



# Health Protection Report

weekly report

Volume 3 Number 19 Published on: 15 May 2009

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# News

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## **Influenza A/H1N1 ('swine-lineage'): UK situation at 15 May 2009**

As at 1500 hours on Friday 15 May, the number of confirmed and possible cases of swine-lineage influenza A/H1N1 in the United Kingdom was 82, broken down by region as follows [1]:

<b>Region</b>	<b>Total confirmed cases, 15 May</b>
East of England	9
East Midlands	2
London	47
North East	1
North West	6
South East	5
South West	3
West Midlands	3
Yorkshire & Humberside	-
<b>Total England</b>	<b>76</b>
Northern Ireland	1
Scotland	5
Wales	-
<b>TOTAL UK</b>	<b>82</b>

Two hundred and seventy one cases were under laboratory investigation in the UK. (The figure for cases under investigation changes on a daily basis as some of those under assessment are discounted and new are added. This figure was correct at the time stated.)

Due to the time-lag between the reporting of symptoms, taking swabs, testing and the confirmation of results, some of the new cases reported daily may have recovered and may have become symptom-free. At the time stated, all symptomatic patients were recovering at home. Close contacts of these cases were receiving antivirals as a precautionary measure .

Advice remains that individuals returning from affected areas who become unwell within seven days of their return or contacts of a confirmed or probable case of swine flu who are exhibiting symptoms should stay at home and contact their GP or NHS Direct on 0845 4647. Individuals will be assessed and, if necessary, testing and treatment will be provided.

General infection control practices and good respiratory hand hygiene can help to reduce transmission of all viruses, including swine flu. This includes:

- ▶ covering your nose and mouth when coughing or sneezing, using a tissue when possible.
- ▶ disposing of dirty tissues promptly and carefully.
- ▶ maintaining good basic hygiene, for example washing hands frequently with soap and water to reduce the spread of the virus from your hands to face or to other people.
- ▶ cleaning hard surfaces (eg door handles) frequently using a normal cleaning product.
- ▶ making sure your children follow this advice.
- ▶ where antivirals are prescribed, it is important that the specified course of treatment is followed and completed, even though in some cases this medication may cause nausea.

An analysis by HPA and Health Protection Scotland epidemiologists of the swine influenza situation in the UK, as at 11 May, has been published by the European Centre for Disease Control (ECDC) [2].

## HPA guidance

Key guidance documents currently available on the HPA website include:

- ▶ the case definition for use by health professionals [3];
- ▶ "Algorithm S5" for health professionals on the management of returning travellers [4];
- ▶ practical advice for health professionals investigating individuals with possible swine influenza infection [5];
- ▶ "Algorithm P5" for health professionals on the management of suspected cases [6];
- ▶ advice on exclusion from schools and workplaces [7]; and
- ▶ information for the media on face masks and related information for health professionals [8].

## Further information

A daily update on the number of confirmed cases in the UK, and the number under laboratory investigation, is published on the Swine Influenza pages of the Agency website at ([www.hpa.org.uk/swineflu](http://www.hpa.org.uk/swineflu)), where there are links to specific areas dedicated to information for the [general public](#), [healthcare professionals](#), and the [press and media](#).

## References and links

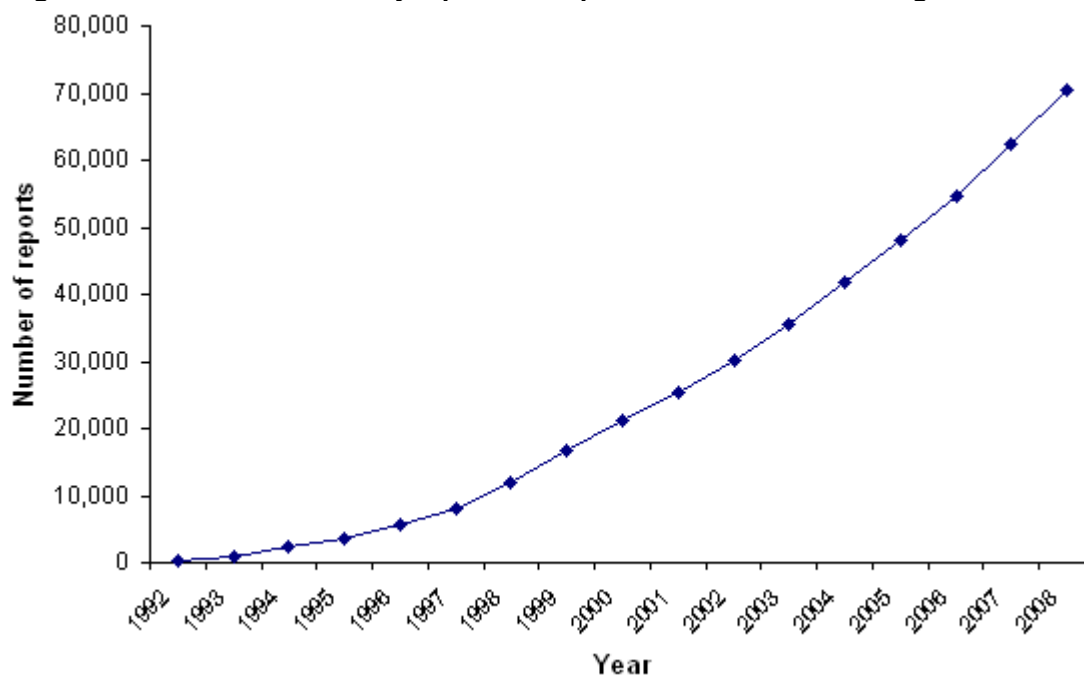
1. 'Update on confirmed swine flu cases', HPA press release, 15 May 2009.
  2. ECDC, "Epidemiology of new influenza A(H1N1) in the United Kingdom, April – May 2009", *Eurosurveillance*, Volume 14, Issue 19, 14 May 2009. Available at: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19213>.
  3. [Swine flu case definition](#) (version 2.0, updated 9 May), available from the Swine Influenza Information for Health Professionals pages on the Agency website.
  4. [Algorithm for the management of suspected cases of swine influenza \(returning travellers and visitors from countries affected by swine influenza A/H1N1 or contacts\)](#) (version S5, updated 12 May), available from the Swine Influenza Information for Health Professionals pages on the Agency website.
  5. [Standard practical advice for investigating individuals with possible swine influenza infection](#) (version 2, updated 5 May), available from the Swine Influenza Information for Health Professionals pages on the Agency website.
  6. [Actions and post exposure prophylaxis for close contacts of probable or confirmed human case\(s\) of swine influenza A/H1N1](#) (version P5, updated 13 May 2009), available from the Swine Influenza Information for Health Professionals pages on the Agency website.
  7. [Advice on exclusion from schools and workplaces](#) (updated 7 May 2009), available via the Swine Influenza public advice pages.
  8. [Information for the media on face masks](#) (updated 29 April 2009), available via the Swine Influenza public advice pages; further information on this topic being available on the Information for Health Professionals pages.
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## World Hepatitis Day – hepatitis C diagnosis increasing in England

Hepatitis C - a theme of World Hepatitis Day on 19 May, 2009 - has been a serious global public health problem for many years [1]. Current mathematical models suggest that around 191,000 individuals aged 15-59 years with antibodies to hepatitis C virus were living in England and Wales in 2003 [2]; this equates to around 142,000 individuals in this age group living with chronic hepatitis C infection.

