



# Health Protection Report

weekly report

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## Seasonal flu levels increasing in the UK

Influenza activity is increasing and levels of consultation for influenza like illness in primary care have now exceeded base line thresholds in England. The rise in the number of reported cases in the community has been accompanied by reports of patients with serious illness requiring hospitalisation and numerous outbreaks of flu in schools across the country. The HPA Weekly National Influenza Report [1] provides a regular situation report on flu and flu-like illness in the UK.

The headline influenza indicators reported in the 16 December edition [2] are:

- in week 49 (ending 12 December), the weekly influenza/influenza-like illness (ILI) consultation rate increased to above baseline levels in England (34.6 per 100,000);
- reports of severe illness due to influenza infection including ICU/ECMO (intensive care unit/extracorporeal membrane oxygenation) admissions and the number of influenza-associated deaths increased in the last few weeks (since week 36, 17 deaths associated with influenza infection have been reported);
- influenza A H1N1 (2009) and B are the predominant circulating viruses. The virus strains circulating are well matched to the current influenza vaccine and very little antiviral resistance has been detected;
- fifty-seven acute respiratory disease outbreaks were reported in the UK in week 49, 55 schools, one care home and one hospital;
- eighty-four of 149 (56.4%) specimens from patients with ILI presenting to sentinel GPs in England in week 49, were reported as positive for influenza.

Following the increase in the level of seasonal influenza circulating in the UK reported last week, the Department of Health issued guidance on the use of antiviral drugs for the management of those influenza patients in England who are at high risk of developing complications from flu [3]. The Department is also encouraging those in at-risk groups to be vaccinated and has written to PCTs/SHAs suggesting that GP practices should actively invite those in at-risk groups to visit surgeries to be vaccinated [4]. The Chief Medical Officer has also issued an update on appropriate guidelines for the treatment and management of patients with influenza in secondary care and other settings [5]. Updated guidance on the pharmacological treatment and prophylaxis of influenza has just been published on the HPA website [6]. The HPA has reiterated that, although not life-threatening for most people, seasonal flu can be far more dangerous for those in “at-risk” groups: people aged 65 and over, and people aged under 65 in clinical risk groups which includes all pregnant women.

## References

1. The HPA Weekly National Influenza Report is published weekly (Thursday afternoons) throughout the flu season presenting information relating to flu and flu-like illness reports. Available from the HPA website at:  
<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/EpidemiologicalData/02influsweeklyreport/>.
2. [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1287146386672](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1287146386672).
3. DH, 10 December, 2010. Letter from the Director of Immunisation stating that, in line with the National Institute of Clinical Excellence (NICE) guidance, the use of antiviral drugs for the prevention or treatment of influenza is now recommended:  
[www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH\\_122572](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH_122572).
4. DH, 15 December, 2010. Letter from the Director of Immunisation to SHA immunisation leads encouraging them to increase uptake of the seasonal flu vaccination, especially in low-uptake areas:  
[www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH\\_122722](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH_122722).

5. DH, 14 December, 2010. Letter from the CMO on appropriate guidelines for the treatment and management of patients with influenza in secondary care and other settings. [www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH\\_122682](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH_122682).

6. HPA. Pharmacological treatment and prophylaxis of influenza. Available at: [www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1287146938304](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1287146938304).

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## British Standard on legionella risk assessments

The British Standards Institution has published a new standard on the assessment of risk of contamination of building water systems by legionella bacteria, providing guidance, for those directly or indirectly involved in their management, on how to comply with the legal risk assessment requirement and therefore, indirectly, to comply with the broader requirements of health safety legislation.

*BS 8580:2010. Water quality – risk assessments for legionella control – code of practice* [1], supplements the existing British Standard on sampling (*BS 7592 Sampling for legionella bacteria in water systems*) and the Health and Safety Executive Approved Code of Practice, known as L8 [2], that describes the statutory duties – including for risk assessment – arising out of the Management of Health and Safety at Work Regulations and the Control of Substances Hazardous to Health Regulations [2].

The standard is intended both for those preparing or using risk assessments, but particularly for building occupiers, facilities managers and specialist consultants.

The formal recommendations (“normative references”) comprising the core sections of the standard cover the main water system categories (ie cooling towers, spas, and conventional hot-and-cold water systems) and the factors to be considered in the risk assessment (ie preparations for the risk assessment; desktop appraisal of documentation; site visits/survey; risk assessment reporting; and risk review).

Illustrative (“informative”) appendices to the main standard provide further guidance: both generally about the chain of events that create a public health hazard (ie system “contamination” and “amplification” and “dispersal/transmission” of contaminated aerosols that may cause legionnaires disease) and on assessing risk related to specific types of water system (fire suppression systems; fountains and water systems; humidifiers; vehicle wash systems; solar heating systems; etc).

The British Standard concerns identification and assessment of sources of risk and applies both to assessments being carried out for the first time and to reviews or audits of assessments previously carried out. It applies only to risks presented by artificial water systems (not natural waters). It does not encompass the other responsibilities of duty holders (ie occupiers of premises, operators of “risk systems”, etc) – to prevent or control risk, prepare a “scheme of control” and to implement, manage and monitor precautions, keep records of precautions, etc – that are covered in general terms in HSE ACP L8 and other official guidance documents.

Legionnaires' disease is a severe pneumonia with a relatively high fatality rate; it is caused by the inhalation of some species of *Legionella* spp bacterium that are found in the natural environment but become an occupational and public health hazard when they colonise artificial water systems. Because there is no person-to-person transmission of the infection, identification of contaminated water systems is necessary to contain outbreaks and implementation of the precautions outlined in the new standard is necessary for public health protection in general.

## References

1. *BS 8580: 2010, Water quality – risk assessments for legionella control – code of practice*, December 2010, available in PDF and hard copy format, £162.00 (£81.00, BSI members). Downloadable from BSI website at: <http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030200235>.

2. Health and Safety Executive (2000). Legionnaires' disease – the control of *Legionella* bacteria in water systems. Approved Code of Practice and guidance L8 (third edition). Available at: <http://www.hse.gov.uk/pubns/priced/l8.pdf>.

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## Travel Health

### Foreign travel-associated illness – a focus on travellers' diarrhoea

A new HPA travel health report summarises the latest data available on laboratory-confirmed gastrointestinal diseases in England, Wales and Northern Ireland (EWNI) associated with foreign travel and uses data from the Office for National Statistics to highlight the higher risk destinations for travellers [1,2].

Travellers' diarrhoea (TD) is a common illness in travellers and may be caused by a number of bacterial, protozoal and viral organisms. Between 2004 and 2008, 24,322 laboratory reports of gastrointestinal (GI) infections in EWNI were reported as associated with foreign travel; half of them were caused by *Salmonella* spp (non typhoidal). Other organisms such as *Campylobacter*, *Shigella*, *Giardia* and *Cryptosporidium* were also reported. Although many studies have shown that *E. coli* is a common cause of travellers' diarrhoea, no surveillance data are available for strains of *E. coli* that commonly cause travellers' diarrhoea in EWNI, therefore *E. coli* was not included in the report.

In 2008, travel to countries in North Africa and the Middle East, Asia, sub-Saharan Africa, South America, and the Caribbean were associated with higher rates of gastrointestinal illness (GI) in travellers from EWNI compared to countries in Europe and North America. Egypt, India, Thailand, Pakistan, and Morocco were identified as the highest risk destinations for travellers from EWNI in 2008 (see table). Factors influencing the acquisition of traveller's diarrhoea include the robustness of the general sanitary infrastructure of the destination, as well as hygiene standards at accommodation and eating establishments visited, and the personal hygiene of the traveller.

