

Additional reports

Gonococcal surveillance

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The Australian Gonococcal Surveillance Programme (AGSP) reference laboratories in the various States and Territories report data on sensitivity to an agreed 'core' group of antimicrobial agents quarterly. The antibiotics currently routinely surveyed are penicillin, ceftriaxone, ciprofloxacin and spectinomycin, all of which are administered as single dose regimens and currently used in Australia to treat gonorrhoea. When *in vitro* resistance to a recommended agent is demonstrated in 5 per cent or more of isolates from a general population, it is usual to remove that agent from the list of recommended treatment.¹ Additional data are also provided on other antibiotics from time to time. At present all laboratories also test isolates for the presence of high level (plasmid-mediated) resistance to the tetracyclines, known as TRNG. Tetracyclines are however, not a recommended therapy for gonorrhoea in Australia. Comparability of data is achieved by means of a standardised system of testing and a program-specific quality assurance process. Because of the substantial geographic differences in susceptibility patterns in Australia, regional as well as aggregated data are presented. For more information see *Commun Dis Intell* 2002;26:61.

Reporting period 1 January to 31 March 2002

The Australian Gonococcal Surveillance Programme laboratories examined a total of 1,044 isolates in this quarter, an increase of about 10 per cent over the number in the same quarter in the past 3 years. Approximately 43.5 per cent of this total was from New South Wales where much of the increase occurred, 16.5 per cent from Victoria, 13.5 per cent from Queensland, 15.2 per cent from the Northern Territory, 8 per cent from Western Australia and 3 per cent from South Australia. Isolates from other centres were few.

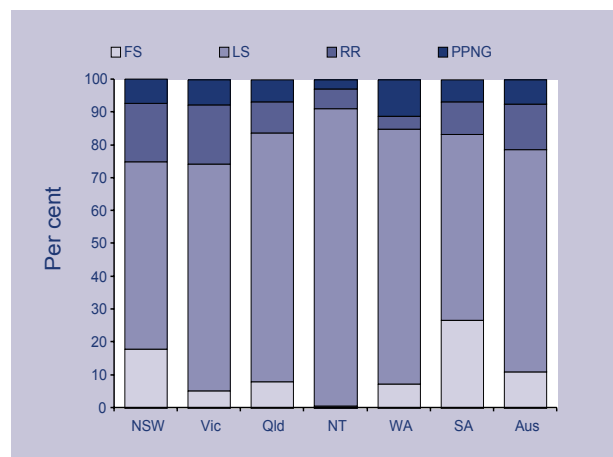
Penicillins

In this quarter approximately 21 per cent of all isolates were penicillin resistant by one or more mechanisms – 7 per cent penicillinase producing (PPNG) and 14 per cent by chromosomal mechanisms (CMRNG). The proportions are relatively unchanged from the same period in 2001. The proportion of penicillin resistant strains

ranged from 8.7 per cent in the Northern Territory to 26 per cent in Western Australia.

Figure 9 shows the proportions of gonococci fully sensitive (MIC \leq 0.03 mg/L), less sensitive (MIC 0.06 – 1 mg/L), relatively resistant (MIC \geq 1 mg/L) or else penicillinase producing aggregated for Australia and by state and territory. A high proportion of those strains classified as PPNG or else resistant by chromosomal mechanisms fail to respond to treatment with penicillins (penicillin, amoxicillin, ampicillin) and early generation cephalosporins.

Figure 9. Categorisation of gonococci isolated, Australia, 1 January to 31 March 2002, by penicillin susceptibility and region



FS fully sensitive to penicillin, MIC \leq 0.03 mg/L

LS less sensitive to penicillin, MIC 0.06 – 0.5 mg/L

RR relatively resistant to penicillin, MIC \geq 1 mg/L

PPNG penicillinase producing *Neisseria gonorrhoeae*

The number of PPNG isolated across Australia (n = 75) continued to decline and was slightly less in this quarter than in the corresponding period in 2001 (85). The highest proportion of PPNG was found in isolates from Western Australia (17%). PPNG were present in all jurisdictions including four (2.7%) in the Northern Territory.