In 2008, the number of laboratory confirmed diagnoses of hepatitis C infection in England reported to the HPA was 8,107; a rise of seven per cent on the previous year. Overall, this brings the cumulative total number of laboratory-confirmed diagnoses of hepatitis C infections that have been reported to the HPA, between 1992 and 2008, to 70,390 (figure 1). Laboratory confirmed diagnoses of hepatitis C infection are received from all regions in England, and since 1995 there has been a steady increase in the number of reports received (table 1). As in previous years, the highest figures were reported from the North West and the lowest figures from the North East (table 1). It should be borne in mind, however, that a level of under-reporting is associated with these data which varies from region to region.

**Figure 1. Cumulative laboratory reports of hepatitis C infection from England: 1992 to 2008**



**Table 1. Laboratory reports of hepatitis C infection by English region: 1995 to 2008**

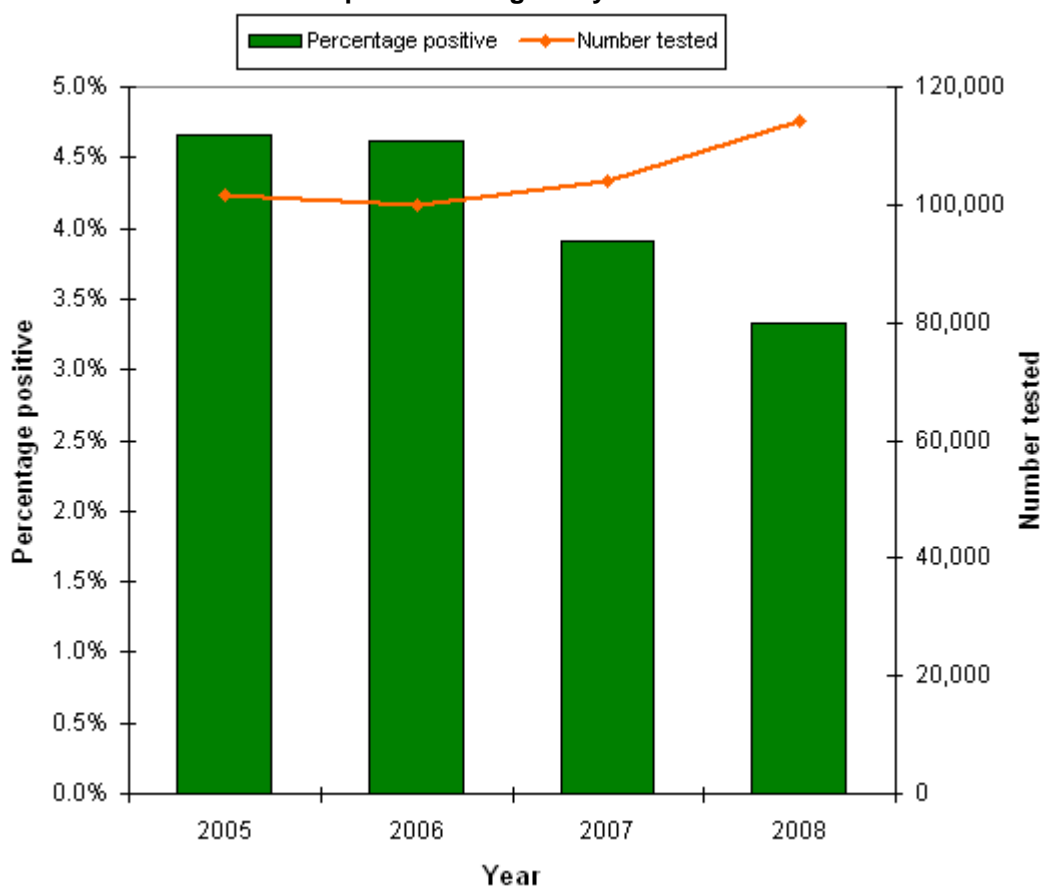
Region	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*	2008	Total
East Midlands	128	151	182	181	196	189	151	241	322	381	463	273	380	614	3852
Eastern	125	224	374	542	565	552	430	351	408	522	584	606	614	670	6567
London	203	263	257	334	299	263	316	331	388	744	807	1182	1010	939	7336
N. East	2	13	40	58	110	130	114	136	228	238	281	240	136	159	1885
N. West	206	135	110	626	1056	897	1061	1369	2004	1849	1488	1255	1626	1587	15269
S. East	314	584	662	928	800	603	571	531	494	405	320	385	812	1066	8475
S. West	312	411	478	443	714	851	722	831	697	929	684	853	1035	1093	10053
West Midlands	36	145	225	559	638	612	552	666	514	554	582	500	621	682	6886
Yorks. and Humb.	66	77	156	141	236	392	236	305	474	584	1025	1427	1351	1297	7767
<b>Total</b>	<b>1392</b>	<b>2003</b>	<b>2484</b>	<b>3812</b>	<b>4614</b>	<b>4489</b>	<b>4153</b>	<b>4761</b>	<b>5529</b>	<b>6206</b>	<b>6234</b>	<b>6721</b>	<b>7585</b>	<b>8107</b>	<b>68090</b>

The number of monthly reports has fluctuated throughout the year (figure 2) and although laboratory reports underestimate the true numbers of infections in England, they provide a reliable indication of trends in national testing. Trends in testing can also be analysed using data from sentinel laboratories participating in the Sentinel Surveillance of Hepatitis Testing Study [3]. Figure 3 shows the number of people tested for anti-HCV and the proportion testing positive by year in 18 sentinel laboratories with complete data from January 2005 to the end of December 2008. These data also support the view that testing has increased over the last two years, and that the proportion of people tested who were found to be anti-HCV positive has declined over the same period. This falling yield of positives as hepatitis C testing/screening is being extended is consistent with improved access to testing for groups at lower risk of infection.

**Figure 2. Five month moving average of laboratory reports of hepatitis C infection from England: January 1996 to December 2008**



**Figure 3. HCV tested and percentage positive by year: 2005 – 2008:\* data from 18 centres in the Sentinel Surveillance of Hepatitis Testing Study.**



\* Excludes reference testing, testing from hospitals referring all samples, and children aged less than one year.

The sustained increase in reports of laboratory confirmed cases for HCV infection indicate that hepatitis C diagnosis and testing are continuing to increase, suggesting that more diagnosis is taking place and that more infected individuals are being identified.