#### Estimated rates of laboratory-confirmed gastrointestinal illness per 100,000 visits abroad by residents of England, Wales and Northern Ireland: 2008

Country of travel	Cases of GI illness	Visits by EWNI residents	Rate/100,000 visits
<b>ONS top 10</b>			
Spain	398	12,355,463	3.22
France	63	10,036,285	0.63
United States	16	3,533,399	0.45
Italy	30	3,022,893	0.99
Ireland	7	2,784,490	0.25
Germany	8	2,429,168	0.33
Greece	140	1,984,125	7.06
Portugal	130	1,970,281	6.60
Netherlands	4	1,843,086	0.22
Turkey	379	1,722,029	22.01

<b>Other popular destinations</b>			
Egypt	519	633,541	81.92
India	581	895,943	64.85
Thailand	231	358,158	64.50
Pakistan	226	375,667	60.16
Morocco	164	406,789	40.32
Kenya	63	157,093	40.10
Tunisia	115	334,445	34.39
Caribbean	137	496,442	27.60
Mexico	38	283,807	13.39
Malta	41	477,450	8.59
Cyprus	75	1,154,658	6.50

Most cases of travellers' diarrhoea are mild and self-limiting but the report underlines the importance of travellers being aware of any potential risk of diarrhoea at their destination and taking personal and food and water hygiene precautions to limit their risk. There is no vaccine to prevent traveller's diarrhoea. More information about how to prevent food and water borne infections when travelling at any time of year is available from the [National Travel Health Network and Centre \(NaTHNaC\)](#). See the [NaTHNaC information sheet on travellers' diarrhoea](#) for more information about prevention and treatment.

Advice on all aspects of travel health is available from the National Travel Health Network and Centre at <http://www.nathnac.org/>.

The most up to date surveillance data for travel-associated diseases is available on the [Travel Health page](#) of the HPA website.

## References

1. Health Protection Agency. *Foreign travel-associated illness – a focus on travellers' diarrhoea: 2010 report*. London : Health Protection Agency; December 2010. Available online at: <http://www.hpa.org.uk/Publications/InfectiousDiseases/TravelHealth/1012ForeigntravelassociatedillnessTravDiarrhoea/>.
2. "Research highlights traveller's diarrhoea 'hotspots'", HPA press release, 14 December 2010. HPA website: News Centre › National Press Releases ›2010.

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## Infection reports

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### Immunisation

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### Bacteraemia/HCAIs

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### Immunisation

#### **Quarterly vaccination coverage statistics for children aged up to five years in the UK (COVER programme): July to September 2010**

##### Summary

UK MMR coverage at 24 months remained at 89% with Scotland reporting the highest country level coverage of 93%; Northern Ireland, Wales and five English regions achieved at least 90%. In the English MMR sentinel surveillance scheme coverage of MMR evaluated at 16 months has risen consecutively for the last eight months and is now 81%, the highest coverage recorded at this age since November 1999, and suggests further improvement in routine 24 month MMR coverage during 2011 is likely.

UK vaccine coverage for most of the antigens evaluated this quarter remained at similar levels when compared to those reported in the first six months of 2010. At 12 months UK coverage for DTaP/IPV/Hib3 is 94% and 93% for MenC2 and PCV2. At country level, Northern Ireland reported at least 97% coverage for all three of these immunisations, in Scotland at least 96%, in Wales at least 95%, and within England five regions reported at least 94% coverage. At 24 months, UK coverage for DTaP/IPV/Hib3 was 96.1%, above the WHO target of 95% for the fifth successive quarter.

##### Results for July to September 2010

This report presents quarterly coverage data for children in the UK who reached their first, second, or fifth birthday during the evaluation quarter (July to September 2010).

Children who reached their first birthday in the quarter (born July to September 2009) were the twelfth quarterly birth cohort to have been scheduled to receive their primary vaccinations according to the new schedule introduced on 4 September 2006 [1] (three doses diphtheria, tetanus, acellular pertussis, polio, and *Haemophilus influenzae* type b vaccine (DTaP/IPV/Hib vaccine), two doses each of meningococcal serogroup C conjugate vaccine (MenC vaccine) and pneumococcal conjugate vaccine (PCV).

Children who reached their second birthday in the quarter (born July to September 2008) would have been scheduled to receive their third dose primary vaccinations between November 2008 and January 2009 and first measles, mumps, and rubella (MMR) vaccination between May and October 2009. These children are the eleventh quarterly birth cohort to be routinely scheduled to receive a booster dose of Hib and MenC vaccine (given as a combined Hib/MenC vaccine) at 12 months, and a PCV vaccine at 13 months of age [1].

Children who reached their fifth birthday in the quarter (born July to September 2005) would have been scheduled to receive their third dose primary vaccinations between November 2005 and January 2006, their first MMR between August 2006 and January 2007, their pre-school diphtheria, tetanus, acellular pertussis, inactivated polio booster and second dose MMR and a catch-up dose of a Hib-containing

vaccine from November 2008 [2].

Methods of data collection for COVER, sentinel MMR coverage and neonatal hepatitis B vaccination coverage are described on the HPA website [3].

### Participation and data quality

Data were received from all Health Boards (HBs) in Scotland, Northern Ireland and Wales, and all but one Primary Care Trust (PCT) in England (from London SHA). Three PCTs issued a caveat this quarter regarding data quality (one London PCT which is using GP rather than child health information systems, and two in the South West that have recently migrated to a new child health system). Additionally, unreliable data for several antigens at five years have been excluded from the regional and national totals (table 3).

Individual PCT data for this quarter are published on the HPA website [4].

### Coverage at 12 months

Compared to the previous quarter, UK coverage at 12 months for DTaP/IPV/Hib3, MenC2 and PCV2 decreased by 0.1% to 93.9%, 93.3% and 93.5% respectively (table 1) [5]. Country-specific comparisons at 12 months show Northern Ireland achieved at least 97% coverage for all three immunisations, Scotland achieved at least 97% for two (DTaP/IPV/Hib3 and PCV2), and Wales achieved at least 95% for all three. In England, all regions except East of England, London and South East Coast achieved at least 94% coverage for all three immunisations. Although London was the only English region to report coverage below 90% for any immunisation at 12 months, the substantial increases in coverage reported between June to December 2009 were maintained and coverage for each of the three immunisations is now above 87% (table 1) [6].

Eighty-three of the 177 participating PCTs/HBs/ARs (47%) achieved at least 95% coverage at 12 months for DTaP/IPV/Hib3, 68(38%) achieved 95% for two doses of PCV, and 63 (36%) for two doses of MenC vaccine.

**Table 1. Completed primary immunisations (all antigens) by 12 months: July to September 2010**

Strategic Health Authorities (SHAs)/Country	PCT/HB/LHB *† (total)	DTaP/IPV/Hib3 %	MenC2 %	PCV2 %
<b>English SHAs</b>				
North East	12 (12)	95.4	95.1	95.3
North West	24 (24)	94.7	94.1	94.4
Yorkshire and Humber	14 (14)	94.9	94.3	94.5
East Midlands	9 (9)	95.1	94.6	94.8
West Midlands	17 (17)	93.7	94.0	94.1
East of England	14 (14)	94.3	93.9	94.0
London	30 (31)	89.3	87.7	87.9
South Central	9 (9)	95.3	94.6	95.0
South East Coast	8 (8)	92.0	91.6	91.7
South West	14 (14)	94.2	93.9	94.1
<b>England (Total)</b>	<b>151 (152)</b>	<b>93.4</b>	<b>92.8</b>	<b>93.0</b>
<b>Wales</b>	<b>7 (7)</b>	<b>95.4</b>	<b>95.2</b>	<b>95.4</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>97.2</b>	<b>97.1</b>	<b>97.2</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>97.0</b>	<b>96.7</b>	<b>97.0</b>
<b>United Kingdom</b>	<b>176 (177)</b>	<b>93.9</b>	<b>93.3</b>	<b>93.5</b>

\* Primary Care Trusts/health boards/local health boards

† Number of trusts reporting DTaP/IPV/Hib3 coverage.

