on DNA from sputum and *L. pneumophila* Sg1 subtype 62 was identified. On further environmental testing of an associated hotel, an isolate from the water was found to be a *L. pneumophila* Sg1 subtype 62.

Similarly a urinary antigen positive, culture negative nosocomial case was identified as *L. pneumophila* Sg1 subtype 1 by nested SBT that was indistinguishable to an isolate of *L. pneumophila* Sg1 Olda subtype 1 isolated from the water supply in the patient's hospital room.

SHLMPRL would encourage all sending laboratories to forward all respiratory samples from urinary antigen and serology positive cases for further typing.

L. longbeachae in potting compost in 2008, 2009 and 2010

SHLMPRL routinely types all *Legionella* species using macrophage infectivity potentiator (*mip*) speciation. The resultant sequence has allowed all *Legionella* to be identified to species level which complements and enhances serotyping results. In 2008 and 2009 there was an increase in cases of *L. longbeachae* infection in Scotland which was reported in *Eurosurveillance* and received considerable media attention.[9]

In the years 2009-10, three unrelated community-acquired cases of Legionnaires' disease were identified who were all keen gardeners and had been working with different brands of bagged compost prior to onset of disease. Two of these cases were culture positive for *L. longbeachae* Sg1. In two of these cases, *L. longbeachae* Sg1 was isolated from the associated compost. When the strains were compared by Amplified Length Polymorphism (AFLP), in one case the patient isolate was linked to the isolate in the compost they had been working with prior to becoming ill. As compost is commonly used, but *L. longbeachae* infection seemingly rare, further work is required to ascertain the prevalence and predictors of *L. longbeachae* in compost and the conditions which facilitate transmission and generate an aerosol of the bacteria.

Most cases of legionellosis are diagnosed by urinary antigen test that is *L. pneumophila* specific and does not detect infection with *L. longbeachae*. We would encourage clinicians in cases of community-acquired pneumonia with a history of gardening and compost exposure, to send serum and respiratory samples to SHLMPRL for analysis.

New developments

European Legionnaires' disease surveillance

European surveillance of travel-acquired Legionnaires' Disease was co-ordinated by EWGLI (European Working Group for *Legionella* Infections), and administered by HPA, Colindale, London on behalf of ECDC up to March 2010. In April 2010 ECDC assumed direct control of the management of this surveillance and this was renamed ELDSNet (European Legionnaires' Disease Surveillance Network). More details of this scheme can be found on their website.[2]

Guidance on the management of *Legionella* outbreaks and clusters

Scottish guidance on *Legionella* outbreak management was produced by the Health Protection Network in March 2009 and is available on the HPN website.[8] This evidence-based guidance is aimed at professionals of the wider health protection community in Scotland, considering issues around initial management response; epidemiological investigations; environmental investigations; sampling; risk assessment; communication; reporting and control. Following outbreaks of legionellosis in Scotland 2011, this guidance will undergo review in 2012.

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Notifiable diseases

Part 2 (Notifiable Diseases, Organisms and Health Risk States) of the Public Health etc.(Scotland) Act came into effect on 1 January 2010 and sets out new duties for registered medical practitioners, NHS boards and directors of diagnostic laboratories. GP practices should familiarise themselves with the Scottish Government guidance on the new notification requirements at: http://www.scotland.gov.uk/Topics/Health/NHS-Scotland/publicact/Implementation/Timetable3333.

Registered medical practitioners report notifiable diseases based on 'clinical suspicion'. As such, notifications may not be subject to laboratory report confirmation. The published figures will record therefore how many diseases have been clinically suspected.

Patient notifications can, however, be reclassified. When, for example, a suspected (and notified) tuberculosis case is subsequently reported as negative by a laboratory (and found not to be a health protection risk) it would subsequently be removed from the disease totals.

Diseases to be notified by registered medical practitioners with effect from 1 January 2010:

Notifiable Diseases which come into effect on 1 January 2010

*Anthrax	*Meningococcal disease	*Severe Acute Respiratory Syndrome (SARS)
*Botulism	Mumps	*Smallpox
Brucellosis	*Necrotising fasciitis	Tetanus
*Cholera	*Paratyphoid	Tuberculosis (respiratory or non-respiratory) (**see Note 2**)
*Clinical syndrome due to *E. coli* O157 infection (**see note 1**)	*Pertussis (Whooping Cough)	*Tularemia
*Diphtheria	*Plague	*Typhoid
*Haemolytic Uraemic Syndrome (HUS)	*Poliomyelitis	*Viral haemorrhagic fevers
*Haemophilus influenzae Type b (Hib)	*Rabies	*West Nile fever
*Measles	Rubella	Yellow Fever

It is recommended that those diseases above marked with an * require urgent notification, i.e. within the same working day.