The continued increase is likely to be a reflection of increased awareness and testing. Both the Department of Health and voluntary sector campaigns are likely to have contributed to this increase over recent years. However, there is no room for complacency when dealing with this infection as, despite current efforts to improve prevention, diagnosis, and treatment of infected individuals, routine national data sources in England (including transplants, deaths and hospital admissions) all show HCV-related end stage liver disease to be rising [2].

Continued efforts to further increase testing in prisons, specialist drug services, and primary care would all contribute to increasing diagnosis. Further work is also required across the statutory and voluntary sector to continue to increase awareness of hepatitis C amongst healthcare professionals and individuals at current risk of, or with past exposure to, hepatitis C. In most UK areas, clear pathways have been established to enable individuals diagnosed with chronic hepatitis C infection to access specialist care. However, these pathways need to be available in all health economies and to incorporate patients diagnosed in a wide range of settings. By strengthening local networks between people from different agencies who are caring for and supporting those with hepatitis C, the number of people starting and remaining on effective treatment can be maximised.

## References

- 1 WHO. Hepatitis C - global prevalence (update). *Weekly Epidemiological Record*. 2000; **3**: 18-19.
2. Hepatitis C in the UK - HPA annual report 2008, [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1228894676145](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1228894676145).
3. Health Protection Agency. Quarterly report from the sentinel surveillance study of hepatitis testing in England: data for October to December 2008 (quarter 4). *Health Protection Report* [serial online] 2006; **3**(16): immunisation. Available at: <http://www.hpa.org.uk/hpr/archives/2009/hpr1609.pdf>.

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## Infection reports

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### Bacteraemia

#### Uncommon pathogens involved in bacteraemia: England, Wales and Northern Ireland: 2003-2007

This review covers bacteraemia reports from laboratories in England, Wales and Northern Ireland identified from blood samples from 2003-2007. The reports were made to HPA under the voluntary reporting scheme which covers both community-acquired and hospital-acquired bacteraemias. For the purposes of this report 'uncommon pathogens involved in bacteraemia' means organisms from genera with fewer than 50 bacteraemia reports in each year.

Due to the small number of reports of uncommon pathogens, details such as a recent travel history, use of an intravascular line or a history of recent surgery are not examined further here.

In 2007, a total of 3,405 reports were made of uncommon pathogens in 116 genera. Organisms from *Bacteroides spp*, *Clostridium spp* and *Streptococcus spp*. were the most frequently reported. A full list of all organisms with fewer than 50 reports per year is given in table 1.

For some organisms it was apparent that serum samples for antibody and antigen detection had been recorded as blood samples. All organisms that had a 'parent specimen type' of blood that were identified by antibody or antigen detection alone were removed from this report.

#### Discussion

The purpose of this review is to cover the unusual bacterial genera that have not been discussed in the other bacteraemia reports in the HPR this year. Although these bacteria only account for approximately 3.1-3.5% of the total bacteraemia reports between 2003-2007, they can be associated with important clinical consequences. For example, some genera, such as *Cardiobacterium spp.*, *Eikenella spp.* and *Kingella spp.* can be associated with endocarditis [1].

These reports should reflect clinically significant disease. It can be difficult, however, to distinguish true clinical bacteraemias and contamination of cultures can lead to the diagnosis of a pseudobacteraemia [2, 3]. For example, *Ralstonia pickettii* is a rare bacteraemia [4], and this organism has previously been identified as a source of pseudobacteraemias, suggesting further investigation may be recommended if *R. pickettii* is identified in blood culture [5]. In 2003 there were 11 reports of bacteraemias due to *R. pickettii* which increased by a small margin in subsequent years. Molecular tools have improved the detection of the more unusual bacteria from blood and such methods have allowed the identification of new agents of severe disease such as endocarditis, however the nature of these methods requires that great care must be taken to avoid reporting contaminants [1, 5, 6].

As noted above, a number of reports for certain organisms referred to antibody detection, rather than blood culture. This is of concern as it may lead to an exaggeration of the number of bacteraemia reports. Reports of bacteraemias based on antibody- or antigen detection have been removed from this report.

These uncommon organisms have been reported in previous analyses available on the HPA website [7] and feedback is welcome. If confirmation of unusual bacterial pathogens is required, isolates can be sent to the Laboratory of Healthcare Associated Hospital Infection, Specialist and Reference Microbiology Division, HPA Colindale, London.

## Acknowledgments

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. Please send any comments/feedback to [hcai.amrdivision@hpa.org.uk](mailto:hcai.amrdivision@hpa.org.uk). In addition, the support from colleagues within the HPA Centre for Infections, is valued in the preparation of the reports. These contributions are greatly appreciated.

## References

1. Brouqui P and Raoult D. Endocarditis due to rare and fastidious bacteria. *Clin Micro Rev.* 2001; **14**: 177-207
2. *Ochrobactrum anthropi* pseudobacteraemias. *Commun Dis Rep CDR Wkly* 2001; **11**.
3. Beebe JL, Koneman EW. Recovery of uncommon bacteria from blood: Association with neoplastic disease. *Clin Micro Rev* 1995; **8**: 336-356.
4. Wauters G, Claeys G, Verschaeagen G, De Baere T, Vandecruys E, Van Simaey L, De Ganck C, Vaneechoutte M. Case of catheter sepsis with *Ralstonia gilardii* in a child with acute lymphoblastic leukemia. *J Clin Microbiol.* 2001 Dec;39(12):4583-4),
5. D. Boutros N, Gonullu N, Casetta A, Guibert M, Ingrand D, Lebrun L. *Ralstonia pickettii* traced in blood culture bottles. *J Clin Microbiol* 2002; **40**: 2666-7.PHLS.
6. PHLS. Uncommon pathogens involved in bacteraemia, England and Wales, 2001. *Commun Dis Rep CDR Wkly [serial online]* 2002; 12 (47).
7. HPA. Uncommon pathogens involved in bacteraemia: England, Wales and Northern Ireland: 2001-2006, <http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1201767911870>.

**Table 1: Organisms associated with bacteraemia\*, England, Wales and Northern Island, 2003-2007\***

Genus**	Species	Number of bacteraemia reports				
		2003	2004	2005	2006	2007
<b><i>Abiotrophia spp</i></b>		<b>11</b>	<b>20</b>	<b>26</b>	<b>34</b>	<b>28</b>
	<i>Abiotrophia adjacens</i>	5	11	12	19	11
	<i>Abiotrophia defectiva</i>	3	4	6	11	11
<b><i>Achromobacter spp</i></b>		<b>9</b>	<b>19</b>	<b>17</b>	<b>36</b>	<b>62</b>
<b><i>Acinetobacter spp</i></b>		<b>94</b>	<b>98</b>	<b>108</b>	<b>95</b>	<b>95</b>
	<i>Acinetobacter calcoaceticus (anitratu)s</i>	37	34	24	36	21
	<i>Acinetobacter haemolyticus</i>	24	20	26	20	24
	<i>Acinetobacter johnsonii</i>	1	3	1		
	<i>Acinetobacter junii</i>	25	26	43	33	43
<b><i>Actinobacillus spp</i></b>		<b>2</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>
	<i>Actinobacillus ureae</i>	1			1	
<b><i>Actinomyces spp</i></b>		<b>6</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>9</b>
	<i>Actinomyces meyeri</i>	1	1			
	<i>Actinomyces naeslundii</i>	2	3	1	3	4
	<i>Actinomyces odontolyticus</i>		2	1		1
	<i>Actinomyces pyogenes</i>		1			
<b><i>Aerococcus spp</i></b>		<b>7</b>	<b>6</b>	<b>14</b>	<b>18</b>	<b>29</b>