## Coverage at 24 months

MMR coverage in the UK remained around 89% this quarter with Scotland, Wales and Northern Ireland and in five English regions (North East, North West, Yorkshire and the Humber, West Midlands and South Central) achieving at least 90% coverage. London MMR coverage decreased by 0.8% to 80.8% [5].

UK Hib/MenC booster increased by 0.2% to 91.6% compared to the previous quarter and PCV booster coverage remained at 89% (table 2) [5]. Scotland, Wales and Northern Ireland and seven English regions (North East, North West, Yorkshire and the Humber, East Midlands, West Midlands, South Central and South West) all achieving coverage of at least 90% for both boosters.

UK coverage for DTaP/IPV/Hib3 at 24 months increased by 0.2% to 96.1%, exceeding the WHO target of 95% for the fifth successive quarter. London is the only region below the 95% target at 91.6% (table 2).

95% coverage at 24 months was achieved by 138 of the 177 PCTs/HBs/LHBs (78%) for DTaP/IPV/Hib3, by 117 (66%) for MenC primary, 40 for the Hib/MenC booster (23%), 14 (8%) for the PCV booster, and 10 (6%) for MMR (7 English PCTs and 3 Scottish HB's).

**Table 2. Completed primary immunisations (all antigens) by 24 months: July to September 2010**

Strategic Health Authorities (SHAs)/Country	PCT/HB /LHB * (total)	DTaP/IPV /Hib3 %	MenC2 %	PCV Booster%	Hib/MenC%	MMR1%
<b>English SHAs</b>						
North East	12 (12)	97.3	97.4	92.2	94.4	90.8
North West	24 (24)	96.9	95.4	90.3	92.7	91.1
Yorkshire and Humber	14 (14)	96.7	96.2	90.9	94.3	90.3
East Midlands	9 (9)	97.1	97.0	91.3	93.6	89.7
West Midlands	17 (17)	97.3	96.4	92.0	93.5	91.5
East of England	14 (14)	96.3	96.7	89.0	93.1	87.9
London	30 (31)	91.6	88.7	79.6	83.5	80.8
South Central	9 (9)	97.4	95.1	90.4	93.2	91.4
South East Coast	8 (8)	95.4	95.9 §	87.1	90.1	87.4
South West	14 (14)	96.7	96.2	90.3	91.6	89.4
<b>England (total)</b>	<b>151 (152)</b>	<b>95.8</b>	<b>94.8 §</b>	<b>88.3</b>	<b>91.2</b>	<b>88.3</b>
<b>Wales</b>	<b>7 (7)</b>	<b>97.5</b>	<b>96.5</b>	<b>90.9</b>	<b>93.6</b>	<b>91.3</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>98.7</b>	<b>97.2</b>	<b>92.8</b>	<b>94.8</b>	<b>91.9</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>98.2</b>	<b>96.5</b>	<b>93.5</b>	<b>93.2 †</b>	<b>93.1</b>
<b>United Kingdom</b>	<b>176 (177)</b>	<b>96.1</b>	<b>95.1§</b>	<b>89.0</b>	<b>91.6</b>	<b>88.9</b>

\* Primary Care Trusts/health boards/local health boards

† Includes Hib/MenC given from 11 months

§ Unreliable data for one PCT excluded.

## Coverage at 5 years

All countries and English regions except for London and South East Coast, achieved at least 92% coverage for DTP/Pol3, Hib3 and MenC, with Scotland, Wales, Northern Ireland and four English regions (North East, Yorkshire and Humber, East Midlands and West Midlands) reporting at least 95% coverage for all three immunisations (table 3).

Compared to the previous quarter, UK coverage of MMR1 at 5 years increased by 0.2% to 92.3%, with both Scotland and Northern Ireland achieving over 96%, and MMR2 increased by 0.4% to 84.6%, with both Scotland and Northern Ireland achieving over 90%. UK DTaP/IPV booster decreased marginally by 0.2% to 86.4% although coverage exceeded 90% in Scotland, Wales and Northern Ireland. London coverage for both pre-school boosters remains at least 10% lower than other regions.

**Table 3. Completed primary immunisations and boosters (all antigens) by 5 years: July to September 2010**

Strategic Health Authorities (SHAs)/country	PCT/HB/AR* † (total)	Primary				Pre-school booster	
		DTP/Pol3 %	Hib3 %	MenC %	MMR1 %	MMR2 %	DTaP/IPV %
<b>English SHAs</b>							
North East	12 (12)	96.0	95.5	95.8	94.1	88.9 §	91.1
North West	24 (24)	96.4	95.5 §	94.4	94.2	86.7	88.5
Yorkshire & Humber	14 (14)	95.9	95.4	95.4	93.6	87.1	87.8
East Midlands	9 (9)	95.7	95.6	95.6	93.1	86.2	88.7
West Midlands	17 (17)	96.9	95.6	95.9	94.0	87.2	90.1
East of England	14 (14)	94.8	94.4	95.0	89.3	83.7	86.5
London	30 (31)	89.6	89.2	85.0	87.3	75.0 §	72.7
South Central	9 (9)	95.7	95.0	94.4	93.7	86.3	88.7
South East Coast	8 (8)	92.4	92.2	91.4	88.8	79.2	83.2
South West	14 (14)	96.2	96.3	94.6	92.4	84.7	88.3
<b>England (total)</b>	<b>151 (152)</b>	<b>94.6</b>	<b>94.0</b>	<b>93.0</b>	<b>91.6</b>	<b>83.7</b>	<b>85.3</b>
<b>Wales</b>	<b>7 (7)</b>	<b>96.9</b>	<b>96.4</b>	<b>95.3</b>	<b>94.3</b>	<b>86.6</b>	<b>90.2</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>98.3</b>	<b>95.1</b>	<b>96.0</b>	<b>96.7</b>	<b>91.1</b>	<b>92.8</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>98.6</b>	<b>97.7</b>	<b>98.3</b>	<b>96.2</b>	<b>91.1</b>	<b>93.0</b>
<b>United Kingdom</b>	<b>176 (177)</b>	<b>95.1</b>	<b>94.5</b>	<b>93.6</b>	<b>92.3</b>	<b>84.6</b>	<b>86.4</b>

\* Primary Care Trusts/health boards/administrative regions

† Number of trusts reporting DTP/Pol3 coverage

§ Unreliable data for one PCT excluded.

## Neonatal hepatitis B vaccine coverage data in England

The data in table 4 represents coverage for three doses of hepatitis B vaccine in those infants born to hepatitis B surface antigen (HBsAg) positive mothers who reached the age of one year in this quarter (i.e. those born between July to September 2009), and coverage of four doses of vaccine in infants who reached two years of age (i.e. those born between July to September 2008).

**Table 4. Neonatal hepatitis B coverage in England: July to September 2010**

Region	Returns with 12 month data	12 month denominator	Coverage at 12 months %	Returns with 24 month data	24 month denominator	Coverage at 24 months %
North East	5 (12)	12	100	6(12)	12	58
North West	19 (24)	68	74	19 (24)	61	54
Yorkshire and Humber	8 (14)	33	97	8 (14)	34	50
East Midlands	6 (9)	63	35	7 (9)	84	37
West Midlands	14 (17)	64	81	14 (17)	55	69
East of England	10 (14)	19	74	9 (14)	26	85
London	25 (31)	163	83	24 (31)	171	53
South Central	8 (9)	51	98	8 (9)	29	76
South East Coast	5 (8)	5	60	5 (8)	7	57
South West	9 (14)	25	76	9 (14)	5	80
<b>Total</b>	<b>109(152)</b>	<b>503</b>	<b>78</b>	<b>109 (152)</b>	<b>484</b>	<b>56</b>

Data were received from 109/152 (72%) PCTs in England, 15 less than reported in the last quarter [5]. Some of the returns may relate to only part of the PCT due to mergers. Compared to the last quarter coverage in England decreased for three doses at age one year by 2% to 78% and coverage of four doses at age 24 months increased by 1% to 56% [5] (table 4).