More isolates were resistant to the penicillins by separate chromosomal mechanisms (n = 142). These CMRNG were especially prominent in Victoria (18% of isolates) and New South Wales (17%). Nine CMRNG were detected in the Northern Territory.

Ceftriaxone

Low numbers of isolates with decreased susceptibility to ceftriaxone (MICs 0.06 mg/L) were present in New South Wales.

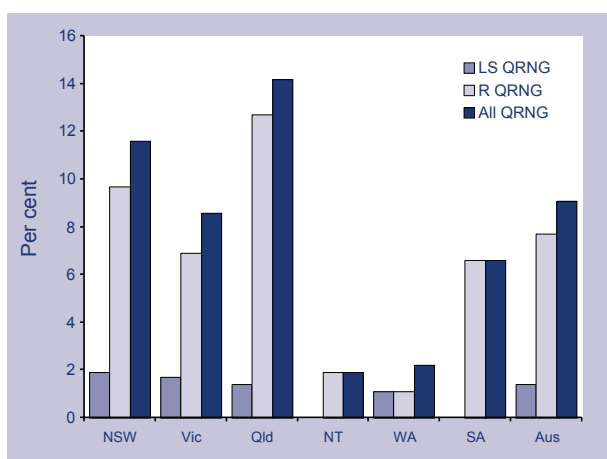
Spectinomycin

All isolates were susceptible to this injectable agent.

Quinolone antibiotics

The change seen from the same period last year was for fewer quinolone resistant *N. gonorrhoeae* (QRNG), but for those QRNG to have higher levels of resistance. The majority of QRNG (80 of 95, 84%) now exhibit higher level resistance. The total number (95) and proportion (9%) of all QRNG was about half that seen in the first quarter of 2001 (197 isolates, 21%) (Figure 10).

Figure 10. Distribution of *N. gonorrhoeae* showing quinolone resistance, Australia, 1 January to 31 March 2002



LS QRNG = Ciprofloxacin MICs 0.06 – 0.5 mg/L

R QRNG = Ciprofloxacin MICs \geq 1 mg/L

Quinolone resistant *N. gonorrhoeae* are defined as those isolates with an MIC to ciprofloxacin equal to or greater than 0.06 mg/L. QRNG are further subdivided into less sensitive (ciprofloxacin MICs 0.06 – 0.5 mg/L) or resistant (MIC \geq 1 mg/L) groups.

QRNG were again widely distributed. High rates were maintained in Queensland (14%) and New South Wales (11.6%). 8.6 per cent of Victorian and 6 per cent of South Australian isolates were QRNG. Forty-four of the New South Wales, 12 of the Victorian and 15 of the Queensland QRNG isolates exhibited high level resistance (MIC ciprofloxacin \geq 1 mg/L) and higher level QRNG were also seen in

the Northern Territory, South Australia and Western Australia. Local acquisition became increasingly prominent and MICs ranged up to 16mg/L.

High level tetracycline resistance

The number (136) and proportion (13%) of high level tetracycline resistant (TRNG) detected almost doubled from the corresponding period in 2001. TRNG represented between 12 and 17 per cent of isolates from Queensland, Victoria, Western Australia and New South Wales with four TRNG present in the Northern Territory.

Reference

1. World Health Organization. Management of sexually transmitted diseases. 1997; Document WHO/GPA/TEM94.1 Rev.1 p 37.

HIV and AIDS surveillance

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (Australian Capital Territory, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly Australian HIV Surveillance Report, and annually in 'HIV/AIDS viral hepatitis and sexually transmissible infections Australia annual surveillance report.' The reports are available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Internet: <http://www.med.unsw.edu.au/nchechr>. Telephone: +61 2 9332 4648. Facsimile: +61 2 9332 1837. For more information see Commun Dis Intell 2002;26:59.

HIV and AIDS diagnoses and deaths following AIDS reported for 1 January to 31 March 2002, as reported to 30 June 2002, are included in this issue of Communicable Diseases Intelligence (Tables 7 and 8).