Note 1: *Escherichia coli* O157

Clinical suspicion should be aroused by (i) likely infectious bloody diarrhoea or (ii) acute onset non-bloody diarrhoea with a biologically plausible exposure and no alternative explanation. Examples of biologically plausible exposures include:

- contact with farm animals, their faeces or environment;
- drinking privately supplied or raw water;
- eating foods such as undercooked burgers or unpasteurised dairy products;
- contact with a confirmed or suspected case of VTEC infection.

Further guidance is available at: http://www.hps.scot.nhs.uk/giz/e.coli0157.aspx.

Where a case is notified as HUS (Haemolytic Uraemic Syndrome) it should NOT also be notified as 'Clinical syndrome due to *E. coli* O157 infection'.

Note 2: Tuberculosis

For the purposes of notification, respiratory TB or non-respiratory TB should be taken to have the same meanings as the World Health Organisation definitions of **pulmonary TB** and **non-pulmonary TB** respectively:

Pulmonary TB is tuberculosis of the lung parenchyma and/or the tracheobronchial tree.

Non-pulmonary TB is tuberculosis of any other site.

Where tuberculosis is clinically diagnosed in both pulmonary and non-pulmonary sites, this should be treated as pulmonary TB.

Registered medical practitioners have been advised to contact their local NHS Board Health Protection Team for advice should they have any doubts about the diagnosis of suspected cases.

Non-notifiable diseases

Registered medical practitioners are no longer required to notify the diseases listed below.

- Bacillary dysentery
- Chickenpox
- Food poisoning
- Scarlet fever
- Viral hepatitis

These diseases are now covered by a list of notifiable organisms details of which will be reported by laboratories to health protection teams.

Statutory Notification of Infectious Diseases
Week ended 7 October 2011

A *National Statistics* release

Infectious Disease	Current week	Previous week	Current week last year	Total from first week of year	
				2010	2011
Anthrax	-	-	-	38	-
Botulism	-	-	-	-	-
Brucellosis	-	-	-	-	1
Cholera	-	1	-	2	3
Clinical Syndrome *E.coli* 0157	-	-	-	37	2
Diphtheria	-	-	-	-	-
Haemolytic Uraemic Syndrome (HUS)	-	1	-	2	3
Haemophilus Influenzae Type B (Hib)	-	-	-	2	3
Measles	-	1	2	77	74
Meningococcal Infection	2	1	-	61	84
Mumps	3	5	4	583	522
Necrotizing Fasciitis	-	-	-	2	10
Paratyphoid Fever	1	-	1	1	1
Pertussis	4	1	1	30	55
Plague	-	-	-	-	-
Poliomyelitis	-	-	-	-	-
Rabies	-	-	-	-	-
Rubella	-	-	-	32	15
Severe Acute Respiratory Syndrome (SARS)	-	-	-	-	-
Smallpox	-	-	-	-	-
Tetanus	-	-	-	-	-
Tuberculosis: Respiratory	9	5	3	263	224
Tuberculosis: Non-respiratory	8	3	5	155	116
Tularemia	-	-	-	-	-
Typhoid Fever	-	-	-	5	3
Viral Haemorrhagic Fevers	-	-	-	-	-
West Nile Fever	-	-	-	-	-
Yellow Fever	-	-	-	-	-
TOTAL	**27**	**18**	**16**	**1290**	**1116**

Amendments:Add 1 Meningococcal (wk 36); 1 Mumps (wk 37); 1 Pertussis (wk 39); 1 Tuberculosis: non-respiratory (wk 38)

Source: Health Protection Scotland, NHS National Services Scotland

NHS BOARD ABBREVIATIONS

AA Ayrshire & Arran	GG Greater Glasgow & Clyde	LN Lanarkshire	SH Shetland	TY Tayside
BR Borders	FF Fife	GR Grampian	LO Lothian	WI Western Isles
DG Dumfries & Galloway	FV Forth Valley	HG Highland	OR Orkney	