<b>Aeromonas spp</b>		<b>62</b>	<b>28</b>	<b>42</b>	<b>32</b>	<b>54</b>
	<i>Aeromonas caviae</i>	6	1	3	2	8
	<i>Aeromonas salmonicida</i>	1	1	2		6
	<i>Aeromonas sobria</i>	12	8	14	6	5
	<i>Aeromonas veronii</i>	1		1	2	2
<b>Agrobacterium</b>		<b>48</b>	<b>1</b>	<b>54</b>	<b>47</b>	<b>40</b>
	<i>Agrobacterium radiobacter (Agrobacterium tumefaciens)</i>	43		49	43	35
<b>Alcaligenes spp</b>		<b>109</b>	<b>106</b>	<b>95</b>	<b>64</b>	<b>52</b>
	<i>Alcaligenes faecalis</i>	15	13	12	16	24
	<i>Alcaligenes xylosoxidans</i>	46	43	39	23	16
<b>Anaerobiospirillum spp</b>		<b>4</b>	<b>6</b>	<b>13</b>	<b>4</b>	<b>6</b>
<b>Arachnia spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Arcanobacterium spp</b>		<b>7</b>	<b>8</b>	<b>6</b>	<b>10</b>	<b>5</b>
	<i>Arcanobacterium haemolyticum</i>	7	8	6	10	5
<b>Arcobacter spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
	<i>Arcobacter butzleri</i>					1
<b>Arthrobacter spp</b>		<b>0</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>4</b>
<b>Bacillus spp</b>		<b>60</b>	<b>76</b>	<b>36</b>	<b>41</b>	<b>45</b>
	<i>Bacillus anthracis</i>			1		
	<i>Bacillus cereus</i>	41	48			
	<i>Bacillus circulans</i>	2	6			
	<i>Bacillus firmus</i>	1	2			
	<i>Bacillus licheniformis</i>	6	2	2	5	1
	<i>Bacillus pumilus</i>	1	2	1	4	1
	<i>Bacillus sphaericus</i>	1	2		1	1
	<i>Bacillus subtilis</i>			3	1	2
<b>Bacteroides spp</b>		<b>139</b>	<b>156</b>	<b>153</b>	<b>132</b>	<b>166</b>
	<i>Bacteroides capillosus</i>	24	37	32	21	38
	<i>Bacteroides distasonis</i>	7	5	6	9	13
	<i>Bacteroides ovatus</i>	12	16	15	16	16
	<i>Bacteroides splanchnicus</i>			1		3
	<i>Bacteroides thetaiotaomicron</i>	37	38	47	32	
	<i>Bacteroides uniformis</i>	18	10	17	7	23
	<i>Bacteroides ureolyticus (Bacteroides corrodens)</i>	8	16	15	10	18
	<i>Bacteroides variabilis</i>				1	1
	<i>Bacteroides vulgatus</i>	9	15	6	11	19
<b>Bergeyella spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
	<i>Bergeyella zoohelcum</i>				1	
<b>Bifidobacterium spp</b>		<b>4</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>7</b>
<b>Bordetella spp</b>		<b>3</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>21</b>
	<i>Bordetella bronchiseptica</i>			5	3	6

	<i>Bordetella pertussis</i>	3	2	1	2	15
<b>Borrelia spp</b>		<b>3</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>22</b>
	<i>Borrelia burgdorferi</i>	3	3	5	3	20
<b>Bergeyella spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
	<i>Bergeyella zoohelcum</i>				1	
<b>Bifidobacterium spp</b>		<b>4</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>7</b>
<b>Bordetella spp</b>		<b>3</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>21</b>
	<i>Bordetella bronchiseptica</i>			5	3	6
	<i>Bordetella pertussis</i>	3	2	1	2	15
<b>Borrelia spp</b>		<b>3</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>22</b>
	<i>Borrelia burgdorferi</i>	3	3	5	3	20
<b>Branhamella spp</b>		<b>7</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>3</b>
<b>Brevibacterium spp</b>		<b>14</b>	<b>11</b>	<b>14</b>	<b>13</b>	<b>15</b>
<b>Brevundimonas spp</b>		<b>23</b>	<b>31</b>	<b>30</b>	<b>29</b>	<b>48</b>
	<i>Brevundimonas diminuta</i>	6	6	10	8	14
	<i>Brevundimonas vesicularis</i>	17	25	20	20	30
<b>Brucella spp</b>		<b>10</b>	<b>22</b>	<b>3</b>	<b>11</b>	<b>7</b>
	<i>Brucella abortus</i>	3	7		1	
	<i>Brucella melitensis</i>	1	3	3	4	5
<b>Burkholderia spp</b>		<b>1</b>	<b>47</b>	<b>43</b>	<b>34</b>	<b>46</b>
	<i>Burkholderia cepacia</i>		47	42	31	46
	<i>Burkholderia mallei</i>			1		
	<i>Burkholderia pseudomallei</i>	1			3	
<b>Buttiauxella spp</b>		<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>
	<i>Buttiauxella agrestis</i>		1	1		1
<b>Campylobacter spp</b>		<b>63</b>	<b>71</b>	<b>27</b>	<b>77</b>	<b>41</b>
	<i>Campylobacter coli</i>	3	2	2	5	9
	<i>Campylobacter fetus</i>	4	5	1	4	4
	<i>Campylobacter jejuni</i>	11	20	22	23	27
	<i>Campylobacter upsaliensis</i>	1		1		
<b>Capnocytophaga spp</b>		<b>11</b>	<b>5</b>	<b>13</b>	<b>9</b>	<b>13</b>
	<i>Capnocytophaga ochracea</i>	1				
<b>Cardiobacterium spp</b>		<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>3</b>
	<i>Cardiobacterium hominis</i>	1	3	1	1	1
<b>Cedecea spp</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>
	<i>Cedecea davisae</i>	1		1		
	<i>Cedecea lapagei</i>		1			
	<i>Cedecea neteri</i>				1	1
<b>Chromobacterium spp</b>		<b>4</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>
	<i>Chromobacterium violaceum</i>	2	2		2	1
<b>Chryseobacterium spp</b>		<b>33</b>	<b>26</b>	<b>34</b>	<b>49</b>	<b>48</b>
	<i>Chryseobacterium gleum</i>	1	1			