## MMR sentinel surveillance scheme coverage in England

Data collected from September to November 2010 for children in the four age cohorts are summarised in table 5. Data ranged from 79.9 to 81.3% at 16 months, 85.5 to 87.9% at 20 months, 88.2 to 89.5% at 24 months, and 92.3 to 92.6% at 36 months.

**Table 5. Monthly sentinel estimates of measles, mumps rubella (MMR) coverage at 16, 20, 24 and 36 months: July to September 2010**

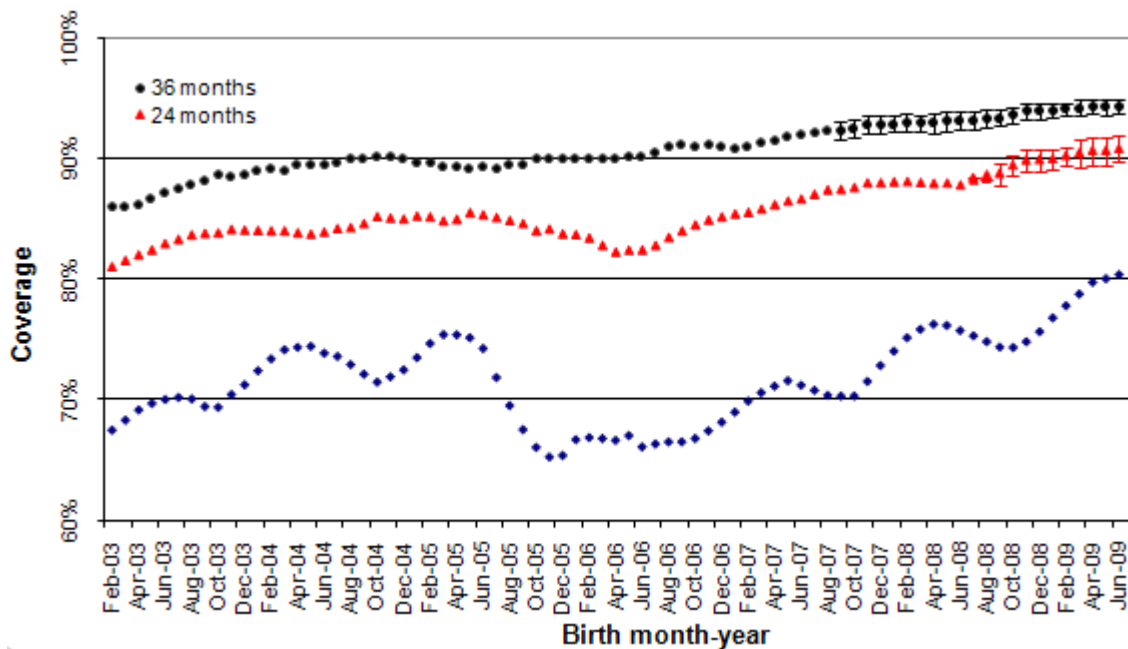
Evaluation month	Proportion of children vaccinated at each age				
	Number of PCT/trusts	16 months	20 months	24 months	36 months
September 2010	35	79.9	85.5	88.2	92.3
October 2010	35	80.1	86.1	89.5	92.3
November 2010	35	81.3 §	87.9	89.3	92.6

§ Unreliable data for one PCT excluded.

Figure 2 shows observed and projected MMR coverage at 16, 24 and 36 months in England for birth cohorts from February 2003 to April 2009. Projections of coverage at 24 and 36 months were made using the most recent coverage data for the same birth cohort and an estimate of the proportion,  $p$ , of those unvaccinated at each earlier age who were subsequently vaccinated by the later age. The proportion was estimated using the most recent 18 months data where final coverage was known. 95% confidence intervals were calculated based on the variability of  $p$  in the past data. The estimates of  $p$  were as follows:

54.0% for 16 to 24 months, 72.1% for 16 to 36 months, 23.8% for 20 to 24 months, 54.6% for 20 to 36 months and 40.7% for 24 to 36 months. Projections make the assumption that  $p$  remains constant over the period of the projection. Data at 20 months is not shown to simplify the graph as the line is close to that plotted for the 24 month data.

### Observed and projected MMR coverage at 16,24 and 36 months by birth year and month in England



Notes: Data shown are five-month moving averages; projections are shown with 95% confidence.

## Relevant links for country-specific coverage data are as follows:

England

<http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles/immunisation>.

Northern Ireland

<http://www.cdscni.org.uk/surveillance/Coveragestats/default.asp>.

Scotland

<http://www.isdscotland.org/isd/1369.html>.

Wales

<http://www.wales.nhs.uk/sitesplus/888/page/43510>.

Other relevant links

[http://www.hpa.org.uk/infections/topics\\_az/cover/default.htm](http://www.hpa.org.uk/infections/topics_az/cover/default.htm)

<http://www.dh.gov.uk/en/PublicHealth/Immunisation/index.htm>.

## References

1. Department of Health. Important changes to the childhood immunisation programme. PL CMO (2006) 1. Available online at:  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH\\_4137171](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH_4137171).
  2. Department of Health. *Haemophilus influenzae* type b (Hib) vaccine for young children – catch-up programme. PL/CMO/2007/5, PL/CNO/2007/3, PL/CPHO/2007/2. 23 July 2007. Available online at:  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH\\_076964](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH_076964).
  3. Methods of collection and publication of data for the COVER programme. HPA website, Home › Topics › Infectious Diseases › Infections A-Z › Vaccine coverage and COVER (Cover of Vaccination Evaluated Rapidly) › COVER Methods.
  4. Vaccine coverage and COVER (Cover of Vaccination Evaluated Rapidly). HPA website, Home › Topics › Infectious Diseases › Infections A-Z › Vaccine coverage and COVER (Cover of Vaccination Evaluated Rapidly).
  5. HPA. Vaccination coverage statistics for children up to the age of five years in the United Kingdom, April to June 2010. *Health Protection Report* [serial online] 2010 [cited 8 December 2010]; 4 (38): immunisation. Available online at: <http://www.hpa.org.uk/hpr/archives/2010/hpr3810.pdf>.
  6. HPA. Vaccination coverage statistics for children up to the age of five years in the United Kingdom, July to December 2009. *Health Protection Report* [serial online] 2010 [cited 8 December 2010]; 4 (12): immunisation. Available online at: <http://www.hpa.org.uk/hpr/archives/2010/hpr1210.pdf>.
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## Bacteraemia/HCAIs

- ▶ **Trends in MRSA bacteraemia and *Clostridium difficile* infection data for England up to July - September 2010**
- ▶ **Uncommon pathogens involved in bacteraemia: England, Wales and Northern Ireland, 2005-2009**

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## Trends in MRSA bacteraemia and *Clostridium difficile* infection data for England up to July - September 2010

The latest (fifth) publication of the HPA HCAI mandatory surveillance team's quarterly epidemiological commentary has been published on the HPA website [1]. It reports trend analyses of data generated by the mandatory surveillance of meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia and *Clostridium difficile* infections (CDI) reported by NHS acute Trust hospitals in England up to September 2010 [2,3].