Table 7. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 January to 31 March 2002, by sex and State or Territory of diagnosis

	Sex	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Totals for Australia			
										This period 2002	This period 2001	Year to date 2002	Year to date 2001
HIV diagnoses	Female	0	4	1	5	3	0	9	2	24	26	24	26
	Male	1	63	1	18	3	0	56	4	146	168	146	168
	Not reported	0	1	0	0	0	0	0	0	1	0	1	0
	Total ¹	1	71	2	23	6	0	65	6	174	195	174	195
AIDS diagnoses	Female	0	0	0	1	1	0	0	1	3	4	3	4
	Male	0	6	1	8	6	0	4	3	28	31	28	31
	Total ¹	0	7	1	9	7	0	4	4	32	36	32	36
AIDS deaths	Female	0	0	0	0	2	0	0	0	2	2	2	2
	Male	0	6	0	0	2	0	0	2	10	13	10	13
	Total ¹	0	6	0	0	4	0	0	2	12	15	12	15

1. Persons whose sex was reported as transgender are included in the totals.

Table 8. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 31 March 2002, by sex and State or Territory

	Sex	State or Territory								
		ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Australia
HIV diagnoses	Female	28	678	11	185	75	5	259	134	1,375
	Male	232	11,640	113	2,170	730	80	4,257	984	20,206
	Not reported	0	242	0	0	0	0	24	0	266
	Total ¹	260	12,585	124	2,362	805	85	4,556	1,124	21,901
AIDS diagnoses	Female	9	208	0	52	29	3	79	30	410
	Male	88	4,827	38	890	369	45	1,729	384	8,370
	Total ¹	97	5,048	38	944	398	48	1,817	416	8,806
AIDS deaths	Female	4	122	0	35	18	2	57	19	257
	Male	71	3,348	25	592	244	30	1,313	266	5,889
	Total ¹	75	3,479	25	629	262	32	1,377	286	6,165

1. Persons whose sex was reported as transgender are included in the totals.

Childhood immunisation coverage

Tables 9, 10 and 11 provide the latest quarterly report on childhood immunisation coverage from the Australian Childhood Immunisation Register (ACIR).

The data show the percentage of children fully immunised at 12 months of age for the cohort born between 1 January and 31 March 2001, at 24 months of age for the cohort born between 1 January and 31 March 2000, and at 72 months of age for the cohort born between 1 January and 31 March 1996 according to the Australian Standard Vaccination Schedule. As at 30 June 2002, all children assessed for coverage at six years of age (those between 72 - <75 months of age), had a date of birth equal to or greater than the commencement date of the ACIR, enabling immunisation coverage reports to be extracted for this oldest age group.

A full description of the methodology used can be found in *Commun Dis Intell* 1998;22:36-37.

Commentary on the trends in ACIR data are provided by the National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases. For further information please contact the NCIRS at: telephone: +61 2 9845 1256, E-mail: brynleyh@chw.edu.au.

Immunisation coverage for children 'fully immunised' by 12 months for Australia has decreased marginally from the last quarter by 0.3 per cent to 90.2 per cent (Table 9). The change in 'fully immunised' coverage varied by state and territory. The Australian Capital Territory (-1.6%) and the Northern Territory (-1.1%) experienced the greatest decreases in coverage. All other states experienced only marginal increases or decreases in coverage over the quarter. Coverage is hovering around the 90 per cent level in almost all jurisdictions with the highest level in Tasmania (91.7%) and the lowest in Western Australia (88.5%). Despite this, Western Australia was the only jurisdiction that experienced an increase (+0.1%) in Hib coverage at 12 months of age. The Australian Capital Territory (-2.0%), New South Wales (-1.4%) and the Northern Territory (-1.4%) experienced the greatest decrease in Hib coverage.