	<i>Chryseobacterium indologenes</i>	24	21	22	37	31
	<i>Chryseobacterium meningosepticum</i>	7	4	11	9	16
<b>Chryseomonas spp</b>		<b>43</b>	<b>30</b>	<b>42</b>	<b>24</b>	<b>11</b>
	<i>Chryseomonas luteola</i>	43	30	42	24	11
<b>Citrobacter spp</b>		<b>21</b>	<b>32</b>	<b>34</b>	<b>49</b>	<b>44</b>
	<i>Citrobacter amalonaticus</i>	2	1	6	4	3
<b>Clostridium spp</b>		<b>87</b>	<b>120</b>	<b>126</b>	<b>138</b>	<b>137</b>
	<i>Clostridium beijerinckii</i>		2	1	2	
	<i>Clostridium bifementans (Clostridium sordelli)</i>	6	7	6	5	5
	<i>Clostridium botulinum</i>	1			1	
	<i>Clostridium butyricum</i>	4	10	2	4	1
	<i>Clostridium cadaveris</i>	10	9	7	7	12
	<i>Clostridium clostridiforme</i>	5	12	10	7	10
	<i>Clostridium difficile</i>		27	17	25	16
	<i>Clostridium fallax</i>	4	1	5	4	8
	<i>Clostridium glycolicum</i>	2	1	1	1	1
	<i>Clostridium histolyticum</i>		3		2	
	<i>Clostridium innocuum</i>	4	1	6	7	7
	<i>Clostridium limosum</i>				1	1
	<i>Clostridium novyi</i>		1			1
	<i>Clostridium paraputrificum</i>	13	12	21	14	14
	<i>Clostridium putrificum</i>					2
	<i>Clostridium ramosum</i>	18	12	25	25	27
	<i>Clostridium sporogenes</i>	2	4	5	7	3
	<i>Clostridium subterminale</i>	2	1	1	1	3
	<i>Clostridium tertium</i>	7	9	14	18	11
	<i>Clostridium tyrobutyricum</i>			1	1	
<b>Comamonas spp</b>		<b>30</b>	<b>30</b>	<b>32</b>	<b>31</b>	<b>19</b>
	<i>Comamonas acidovorans</i>	24	23	16	18	9
	<i>Comamonas testosteroni</i>	3	2	6	6	5
<b>Corynebacterium spp</b>		<b>71</b>	<b>93</b>	<b>90</b>	<b>84</b>	<b>96</b>
	<i>Corynebacterium amycolatum</i>	1		2		
	<i>Corynebacterium aquaticum</i>		4	7	5	
	<i>Corynebacterium bovis</i>	1	1			
	<i>Corynebacterium diphtheriae Gravis</i>				1	
	<i>Corynebacterium diphtheriae Untyped</i>		1			1
	<i>Corynebacterium jeikeium</i>	29	23	30	32	17
	<i>Corynebacterium minutissimum</i>	1	1	1		
	<i>Corynebacterium pseudodiphtheriticum (C.hoffmannii)</i>		2	2	1	3
	<i>Corynebacterium pseudotuberculosis</i>				1	
	<i>Corynebacterium striatum</i>	21	29	32	25	43
	<i>Corynebacterium urealyticum</i>	2	2	1	4	1

	<i>Corynebacterium xerosis</i>		1	1		
<b>Dermabacter spp</b>		<b>2</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>4</b>
	<i>Dermabacter hominis</i>	2	2	4	1	4
<b>Dialister spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
	<i>Dialister pneumosintes</i>					1
<b>Edwardsiella spp</b>		<b>2</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>1</b>
	<i>Edwardsiella tarda</i>	1		1		1
<b>Eikenella spp</b>		<b>8</b>	<b>7</b>	<b>12</b>	<b>7</b>	<b>9</b>
	<i>Eikenella corrodens</i>	7	7	8	7	8
<b>Empedobacter spp</b>		<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>
	<i>Empedobacter brevis</i>	2		1		1
<b>Enterobacter spp</b>		<b>58</b>	<b>47</b>	<b>42</b>	<b>41</b>	<b>95</b>
	<i>Enterobacter amnigenus</i>	8	12	10	6	12
	<i>Enterobacter gergoviae</i>	1	1	5	6	3
	<i>Enterobacter intermedius</i>	3	5	2	2	5
	<i>Enterobacter sakazakii</i>					37
<b>Enterococcus spp</b>		<b>119</b>	<b>35</b>	<b>90</b>	<b>136</b>	<b>97</b>
	<i>Enterococcus avium</i>	39		44	49	
	<i>Enterococcus casseliflavus</i>	21	28	35	33	39
	<i>Enterococcus durans</i>	50			48	41
	<i>Enterococcus hirae</i>	4	3	3		7
	<i>Enterococcus raffinosus</i>	5	4	8	6	10
<b>Erwinia spp</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>
	<i>Erwinia sp</i>			1	2	
<b>Erysipelothrix spp</b>		<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>4</b>
	<i>Erysipelothrix rhusiopathiae (insidiosa)</i>	2		2	1	4
<b>Escherichia spp</b>		<b>26</b>	<b>13</b>	<b>16</b>	<b>20</b>	<b>13</b>
	<i>Escherichia alkalescens (Dispar)</i>	1		1	1	
	<i>Escherichia fergusonii</i>	5	3	6	5	4
	<i>Escherichia hermannii</i>	7	3		4	3
	<i>Escherichia vulneris</i>	1	3	3	6	1
<b>Eubacterium spp</b>		<b>13</b>	<b>28</b>	<b>12</b>	<b>24</b>	<b>19</b>
	<i>Eubacterium lentum</i>	7	16	5	15	9
<b>Ewingella spp</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
	<i>Ewingella americana</i>		1		1	
<b>Flavimonas spp</b>		<b>41</b>	<b>34</b>	<b>48</b>	<b>35</b>	<b>19</b>
	<i>Flavimonas oryzihabitans</i>	41	34	48	35	19
<b>Flavobacterium spp</b>		<b>14</b>	<b>16</b>	<b>10</b>	<b>4</b>	<b>4</b>
<b>Francisella spp</b>		<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Fusobacterium spp</b>		<b>94</b>	<b>107</b>	<b>116</b>	<b>117</b>	<b>128</b>
	<i>Fusobacterium mortiferum</i>	1		3		1
	<i>Fusobacterium naviforme</i>		1			