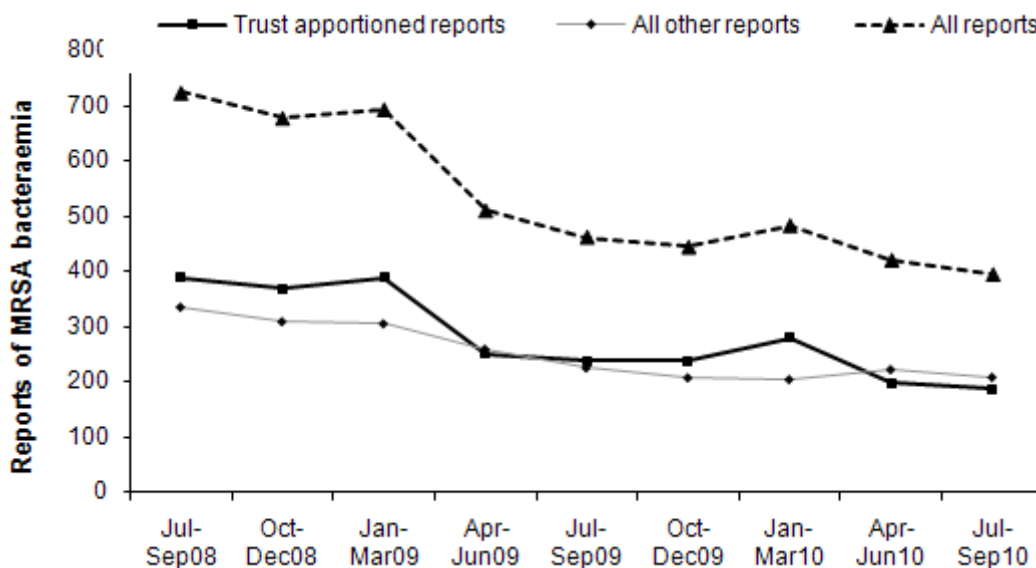
The complete epidemiological commentary [1] – of which this article is a summary – provides additional information on the rates of MRSA bacteraemia and CDI.

### MRSA bacteraemia

The quarterly average of MRSA bacteraemia reports for the financial year 2003/04 of 1,925 reports is used to calculate a baseline against which future data can be compared. In the most recent quarter, July-September 2010, there were 394 reports of MRSA bacteraemia, representing an 80% decrease relative to the baseline.

For this surveillance period (July 2008-September 2010) there has been a 46% decrease in the overall number of reports in England, from 724 reports in July-September 2008 to 394 reports in July-September 2010 (figure 1). In comparison with the previous quarter (April-June 2010) there has been a 6% decrease (from 420 reports). Separating the data into reports apportioned to the acute Trust and to the non-acute Trust (“all other reports”) shows that the number of Trust apportioned reports has remained below that of non-acute Trust apportioned reports since April 2010.

**Figure 1: Quarterly counts of Trust apportioned and all other reports of MRSA bacteraemia, July-September 2008 to July-September 2010**

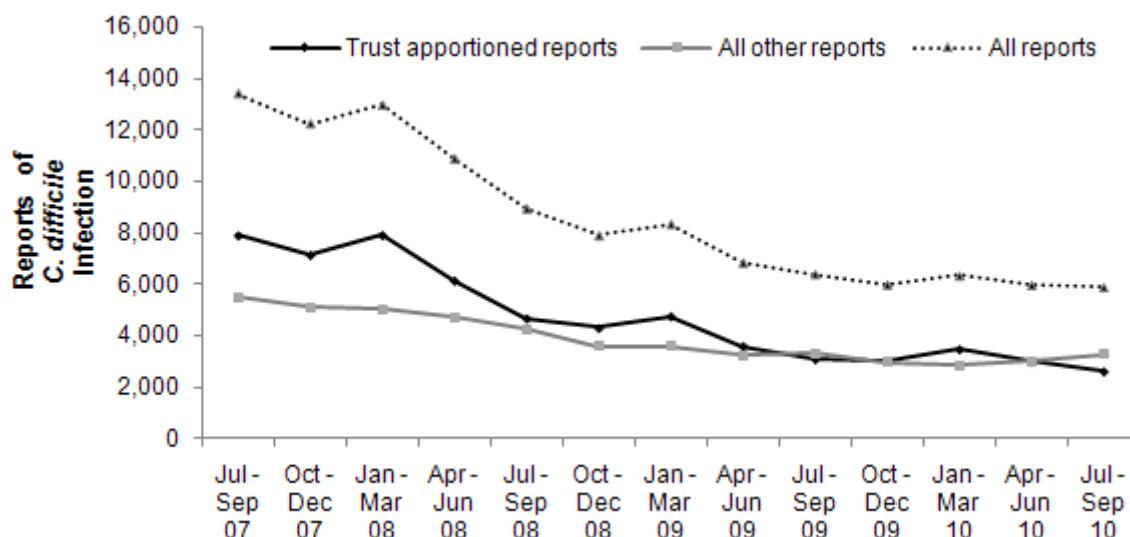


***Clostridium difficile* infection**

In the financial year 2007/08, the year of the introduction of enhanced surveillance for CDI, there were 55,498 reports of CDI, representing a quarterly average of 13,875 reports. Data for the most recent quarter, July-September 2010, showed a total of 5,894 reports, which corresponds with a 58% reduction on the baseline year's quarterly average. This is a decrease of 1.5% on the previous quarter (April-June 2010), when the total number of reports was 5,983.

Figure 2 shows the trend with time of the number of CDI reports. In contrast to the aforementioned 1.5% decrease in all reports since April-June 2010, there has been a 9.5% increase in non-Trust apportioned reports and a 12.5% decrease in Trust apportioned reports.

**Figure 2: Counts of Trust apportioned and all other reports of *Clostridium difficile* infection, July-September 2007 to July-September 2010**



## Notes

\* **MRSA bacteraemia Trust apportioned episodes:** The analysis of Trust apportioned and all other reports is based on the model outlined by the National Quality Board ([http://www.dh.gov.uk/en/Consultations/Closedconsultations/DH\\_100641](http://www.dh.gov.uk/en/Consultations/Closedconsultations/DH_100641)).

This includes patients who are (i) in-patients, day-patients, emergency assessment patients; AND (ii) have had a specimen taken at an acute Trust; AND (iii) specimen is **3 or more days** after date of admission (admission date is considered day '1').

† **CDI Trust apportioned episodes:** include patients who are (i) in-patients, day-patients, emergency assessment patients; AND (ii) have had a specimen taken at an acute Trust; AND (iii) specimen is **4 or more days** after date of admission (admission date is considered day '1').

## References

1. Quarterly Epidemiological Commentaries on MRSA bacteraemia and *C. difficile* infection in England. HPA website: Infections A-Z › *Staphylococcus aureus* › Epidemiological Data *Staphylococcus aureus* › Mandatory Surveillance of *Staphylococcus aureus* bacteraemia › Quarterly Epidemiological Commentaries on MRSA bacteraemia and *C. difficile* infection.
  2. Mandatory *Staphylococcus aureus* bacteraemia surveillance scheme.
  3. Mandatory *Clostridium difficile* infection surveillance scheme.
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## Uncommon pathogens involved in bacteraemia: England, Wales and Northern Ireland, 2005-2009

This analysis is based on bacteraemia reports made by laboratories in England, Wales and Northern Ireland between 2005 and 2009. The reports were made to the HPA as part of the voluntary reporting scheme and provide data on both community- and hospital-acquired bacteraemia. This report describes uncommon pathogens (ie genera with fewer than 50 reports in 2009) identified from blood cultures or blood specimens where the diagnostic method was not stated. The majority of such reports represent bacteraemic infection. The data in this report may vary from that in previous reports due to the inclusion of late reporting of data.