Table 9. Percentage of children immunised at 1 year of age, preliminary results by disease and State for the birth cohort 1 January to 31 March 2001; assessment date 30 June 2002

Vaccine	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Number of children	1,008	21,139	902	12,141	4,376	1,460	14,882	6,082	61,990
Diphtheria, Tetanus and Pertussis (%)	91.2	91.7	89.7	91.7	92.1	93.0	92.5	90.2	91.8
Poliomyelitis (%)	91.2	91.7	89.4	91.6	92.1	92.9	92.5	90.1	91.7
<i>Haemophilus influenzae</i> type b (%)	92.7	93.1	94.7	93.7	94.3	95.2	94.3	93.2	93.7
Hepatitis B (%)	93.8	94.3	95.1	94.1	94.9	94.7	93.7	92.6	94.0
Fully immunised (%)	89.8	89.9	88.6	90.6	90.9	91.7	90.7	88.5	90.2
Change in fully immunised since last quarter (%)	+1.6	-0.7	-1.1	-0.2	+0.3	+0.7	-0.3	+0.5	-0.3

The decrease in coverage at 12 months of age for most jurisdictions and for all vaccines indicates that coverage appears to have reached a plateau for this age group. The trend in 'fully immunised' coverage at 12 months of age has been slightly downward since early 2001 when it peaked at 91.5 per cent, 1.3 per cent higher than the latest estimate. Whilst this decrease over a 12-month period is not substantial, it is of concern as some jurisdictions have now dropped back to just under 90 per cent coverage. Although there has been adverse media coverage relating to the MMR vaccine, this should not have impacted on coverage at 12 months of age in any direct way.

In comparison, immunisation coverage for measured by 'fully immunised' at 24 months for Australia increased marginally from the last quarter by 0.3 percentage points to 88.1 per cent (Table 10). Coverage increased from the previous quarter in 5 states and territories, South Australia (+2.3%), Tasmania (+2.2%), the Northern Territory (+1.4%), New South Wales (+1.1%) and the Australian Capital Territory (+0.1%). Victoria, Queensland, and Western Australia all experienced small decreases in coverage over the quarter. Tasmania was the first state to achieve greater than 90 per cent coverage for 'fully immunised' at 24 months of age. Almost all other states are approaching 90 per cent coverage, most within 1–2 percentage points of this target. Coverage for individual vaccines by 24 months for Australia, however, is much greater than for 'fully immunised' with coverage for Hib at 95 per

cent and coverage for poliomyelitis (OPV) and measles-mumps-rubella (MMR) vaccines approaching 95 per cent. At the jurisdiction level, there were no important changes in coverage except for the significant increase in diphtheria-tetanus-pertussis (DTP) vaccine coverage at 24 months for Tasmania (+2.7%) and the Northern Territory (+2.0%).

Table 11 shows immunisation coverage estimates for 'fully immunised' and for individual vaccines by 6 years of age for Australia and by State or Territory. These are the first official ACIR figures of immunisation coverage estimates for this age group to be published. Coverage estimates are presented for DTP (the 5th dose), OPV (the 4th dose) and MMR (the 2nd dose). 'Fully immunised' coverage at 6 years of age for Australia is 80.6 per cent. Coverage for this age group varies significantly by state or territory. The Northern Territory has the lowest coverage at 72 per cent, whilst Victoria has the highest coverage at 83 per cent. Coverage by individual vaccine also varies with coverage greater for the 5th dose of DTP (84%) and the 4th dose of OPV (84%) than for the 2nd dose of MMR (82%). This pattern exists across all jurisdictions. However, the recently published NCIRS study on MMR coverage shows that the ACIR MMR coverage figure is likely to be an under-estimate of the true coverage level at 6 years of age, which is actually 4 per cent greater at 86 per cent for an earlier birth cohort.¹

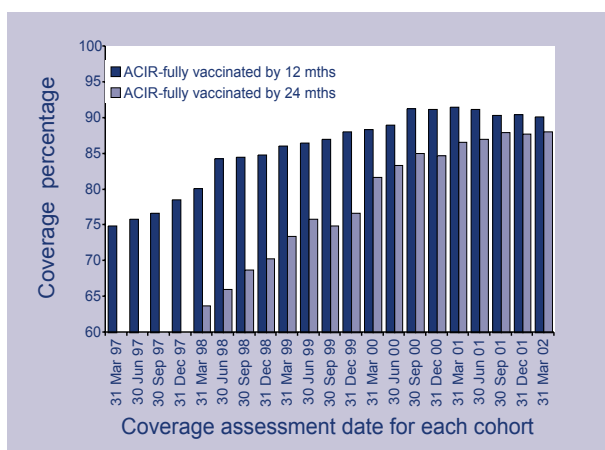
Table 10. Proportion of children immunised at 2 years of age, preliminary results by disease and State for the birth cohort 1 January to 31 March 2000; assessment date 30 June 2002¹