	<i>Fusobacterium necrophorum</i> ( <i>Sphaerophus necrophorum</i> )	35	39	40	40	49
	<i>Fusobacterium nucleatum</i>	28	31	26	33	29
	<i>Fusobacterium varium</i>	1	2	2	2	3
<b>Gardnerella spp</b>		<b>4</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>
	<i>Gardnerella vaginalis</i>	3	2	3	2	3
<b>Gemella spp</b>		<b>80</b>	<b>92</b>	<b>98</b>	<b>52</b>	<b>71</b>
	<i>Gemella haemolysans</i>	22	27	33	28	45
	<i>Gemella morbillorum</i>	39	48	43		
<b>Globicatella spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>
	<i>Globicatella sanguis</i>				2	3
<b>Haemophilus spp</b>		<b>81</b>	<b>79</b>	<b>30</b>	<b>87</b>	<b>83</b>
	<i>Haemophilus actinomycetemcomitans</i>	4	1	1	6	6
	<i>Haemophilus aphrophilus</i>	2	4	11	6	6
	<i>Haemophilus paraahaemolyticus</i>	1	2	1		2
	<i>Haemophilus parainfluenzae</i>	49	46		50	48
	<i>Haemophilus paraphrophilus</i>		2	1		1
	<i>Haemophilus segnis</i>		2	1		
<b>Hafnia spp</b>		<b>34</b>	<b>33</b>	<b>32</b>	<b>31</b>	<b>41</b>
	<i>Hafnia alvei</i>	32	33	31	31	39
<b>Helicobacter spp</b>		<b>2</b>	<b>9</b>	<b>7</b>	<b>0</b>	<b>10</b>
	<i>Helicobacter cinaedi</i>	2	8	7		9
	<i>Helicobacter pylori</i>	5	2	7	2	5
<b>Kingella spp</b>		<b>5</b>	<b>2</b>	<b>7</b>	<b>2</b>	<b>5</b>
	<i>Kingella denitrificans</i>	1				
	<i>Kingella kingae</i>	36	38	46		44
<b>Klebsiella spp</b>		<b>55</b>	<b>56</b>	<b>60</b>	<b>14</b>	<b>116</b>
	<i>Klebsiella edwardsii</i>	1				
	<i>Klebsiella ornitholytica</i>	36	38	46		44
	<i>Klebsiella ozenae</i>	16	13	12	10	20
	<i>Klebsiella planticola</i>	2	1	2	3	1
	<i>Klebsiella rhinoscleromatis</i>					1
	<i>Klebsiella terrigena</i>					45
<b>Kluyvera spp</b>		<b>23</b>	<b>26</b>	<b>20</b>	<b>24</b>	<b>37</b>
	<i>Kluyvera ascorbata</i>		2		1	
	<i>Kluyvera cryocrescens</i>		1			
<b>Lactobacillus spp</b>		<b>45</b>	<b>48</b>	<b>62</b>	<b>47</b>	<b>22</b>
	<i>Lactobacillus acidophilus</i>		2	2	3	2
	<i>Lactobacillus brevis</i>				1	
	<i>Lactobacillus casei</i>		1		1	
	<i>Lactobacillus catenaformis</i>					1
	<i>Lactobacillus fermentum</i>			1	1	1
	<i>Lactobacillus plantarum</i>				2	

	<i>Lactobacillus rhamnosus</i>	5	2	5	2	7
<b>Lactococcus spp</b>		<b>32</b>	<b>46</b>	<b>38</b>	<b>54</b>	<b>63</b>
	<i>Lactococcus cremoris</i>	12	19	9	14	13
	<i>Lactococcus lactis</i>	13	19	25	31	39
<b>Leclercia spp</b>		<b>2</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>6</b>
	<i>Leclercia adecarboxylata</i>	2	7	3	2	6
<b>Legionella spp</b>		<b>0</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>6</b>
<b>Leptospira spp</b>		<b>0</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>7</b>
	<i>Leptospira hardjo</i>		1			
<b>Leptotrichia spp</b>		<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>
	<i>Leptotrichia buccalis</i>			1	1	
<b>Leuconostoc spp</b>		<b>29</b>	<b>35</b>	<b>31</b>	<b>43</b>	<b>38</b>
<b>Listeria spp</b>		<b>22</b>	<b>23</b>	<b>22</b>	<b>8</b>	<b>13</b>
	<i>Listeria innocua</i>	1	1	2		3
<b>Micrococcus spp</b>		<b>1</b>	<b>4</b>	<b>9</b>	<b>38</b>	<b>25</b>
	<i>Micrococcus luteus</i> (Sarcina)		2	6	37	22
<b>Mobiluncus spp</b>		<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Moraxella spp</b>		<b>42</b>	<b>23</b>	<b>48</b>	<b>56</b>	<b>41</b>
	<i>Moraxella atlantae</i>	4	2	4	1	1
	<i>Moraxella lacunata</i>			1	1	2
	<i>Moraxella nonliquefaciens</i>	5	2	3	1	
	<i>Moraxella osloensis</i>	12	8	15	17	6
	<i>Moraxella phenylpyruvica</i>	1		2		
<b>Mycobacterium spp</b>		<b>61</b>	<b>99</b>	<b>109</b>	<b>121</b>	<b>102</b>
	<i>Mycobacterium abscessus</i>	1		6		
	<i>Mycobacterium africanum</i>					1
	<i>Mycobacterium avium-intracellulare</i> Group(Mai)	22	32	33	20	19
	<i>Mycobacterium bovis</i> (Non-BCG Strain)			1		1
	<i>Mycobacterium chelonae</i>	7	6	20	9	9
	<i>Mycobacterium fortuitum</i>	1	7	2	7	2
	<i>Mycobacterium gordonae</i>		1			1
	<i>Mycobacterium kansasii</i>			1	2	
	<i>Mycobacterium malmoense</i>	1			1	1
	<i>Mycobacterium peregrinum</i>		1		2	1
	<i>Mycobacterium tuberculosis</i>	15	23	23	46	42
	<i>Mycobacterium xenopi</i>				3	
<b>Myroides spp</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>5</b>
	<i>Myroides odoratus</i>			1		5
<b>Neisseria spp</b>		<b>85</b>	<b>57</b>	<b>73</b>	<b>73</b>	<b>44</b>
	<i>Neisseria gonorrhoeae</i>	31	17	20	14	29
	<i>Neisseria lactamica</i>	1	1			1