Seventy-nine uncommon genera causing bacteraemic infections were reported by laboratories in England, Wales and Northern Ireland in 2009, comprising a total of 693 bacteraemic episodes. Gram-negative pathogens comprised 74% of all uncommon organisms identified in 2009 (see table 1, following pages). By definition of inclusion in this report, small numbers of reports preclude robust or meaningful analysis of trends but of note are the general decreases in *Agrobacterium*, *Alcaligenes*, *Chryseomonas*, *Flavimonas*, *Ochrobactrum* and *Raoultella terrigena*.

### Discussion

The purpose of this review is to describe the unusual bacterial genera not included in the monthly bacteraemia reports published in the *Health Protection Report*. Although these bacteria only account for a very low proportion of total bacteraemia reports between 2005 and 2009, they can be associated with important clinical consequences. For example, some genera, such as *Cardiobacterium* spp., *Eikenella* spp. and *Kingella* spp. are associated with endocarditis [1]. Examining trends in these unusual pathogens can also provide a means for identifying emerging or re-emerging infections, providing opportunities for preventive measures or education of frontline clinical staff.

The fall in numbers of reports of *Agrobacterium*, *Alcaligenes*, *Chryseomonas* and *Flavimonas*, and certain other environmental bacteria capable of causing line-related sepsis, is of interest and may well reflect widespread improvements in line management in the NHS [2].

Whilst the bacteraemia reported to this voluntary surveillance system should, according to national reporting guidelines, reflect clinically significant disease, it should be borne in mind that some of these reports may reflect contaminants. Inclusion of reports with unknown diagnostic methods should also be taken into account in interpreting these data as some of these reports may not represent isolation from blood culture but microbiological diagnoses by other unspecified means. Improvements in laboratory reporting of diagnostic methods would allow the exclusion of these reports without artificially decreasing the number of genuine bacteraemic infections.

There has been a general improvement in the identification of cultured organisms to the species level by the increased use of automated biochemical identification systems, molecular techniques such as 16S ribosomal RNA and, most recently, by the introduction of MALDI-TOF mass spectrometry in some laboratories. This should increase the accuracy of species identified and permit robust trend analysis of hitherto difficult to identify species. If confirmation of unusual bacterial pathogens is required, isolates can be sent to the relevant laboratory within the [Specialist and Reference Microbiology Division](#) of the HPA.

### Acknowledgements

These reports would not be possible without the enduring weekly contributions from microbiology colleagues in laboratories across England, Wales and Northern Ireland, without which there would be no surveillance data.

Comments or feedback on this report and suggestions for future bacteraemia reports should be sent to: [hcai.amrdivision@hpa.org.uk](mailto:hcai.amrdivision@hpa.org.uk).

### References

1. Brouqui P, Raoult D. Endocarditis due to rare and fastidious bacteria. *Clin Microbiol Rev*. 2001; 14(1):177-207.
2. Department of Health (2005). "Saving lives: a delivery programme to reduce healthcare associated infection including MRSA - overview guide".

**Table 1: Uncommon organisms associated with bacteraemia, England, Wales and Northern Ireland: 2005-2009\***

Genus	Species	Number of bacteraemia reports				
		2005	2006	2007	2008	2009
<b>Gram positive bacteria</b>						
<b><i>Abiotrophia</i> spp</b>		<b>26</b>	<b>34</b>	<b>28</b>	<b>25</b>	<b>17</b>
	<i>Abiotrophia adjacens</i>	12	19	11	8	5
	<i>Abiotrophia defectiva</i>	6	11	11	12	7
	<i>Abiotrophia</i> other named	1	0	0	1	1
	<i>Abiotrophia</i> sp	7	4	6	4	4
<b><i>Actinomyces</i> spp</b>		<b>8</b>	<b>8</b>	<b>9</b>	<b>19</b>	<b>15</b>
	<i>Actinomyces meyeri</i>	0	0	0	2	1
	<i>Actinomyces naeslundii</i>	1	3	4	2	3
	<i>Actinomyces odontolyticus</i>	1	0	1	4	1
	<i>Actinomyces</i> other named	1	1	1	2	2
	<i>Actinomyces</i> sp	5	4	3	8	8
	<i>Actinomyces viscosus</i>	0	0	0	1	0
<b><i>Arachnia</i> spp</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
	<i>Arachnia</i> named	0	0	1	0	0
<b><i>Arcanobacterium</i> spp</b>		<b>6</b>	<b>10</b>	<b>5</b>	<b>26</b>	<b>12</b>
	<i>Arcanobacterium haemolyticum</i>	6	10	5	26	12
<b><i>Arthrobacter</i> spp</b>		<b>1</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>2</b>
	<i>Arthrobacter</i> sp	1	3	5	2	2
<b><i>Bifidobacterium</i> spp</b>		<b>2</b>	<b>3</b>	<b>7</b>	<b>7</b>	<b>10</b>
	<i>Bifidobacterium</i> named	0	0	0	3	0
	<i>Bifidobacterium</i> sp	2	3	7	4	10
<b><i>Brevibacterium</i> spp</b>		<b>14</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>15</b>
	<i>Brevibacterium</i> other named	2	1	1	2	1
	<i>Brevibacterium</i> sp	12	13	14	14	14
<b><i>Dermabacter</i> spp</b>		<b>4</b>	<b>1</b>	<b>4</b>	<b>8</b>	<b>2</b>
	<i>Dermabacter hominis</i>	4	1	4	8	2
<b><i>Erysipelothrix</i> spp</b>		<b>2</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>4</b>
	<i>Erysipelothrix rhusiopathiae (insidiosa)</i>	2	1	4	4	4
<b><i>Eubacterium</i> spp</b>		<b>12</b>	<b>24</b>	<b>19</b>	<b>23</b>	<b>19</b>
	<i>Eubacterium lentum</i>	5	15	9	16	12
	<i>Eubacterium</i> other named	2	4	3	2	5
	<i>Eubacterium</i> sp	5	5	7	5	2
<b><i>Faenia</i> spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
	<i>Faenia rectivergula</i>	0	0	0	1	0
<b><i>Globicatella</i> spp</b>		<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>2</b>
	<i>Globicatella sanguis</i>	0	2	3	0	2
<b><i>Kurthia</i> spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
	<i>Kurthia</i> other named	0	0	0	1	1
<b><i>Leuconostoc</i> spp</b>		<b>31</b>	<b>43</b>	<b>39</b>	<b>38</b>	<b>38</b>
	<i>Leuconostoc</i> sp	31	43	39	38	38
<b><i>Mobiluncus</i> spp</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
	<i>Mobiluncus</i> sp	1	0	0	1	0
<b><i>Nocardia</i> spp</b>		<b>6</b>	<b>4</b>	<b>2</b>	<b>7</b>	<b>8</b>
	<i>Nocardia</i> other named	0	1	1	2	3
	<i>Nocardia</i> sp	6	3	1	5	5
<b><i>Oerskovia</i> spp</b>		<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>
	<i>Oerskovia</i> other named	2	0	1	0	0
	<i>Oerskovia</i> sp	1	0	0	0	1