Vaccine	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Number of children	987	21,864	894	12,613	4,513	1,509	15,311	6,274	63,965
Diphtheria, Tetanus, Pertussis (%)	90.2	90.4	88.8	90.6	91.0	93.1	90.6	87.7	90.3
Poliomyelitis (%)	93.9	94.0	95.9	93.9	95.4	95.6	94.8	93.1	94.2
<i>Haemophilus influenzae</i> type b (%)	94.7	95.0	95.0	94.5	95.6	96.2	95.5	93.7	95.0
Measles, Mumps, Rubella (%)	93.4	93.1	95.2	92.9	94.2	94.3	93.7	91.4	93.2
Fully immunised (%)²	88.6	88.0	87.2	88.5	89.8	91.8	88.3	85.0	88.1
Change in fully immunised since last quarter (%)	+0.1	+1.1	+1.3	-0.3	+2.3	+2.2	-0.5	-1.3	+0.3

1. These data relating to 2 year-old children should be considered as preliminary. The proportions shown as 'fully immunised' appear low when compared with the proportions for individual vaccines. This is at least partly due to poor identification of children on immunisation encounter forms.

Figure 11 shows the trends in vaccination coverage from the first ACIR-derived published coverage estimates in 1997 to the current estimates. There is a clear trend of increasing vaccination coverage over time for children aged 12 months and 24 months. However, the rate of increase in coverage is slowing with the curve beginning to flatten out and turn downward slightly for estimates at 12 months of age.

Figure 11. Trends in vaccination coverage, Australia, 1997 to 2002, by age cohorts



Acknowledgment

The table figures were provided by the Health Insurance Commission (HIC), to specifications provided by the Commonwealth Department of Health and Ageing. For further information on these figures or data on the Australian Childhood Immunisation Register please contact the Immunisation Section of the HIC: Telephone: +61 2 6124 6607.

Reference

1. National Centre for Immunisation Research and Surveillance (NCIRS). Immunisation Coverage: Australia 2001. Report. Canberra: Department of Health and Ageing, 2001. <http://www.health.gov.au/pubhth/immunise/report.pdf>

Table 11. Percentage of children immunised at 6 years of age, preliminary results by disease and State for the birth cohort 1 January to 31 March 1996; assessment date 30 June 2002

Vaccine	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Number of children	1,031	21,859	15,885	12,715	4,818	6,621	1,555	881	65,365
Diphtheria, Tetanus, Pertussis (%)	83.7	83.2	85.0	84.5	84.7	81.2	82.4	75.8	83.7
Poliomyelitis (%)	83.7	83.2	85.6	84.9	84.9	81.3	83.1	76.4	84.0
Measles, Mumps, Rubella (%)	82.7	80.0	85.0	84.1	83.4	80.6	81.4	76.4	82.4
Fully immunised (%)	81.3	78.3	83.3	82.6	81.8	78.3	79.7	72.0	80.6

National Enteric Pathogens Surveillance System

The National Enteric Pathogens Surveillance System (NEPSS) collects, analyses and disseminates data on human enteric bacterial infections diagnosed in Australia. These pathogens include *Salmonella*, *E. coli*, *Vibrio*, *Yersinia*, *Plesiomonas*, *Aeromonas* and *Campylobacter*. Communicable Diseases Intelligence reports only on *Salmonella*.

Data are based on reports to NEPSS from Australian laboratories of laboratory-confirmed human infection with *Salmonella*. *Salmonella* are identified to the level of serovar and, if applicable, phage-type. Infections apparently acquired overseas are included. Multiple isolations of a single *Salmonella* serovar/phage-type from one or more body sites during the same episode of illness are counted once only. The date of the case is the date the primary diagnostic laboratory isolated a *Salmonella* from the clinical sample.