	<i>Neisseria mucosa</i>	3	1		1	
	<i>Neisseria pharyngis</i>	1				
	<i>Neisseria polysacchareae</i>			3	2	2
	<i>Neisseria sicca</i>	5	1	2	3	7
	<i>Neisseria subflava</i>	2	1		2	1
<b>Nocardia spp</b>		3	1	6	4	2
<b>Ochrobactrum spp</b>		50	3	2	2	4
	<i>Ochrobactrum anthropi</i>	49				
	<i>Ochrobactrum sp</i>	1	3	2	2	4
<b>Oerskovia spp</b>		0	1	3	0	1
<b>Oligella spp</b>		1	2	2	3	3
	<i>Oligella ureolytica</i>	1	1	1	2	1
	<i>Oligella urethralis</i>		1			2
<b>Pantoea spp</b>		26	21	18	15	19
	<i>Pantoea agglomerans (Erwinia herbicola)</i>	26	21	18	15	19
<b>Pasteurella spp</b>		66	74	19	21	63
	<i>Pasteurella aerogenes</i>		1			
	<i>Pasteurella haemolytica</i>	3	6	5	3	1
	<i>Pasteurella multocida</i>	49	47			50
	<i>Pasteurella pneumotropica</i>	2	4	5	9	2
<b>Pediococcus spp</b>		4	3	4	3	6
<b>Peptococcus spp</b>		17	23	25	12	17
<b>Peptostreptococcus spp</b>		59	68	77	81	80
	<i>Peptostreptococcus asaccharolyticus</i>	26	20	32	18	35
	<i>Peptostreptococcus prevotti</i>	7	11	12	24	16
	<i>Peptostreptococcus productus</i>	1	1			1
<b>Plesiomonas spp</b>		0	0	0	2	1
	<i>Plesiomonas shigelloides</i>				2	1
<b>Porphyromonas spp</b>		5	4	3	5	0
	<i>Porphyromonas asaccharolytica</i>	4	3	2	3	
<b>Prevotella spp</b>		63	82	73	92	84
	<i>Prevotella bivia</i>	2	6	4	4	3
	<i>Prevotella buccae</i>	4	5	6	4	5
	<i>Prevotella denticola</i>		1		2	
	<i>Prevotella disiens</i>	2	1		1	3
	<i>Prevotella intermedia</i>	2	2		1	5
	<i>Prevotella loescheii</i>	6	10	8	17	11
	<i>Prevotella melaninogenica</i>	13	14	6	11	12
	<i>Prevotella oralis</i>	10	25	14	16	21
<b>Propionibacterium spp</b>		13	0	50	36	48
	<i>Propionibacterium acnes</i>	13		48	36	47
	<i>Propionibacterium propionica</i>			2		1

<b>Proteus spp</b>		<b>10</b>	<b>18</b>	<b>8</b>	<b>10</b>	<b>11</b>
	<i>Proteus penneri</i>	3	11	4	6	8
<b>Providencia spp</b>		<b>35</b>	<b>32</b>	<b>31</b>	<b>23</b>	<b>41</b>
	<i>Providencia alcalifaciens</i>	2	1		1	3
	<i>Providencia rettgeri (Proteus rettgeri)</i>	17	17	19	18	28
	<i>Providencia rustigianii</i>	1	2	1	1	
<b>Pseudomonas spp</b>		<b>82</b>	<b>29</b>	<b>27</b>	<b>38</b>	<b>7</b>
	<i>Pseudomonas alcaligenes</i>	7	9	6	3	7
	<i>Pseudomonas stutzeri</i>	48				
<b>Rahnella spp</b>		<b>1</b>	<b>3</b>	<b>9</b>	<b>2</b>	<b>4</b>
<b>Ralstonia spp</b>		<b>11</b>	<b>9</b>	<b>15</b>	<b>14</b>	<b>16</b>
	<i>Ralstonia pickettii</i>	11	9	15	14	16
<b>Rhodococcus spp</b>		<b>9</b>	<b>14</b>	<b>17</b>	<b>17</b>	<b>22</b>
	<i>Rhodococcus equi (Corynebacterium equi)</i>		2			
<b>Roseomonas spp</b>		<b>1</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>6</b>
	<i>Roseomonas gilardii</i>			3	1	1
<b>Rothia spp</b>		<b>2</b>	<b>3</b>	<b>7</b>	<b>12</b>	<b>13</b>
	<i>Rothia dentocariosia</i>	2	3	3	6	5
<b>Salmonella spp</b>		<b>60</b>	<b>79</b>	<b>47</b>	<b>79</b>	<b>112</b>
	<i>Salmonella agona</i>	1	1		1	1
	<i>Salmonella anatum</i>	1				1
	<i>Salmonella apapa</i>				1	
	<i>Salmonella arizonae</i>			1		1
	<i>Salmonella blegdam</i>		1			
	<i>Salmonella bovis-morbificans</i>	1			1	1
	<i>Salmonella braenderup</i>	2				
	<i>Salmonella brandenburg</i>			2		
	<i>Salmonella bredeney</i>					1
	<i>Salmonella chester</i>	1				
	<i>Salmonella cholerae-suis</i>	1	1	1	1	
	<i>Salmonella colindale</i>				1	
	<i>Salmonella corvallis</i>		2	1		
	<i>Salmonella derby</i>		1		1	
	<i>Salmonella dublin</i>	5	6	3	1	5
	<i>Salmonella durham</i>		1	1		
	<i>Salmonella eastbourne</i>	1	1			
	<i>Salmonella enteritidis</i>				41	46
	<i>Salmonella essen</i>			1		
	<i>Salmonella give</i>			1		1
	<i>Salmonella gold-coast</i>		1			1
	<i>Salmonella hadar</i>		2		1	1
	<i>Salmonella heidelberg</i>	1				2

	<i>Salmonella hull</i>			1		
	<i>Salmonella ibadan</i>		1		1	
	<i>Salmonella infantis</i>	1				1
	<i>Salmonella java</i>	1	2		2	
	<i>Salmonella kentucky</i>		1			1
	<i>Salmonella kibusi</i>		1			
	<i>Salmonella kua</i>				1	
	<i>Salmonella limete</i>			1		
	<i>Salmonella lingwala</i>			1		
	<i>Salmonella mbandaka</i>					1
	<i>Salmonella minnesota</i>					1
	<i>Salmonella montevideo</i>	1	1			1
	<i>Salmonella muenster</i>				1	
	<i>Salmonella napoli</i>		1	1		1
	<i>Salmonella newport</i>		3	1		
	<i>Salmonella ohio</i>			1		
	<i>Salmonella oranienburg</i>	2	1	1	1	1
	<i>Salmonella oslo</i>		1			
	<i>Salmonella panama</i>	1	1	1		1
	<i>Salmonella paratyphiB</i>	2	1	1	1	3
	<i>Salmonella poona</i>					1
	<i>Salmonella richmond</i>	1				
	<i>Salmonella ried</i>		1			
	<i>Salmonella saint-paul</i>				1	
	<i>Salmonella san-diego</i>		1	1		1
	<i>Salmonella schwarzengrund</i>	1		1		3
	<i>Salmonella stanley</i>	1	4	2		1
	<i>Salmonella stanleyville</i>			1		
	<i>Salmonella tel-el-kebir</i>	2				
	<i>Salmonella thompson</i>	1	1			
	<i>Salmonella typhimurium</i>	23	31	12	12	22
	<i>Salmonella unnamed</i>	4	1	1		4
	<i>Salmonella virchow</i>	4	9	9	10	8
	<i>Salmonella zanzibar</i>	1				
<b>Serratia spp</b>		<b>20</b>	<b>39</b>	<b>32</b>	<b>31</b>	<b>28</b>
	<i>Serratia ficaria</i>	2	3		3	1
	<i>Serratia fonticola</i>	8	8	4	6	3
	<i>Serratia odorifera</i>	7	15	20	17	16
	<i>Serratia plymuthica</i>	1	8	3		4
	<i>Serratia proteamaculas</i>	1	1	2	1	3
	<i>Serratia rubidaea</i>	1	3	3	3	1
<b>Shewanella spp</b>		<b>7</b>	<b>4</b>	<b>3</b>	<b>7</b>	<b>4</b>