Genus	Species	Number of bacteraemia reports				
		2005	2006	2007	2008	2009
<b><i>Pediococcus</i> spp</b>		<b>4</b>	<b>3</b>	<b>5</b>	<b>6</b>	<b>1</b>
	<i>Pediococcus</i> other named	2	2	4	2	0
	<i>Pediococcus</i> sp	2	1	1	4	1
<b><i>Peptococcus</i> spp</b>		<b>26</b>	<b>12</b>	<b>17</b>	<b>23</b>	<b>15</b>
	<i>Peptococcus</i> named	2	5	1	6	0
	<i>Peptococcus</i> sp	24	7	16	17	15
<b><i>Rhodococcus</i> spp</b>		<b>17</b>	<b>17</b>	<b>23</b>	<b>18</b>	<b>10</b>
	<i>Rhodococcus equi</i> ( <i>Corynebacterium equi</i> )	0	0	0	2	1
	<i>Rhodococcus</i> other named	0	0	2	4	1
	<i>Rhodococcus</i> sp	17	17	21	12	8
<b><i>Rothia</i> spp</b>		<b>7</b>	<b>12</b>	<b>13</b>	<b>9</b>	<b>7</b>
	<i>Rothia dentocariosa</i>	3	6	5	2	3
	<i>Rothia</i> sp	4	6	8	7	4
<b><i>Stomatococcus</i> spp</b>		<b>4</b>	<b>7</b>	<b>4</b>	<b>9</b>	<b>3</b>
	<i>Stomatococcus mucilaginosus</i>	4	7	3	7	3
	<i>Stomatococcus</i> sp	0	0	1	2	0
<b><i>Streptomyces</i> spp</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
	<i>Streptomyces</i> sp	0	0	1	0	0
<b>Total - Gram positive bacteria</b>		<b>174</b>	<b>198</b>	<b>205</b>	<b>243</b>	<b>182</b>
<b>Gram negative bacteria</b>						
<b><i>Actinobacillus</i> spp</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>
	<i>Actinobacillus</i> other named	1	0	1	1	0
	<i>Actinobacillus</i> sp	0	0	0	2	0
	<i>Actinobacillus ureae</i>	0	1	0	0	0
<b><i>Agrobacterium</i> spp</b>		<b>54</b>	<b>47</b>	<b>40</b>	<b>30</b>	<b>26</b>
	<i>Agrobacterium</i> other named	4	0	1	0	0
	<i>Agrobacterium radiobacter</i> ( <i>Agrobacterium tumefaciens</i> )	49	43	35	29	24
	<i>Agrobacterium</i> sp	1	4	4	1	2
<b><i>Alcaligenes</i> spp</b>		<b>96</b>	<b>64</b>	<b>52</b>	<b>39</b>	<b>43</b>
	<i>Alcaligenes faecalis</i>	12	16	24	14	18
	<i>Alcaligenes</i> other named	10	5	2	4	0
	<i>Alcaligenes piechaudii</i>	0	0	0	1	0
	<i>Alcaligenes</i> sp	35	20	10	8	7
	<i>Alcaligenes xylosoxidans</i>	39	23	16	12	18
<b><i>Anaerobiospirillum</i> spp</b>		<b>13</b>	<b>4</b>	<b>6</b>	<b>9</b>	<b>9</b>
	<i>Anaerobiospirillum</i> other named	2	1	1	1	0
	<i>Anaerobiospirillum</i> sp	11	3	5	8	9
<b><i>Arcobacter</i> spp</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>
	<i>Arcobacter butzleri</i>	0	0	1	0	0
	<i>Arcobacter</i> sp	0	0	0	1	0
<b><i>Bergeyella</i> spp</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<i>Bergeyella zoohelcum</i>	0	1	0	0	0
<b><i>Bordetella</i> spp</b>		<b>6</b>	<b>4</b>	<b>6</b>	<b>5</b>	<b>4</b>
	<i>Bordetella bronchiseptica</i>	5	3	6	2	2
	<i>Bordetella</i> other named	0	1	0	0	0
	<i>Bordetella</i> sp	1	0	0	3	2
<b><i>Borrelia</i> spp</b>		<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>7</b>
	<i>Borrelia</i> sp	1	0	2	2	7
<b><i>Branhamella</i> spp</b>		<b>5</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>2</b>
	<i>Branhamella</i> sp	5	3	3	0	2

Genus	Species	Number of bacteraemia reports				
		2005	2006	2007	2008	2009
<b>Brevundimonas spp</b>		<b>31</b>	<b>29</b>	<b>47</b>	<b>45</b>	<b>25</b>
	<i>Brevundimonas diminuta</i>	10	8	14	10	5
	<i>Brevundimonas sp</i>	0	1	4	7	6
	<i>Brevundimonas vesicularis</i>	21	20	29	28	14
<b>Brucella spp</b>		<b>3</b>	<b>11</b>	<b>7</b>	<b>3</b>	<b>8</b>
	<i>Brucella abortus</i>	0	1	0	0	0
	<i>Brucella melitensis</i>	3	4	5	3	7
	<i>Brucella sp</i>	0	6	2	0	1
<b>Burkholderia spp</b>		<b>44</b>	<b>34</b>	<b>46</b>	<b>29</b>	<b>35</b>
	<i>Burkholderia cenocepacia</i>	0	0	0	1	1
	<i>Burkholderia cepacia</i>	43	31	46	27	31
	<i>Burkholderia sp</i>	1	0	0	0	0
	<i>Burkholderia multivorans</i>	0	0	0	0	2
	<i>Burkholderia pseudomallei</i>	0	3	0	1	1
<b>Buttiauxella spp</b>		<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>
	<i>Buttiauxella agrestis</i>	1	0	1	0	0
	<i>Buttiauxella sp</i>	0	0	0	1	0
<b>Capnocytophaga spp</b>		<b>13</b>	<b>9</b>	<b>13</b>	<b>21</b>	<b>14</b>
	<i>Capnocytophaga</i> other named	7	3	2	10	1
	<i>Capnocytophaga sp</i>	6	6	11	11	13
<b>Cardiobacterium spp</b>		<b>1</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>1</b>
	<i>Cardiobacterium hominis</i>	1	1	1	4	1
	<i>Cardiobacterium</i> other named	0	0	2	0	0
	<i>Cardiobacterium sp</i>	0	0	0	2	0
<b>Cedecea spp</b>		<b>1</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>
	<i>Cedecea davisae</i>	0	1	0	0	1
	<i>Cedecea lapagei</i>	0	0	0	0	1
	<i>Cedecea neteri</i>	0	1	1	0	0
	<i>Cedecea sp</i>	1	0	1	0	0
<b>Chromobacterium spp</b>		<b>2</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>0</b>
	<i>Chromobacterium</i> other named	2	0	0	0	0
	<i>Chromobacterium sp</i>	0	0	0	1	0
	<i>Chromobacterium violaceum</i>	0	2	1	3	0
<b>Chryseobacterium spp</b>		<b>34</b>	<b>49</b>	<b>47</b>	<b>20</b>	<b>29</b>
	<i>Chryseobacterium indologenes</i>	22	37	30	16	20
	<i>Chryseobacterium meningosepticum</i>	11	9	16	3	6
	<i>Chryseobacterium sp</i>	1	3	1	1	3
<b>Chryseomonas spp</b>		<b>43</b>	<b>24</b>	<b>11</b>	<b>15</b>	<b>6</b>
	<i>Chryseomonas luteola</i>	43	24	11	15	6
<b>Comamonas spp</b>		<b>32</b>	<b>31</b>	<b>19</b>	<b>25</b>	<b>19</b>
	<i>Comamonas acidovorans</i>	16	18	9	15	10
	<i>Comamonas</i> other named	5	1	2	3	1
	<i>Comamonas sp</i>	5	6	3	1	3
	<i>Comamonas testosteroni</i>	6	6	5	6	5
<b>Dialister spp</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>
	<i>Dialister pneumosintes</i>	0	0	1	2	1
<b>Edwardsiella spp</b>		<b>1</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>0</b>
	<i>Edwardsiella</i> other named	0	0	0	1	0
	<i>Edwardsiella sp</i>	0	3	0	0	0
	<i>Edwardsiella tarda</i>	1	0	1	1	0
<b>Eikenella spp</b>		<b>12</b>	<b>7</b>	<b>9</b>	<b>4</b>	<b>13</b>
	<i>Eikenella corrodens</i>	8	7	8	3	13
	<i>Eikenella sp</i>	4	0	1	1	0