	<i>Shewanella putrefaciens (Pseudomonas putrefaciens)</i>	7	4	3	6	4
<b>Shigella spp</b>		<b>1</b>	<b>3</b>	<b>6</b>	<b>4</b>	<b>6</b>
	<i>Shigella boydii</i>			1	1	1
	<i>Shigella flexneri</i>		1	3	3	3
	<i>Shigella sonnei</i>	1	2	2		1
<b>Sphingobacterium spp</b>		<b>4</b>	<b>1</b>	<b>12</b>	<b>1</b>	<b>8</b>
	<i>Sphingobacterium multivorum</i>	3		4	1	2
	<i>Sphingobacterium spiritivorum</i>	1	1	6		2
	<i>Sphingobacterium thalophilum</i>					1
<b>Sphingomonas spp</b>		<b>39</b>	<b>43</b>	<b>7</b>	<b>5</b>	<b>1</b>
	<i>Sphingomonas paucimobilis</i>	36	38			
<b>Staphylococcus spp</b>		<b>6</b>	<b>6</b>	<b>8</b>	<b>4</b>	<b>3</b>
	<i>Staphylococcus saccharolyticus</i>	6	6	8	4	3
<b>Stenotrophomonas spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>10</b>
<b>Stomatococcus spp</b>		<b>9</b>	<b>9</b>	<b>5</b>	<b>7</b>	<b>3</b>
	<i>Stomatococcus mucilaginosus</i>	8	9	4	7	3
	<i>Streptobacillus moniliformis</i>	1		1		
<b>Streptococcus spp</b>		<b>419</b>	<b>449</b>	<b>418</b>	<b>425</b>	<b>399</b>
	<i>Streptococcus acidominimus</i>	44	47			26
	<i>Streptococcus alactolyticus</i>	3	1	1	3	5
	<i>Streptococcus anaerobic</i>	40	48	31	37	
	<i>Streptococcus anginosus(GroupA)</i>	18	26	22	20	41
	<i>Streptococcus anginosus(GroupC)</i>	3	4	4	1	5
	<i>Streptococcus anginosus(GroupF)</i>	3	7	6	2	2
	<i>Streptococcus anginosus(GroupG)</i>	13	17	17	11	17
	<i>Streptococcus anginosus(Ungroupable)</i>		8	6	6	7
	<i>Streptococcus bovis Biotype I</i>	20	20	17	12	20
	<i>Streptococcus bovis Biotypeli (Streptococcus gallolyticus)</i>	14	13	12	16	11
	<i>Streptococcus constellatus(GroupA)</i>	2	1	2	10	19
	<i>Streptococcus constellatus(GroupC)</i>	1	1		2	
	<i>Streptococcus constellatus(GroupF)</i>	3	2	1		7
	<i>Streptococcus constellatus(Ungroupable)</i>	8	6	7	9	6
	<i>Streptococcus dysgalactiae</i>	16	17	24	38	36
	<i>Streptococcus dysgalactiae Var equisimilis</i>	11	19	21	18	10
	<i>Streptococcus equi</i>	1	2	1		2
	<i>Streptococcus equinus</i>	12	9	7	7	8
	<i>Streptococcus equisimilis</i>	31	22	9	10	7
	<i>Streptococcus gordonii</i>	21	14	26	23	43
	<i>Streptococcus Group F</i>	37	22	47	43	36
	<i>Streptococcus infantarius Sp Nov</i>		1		1	3
	<i>Streptococcus mitior</i>	5	4	6	8	14

	<i>Streptococcus mitis</i> 1Orl	23	43	43	38	
	<i>Streptococcus mitis</i> 2Orli	4	7	7	7	7
	<i>Streptococcus mutans</i>	45	40	47	44	
	<i>Streptococcus sanguinis</i> 1Orl	3	7	7	16	22
	<i>Streptococcus sanguinis</i> 2Orli	1	3	1		3
	<i>Streptococcus sobrinus</i>		1	1		
	<i>Streptococcus suis</i> Type1(GroupS)				2	
	<i>Streptococcus suis</i> Type2(GroupR)			1		1
	<i>Streptococcus suis</i> Untyped	2		2	1	
	<i>Streptococcus uberis</i>	3	4	6	8	9
	<i>Streptococcus vestibularis</i>	28	31	33	32	32
	<i>Streptococcus zooepidemicus</i>			2		
<b>Streptomyces spp</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Suttonella spp</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
	<i>Suttonella indologenes</i>			1		
<b>Treponema spp</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>11</b>
<b>Veillonella spp</b>		<b>15</b>	<b>21</b>	<b>27</b>	<b>19</b>	<b>38</b>
<b>Vibrio spp</b>		<b>6</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>
	<i>Vibrio alginolyticus</i>	2				
	<i>Vibrio cholerae</i>	1				
	<i>Vibrio fluvialis</i>			1		2
	<i>Vibrio metschnikovii</i>	1				
	<i>Vibrio parahaemolyticus</i>	1		1		
	<i>Vibrio vulnificus</i>					2
<b>Weeksella spp</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
	<i>Weeksella virosa</i>	2	2	2	2	2
<b>Wolinella spp</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Yersinia spp</b>		<b>13</b>	<b>13</b>	<b>12</b>	<b>17</b>	<b>7</b>
	<i>Yersinia aldovae</i>	1				
	<i>Yersinia enterocolitica</i>	8	12	8	15	6
	<i>Yersinia frederiksenii</i>	1	1			
	<i>Yersinia pseudotuberculosis</i>	2		3	2	
	<b>TOTAL UNCOMMON PATHOGENS</b>	<b>3035</b>	<b>3078</b>	<b>3088</b>	<b>3163</b>	<b>3405</b>
	<b>All pathogens associated with bacteraemia</b>	<b>87101</b>	<b>88622</b>	<b>92072</b>	<b>99879</b>	<b>111626</b>
	<b>% of total bacteraemias associated with uncommon pathogens</b>	<b>3.5%</b>	<b>3.5%</b>	<b>3.4%</b>	<b>3.2%</b>	<b>3.1%</b>

\* Data extracted May 5 2009

\*\* Genus includes isolates of organisms not identified at species level

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### Land contamination and public health

A new document [1] prepared by the Agency's Chemical Hazards and Poisons Division aims to introduce environmental public health practitioners to the process used for dealing with land contamination. The document aims to provide an overview of public health issues surrounding land contamination and the public health risk assessment process. It is hoped that this will be a useful guide to the public health issues surrounding land contamination and the regulatory processes used to examine and mitigate the impacts of land contamination.

This manual is intended to be useful to all those with a public health remit. It is intended that this document will prove a useful reference guide to public health professionals with various levels of experience in this area.

#### Reference

1. HPA. *An introduction to land contamination for public health professionals*, prepared by Chemical Hazards and Poisons Division (Cardiff), April 2009. Available via the Chemicals and Poisons pages (navigating via "Environment" to "Land") on the Agency website.

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