Genus	Species	Number of bacteraemia reports				
		2005	2006	2007	2008	2009
<b>Empedobacter spp</b>		<b>1</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>1</b>
	<i>Empedobacter brevis</i>	1	0	1	3	1
<b>Erwinia spp</b>		<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<i>Erwinia sp</i>	1	2	0	0	0
<b>Ewingella spp</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
	<i>Ewingella americana</i>	0	1	0	0	1
<b>Flavimonas spp</b>		<b>48</b>	<b>35</b>	<b>19</b>	<b>12</b>	<b>9</b>
	<i>Flavimonas oryzihabitans</i>	48	35	19	12	9
<b>Flavobacterium spp</b>		<b>10</b>	<b>4</b>	<b>4</b>	<b>10</b>	<b>8</b>
	<i>Flavobacterium</i> other named	1	0	1	4	3
	<i>Flavobacterium sp</i>	9	4	3	6	5
<b>Gardnerella spp</b>		<b>3</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>7</b>
	<i>Gardnerella</i> other named	0	0	0	1	2
	<i>Gardnerella sp</i>	0	0	0	1	0
	<i>Gardnerella vaginalis</i>	3	2	3	4	5
<b>Hafnia spp</b>		<b>32</b>	<b>31</b>	<b>41</b>	<b>44</b>	<b>32</b>
	<i>Hafnia alvei</i>	31	31	39	43	31
	<i>Hafnia sp</i>	1	0	2	1	1
<b>Kingella spp</b>		<b>7</b>	<b>2</b>	<b>6</b>	<b>5</b>	<b>11</b>
	<i>Kingella denitrificans</i>	0	1	0	0	0
	<i>Kingella kingae</i>	6	1	4	4	10
	<i>Kingella sp</i>	1	0	2	1	1
<b>Kluyvera spp</b>		<b>20</b>	<b>24</b>	<b>37</b>	<b>18</b>	<b>20</b>
	<i>Kluyvera ascorbata</i>	0	1	0	2	0
	<i>Kluyvera sp</i>	20	23	37	16	20
<b>Leclercia spp</b>		<b>3</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>5</b>
	<i>Leclercia adecarboxylata</i>	3	2	6	6	5
<b>Legionella spp</b>		<b>3</b>	<b>1</b>	<b>4</b>	<b>6</b>	<b>3</b>
	<i>Legionella pneumophila</i>	0	0	0	0	1
	<i>Legionella sp</i>	3	1	4	6	2
<b>Leptospira spp</b>		<b>2</b>	<b>1</b>	<b>6</b>	<b>5</b>	<b>4</b>
	<i>Leptospira</i> other named	0	0	0	1	1
	<i>Leptospira sp</i>	2	1	6	4	3
<b>Leptotrichia spp</b>		<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>4</b>
	<i>Leptotrichia buccalis</i>	1	1	0	0	2
	<i>Leptotrichia sp</i>	1	1	0	1	2
<b>Myroides spp</b>		<b>1</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>
	<i>Myroides odoratus</i>	1	0	5	3	0
<b>Ochrobactrum spp</b>		<b>60</b>	<b>61</b>	<b>63</b>	<b>42</b>	<b>35</b>
	<i>Ochrobactrum anthropi</i>	58	59	59	41	34
	<i>Ochrobactrum sp</i>	2	2	4	1	1
<b>Oligella spp</b>		<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>
	<i>Oligella sp</i>	1	1	0	0	0
	<i>Oligella ureolytica</i>	1	2	1	3	1
	<i>Oligella urethralis</i>	0	0	2	0	1
<b>Plesiomonas spp</b>		<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>
	<i>Plesiomonas shigelloides</i>	0	2	1	1	0
<b>Porphyromonas spp</b>		<b>3</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>6</b>
	<i>Porphyromonas asaccharolytica</i>	2	3	0	0	3
	<i>Porphyromonas sp</i>	1	2	0	1	3
<b>Rahnella spp</b>		<b>9</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>4</b>
	<i>Rahnella</i> named	7	2	4	2	4
	<i>Rahnella sp</i>	2	1	0	0	0

Genus	Species	Number of bacteraemia reports				
		2005	2006	2007	2008	2009
<b>Ralstonia spp</b>		<b>15</b>	<b>14</b>	<b>16</b>	<b>15</b>	<b>8</b>
	<i>Ralstonia pickettii</i>	15	14	16	15	8
<b>Raoultella spp</b>		<b>120</b>	<b>77</b>	<b>45</b>	<b>29</b>	<b>32</b>
	<i>Raoultella terrigena</i>	120	77	45	29	32
<b>Roseomonas spp</b>		<b>5</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>4</b>
	<i>Roseomonas gilardii</i>	3	1	1	1	2
	<i>Roseomonas</i> sp	2	4	5	3	2
<b>Salmonella spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>
	<i>Salmonella paratyphi a</i>	0	0	0	4	0
	<i>Salmonella typhi</i>	0	0	0	2	0
<b>Shewanella spp</b>		<b>3</b>	<b>7</b>	<b>4</b>	<b>6</b>	<b>5</b>
	<i>Shewanella putrefaciens (pseudomonas putrefaciens)</i>	3	6	4	6	5
	<i>Shewanella</i> sp	0	1	0	0	0
<b>Shigella spp</b>		<b>6</b>	<b>4</b>	<b>6</b>	<b>9</b>	<b>3</b>
	<i>Shigella boydii</i>	1	1	1	0	0
	<i>Shigella flexneri</i>	3	3	3	7	3
	<i>Shigella sonnei</i>	2	0	1	2	0
	<i>Shigella</i> sp	0	0	1	0	0
<b>Sphingobacterium spp</b>		<b>12</b>	<b>1</b>	<b>8</b>	<b>9</b>	<b>8</b>
	<i>Sphingobacterium multivorum</i>	4	1	2	3	4
	<i>Sphingobacterium</i> sp	2	0	3	5	1
	<i>Sphingobacterium spiritivorum</i>	6	0	2	1	2
	<i>Sphingobacterium thalpophilum</i>	0	0	1	0	1
<b>Streptobacillus spp</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>
	<i>Streptobacillus moniliformis</i>	1	0	0	0	0
	<i>Streptobacillus</i> sp	0	0	0	1	2
<b>Suttonella spp</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<i>Suttonella indologenes</i>	1	0	0	0	0
<b>Veillonella spp</b>		<b>27</b>	<b>19</b>	<b>39</b>	<b>28</b>	<b>42</b>
	<i>Veillonella</i> named	1	0	6	6	1
	<i>Veillonella</i> sp	26	19	33	22	41
<b>Vibrio spp</b>		<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>1</b>
	<i>Vibrio fluvialis</i>	1	0	2	0	1
	<i>Vibrio parahaemolyticus</i>	1	0	0	0	0
	<i>Vibrio vulnificus</i>	0	0	2	0	0
<b>Weeksella spp</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>
	<i>Weeksella virosa</i>	2	2	2	1	0
<b>Wolinella spp</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
	<i>Wolinella</i> sp	1	0	0	1	0
<b>Yersinia spp</b>		<b>12</b>	<b>17</b>	<b>7</b>	<b>11</b>	<b>10</b>
	<i>Yersinia enterocolitica</i>	8	15	6	9	8
	<i>Yersinia pseudotuberculosis</i>	3	2	0	1	2
	<i>Yersinia</i> sp	1	0	1	1	0
<b>Total - Gram negative bacteria</b>		<b>808</b>	<b>653</b>	<b>659</b>	<b>554</b>	<b>511</b>
<b>Total - Gram positive and Gram negative bacteria</b>		<b>982</b>	<b>851</b>	<b>864</b>	<b>797</b>	<b>693</b>

\*Uncommon genera are identified on the basis of less than 50 reports from blood samples and diagnosed by culture or unknown methods per year in 2009. *Treponema* species are also excluded due to the low likelihood of culture as a method of diagnosis for *Treponemal* infections.

Further data are provided for information and to describe trends.