Note that the historical quarterly mean count should be interpreted cautiously, and is affected by surveillance artefacts such as newly designated and incompletely typed *Salmonella*.

We thank contributing laboratories and scientists.

Reported by Joan Powling (NEPSS Co-ordinator) and Mark Veitch (Public Health Physician), Microbiological Diagnostic Unit – Public Health Laboratory, Department of Microbiology and Immunology, University of Melbourne. For further information please contact NEPSS at the above address or on Telephone: +61 3 8344 5701, Facsimile: +61 3 8344 5701.

Reports to the National Enteric Pathogens Surveillance System of *Salmonella* infection for 1 April to 30 June 2002 are included in Table 12. Data include cases reported and entered by 20 July 2002. Counts are preliminary, and subject to adjustment after completion of typing and reporting of further cases to NEPSS. The top 25 *Salmonella* types identified in each Australian State and Territory in the same period is shown in Table 13.

During the second quarter of 2002, the 25 most common *Salmonella* types in Australia accounted for 1,310 (67%) of all 1,960 reported human infections.

Table 12. Reports to the National Enteric Pathogens Surveillance System of *Salmonella* isolated from humans during the period 1 January to 31 March 2002, as reported to 15 April 2002

	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total all <i>Salmonella</i> for quarter	20	508	84	639	150	35	359	165	1,960
Total contributing <i>Salmonella</i> types	11	100	46	108	47	10	72	65	221

Table 13. Top 25 Salmonella types identified in Australian States and Territories, 1 April to 30 June 2002

National	Salmonella type	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Total 2nd quarter 2002	Last 10 years mean 2nd quarter	Year to date 2002	Year to date 2001	Total 2001
1	S. Typhimurium 135	4	55	3	18	2	3	66	21	172	109	445	361	636
2	S. Typhimurium 9	1	38	1	27	1	0	61	10	139	99	445	258	399
3	S. Typhimurium 170	1	32	0	23	1	0	69	1	127	14	265	39	148
4	S. Saintpaul	0	8	3	59	7	0	11	13	101	79	261	173	289
5	S. Typhimurium 126	1	42	1	6	7	1	16	1	75	20	140	129	313
6	S. Virchow 8	0	1	0	66	0	0	2	0	69	30	225	161	245
7	S. Bovismorbificans 24	6	56	0	2	0	0	0	4	68	3	75	13	18
8	S. Birkenhead	0	25	1	27	0	0	1	1	55	50	171	163	253
9	S. Typhimurium 8	0	0	1	2	43	0	0	6	52	10	60	16	26
10	S. Chester	0	9	6	27	2	1	1	4	50	37	107	99	166
11	S. Hvitvingfoss	0	2	1	39	0	1	2	0	45	15	110	57	89
12	S. Muenchen	0	10	2	16	1	0	3	9	41	33	87	88	125
13	S. Mississippi	0	0	0	1	2	24	4	0	31	13	69	97	123
14	S. Aberdeen	0	0	0	26	1	0	2	0	29	26	100	60	88
15	S. Typhimurium U290	1	11	0	1	0	1	13	2	29	<1	56	7	26
16	S. Virchow 34	0	6	0	19	1	0	2	0	28	14	69	52	87
17	S. Potsdam	0	13	0	11	0	0	2	2	28	13	54	40	60
18	S. Agona	0	16	0	7	2	1	1	1	28	13	53	30	56
19	S. Waycross	0	7	0	18	0	0	0	0	25	25	75	33	54
20	S. Montevideo	0	11	0	7	0	0	5	0	23	6	55	17	27
21	S. Typhimurium 12	0	3	0	8	4	0	5	0	20	10	42	37	62
22	S. Ball	0	0	18	2	0	0	0	0	20	6	41	16	35
23	S. Infantis	0	7	0	4	2	0	5	1	19	27	61	70	123
24	S. Mgulani	0	0	3	15	0	0	0	0	18	10	48	36	67
25	S. Typhimurium 197	2	9	0	6	0	0	1	0	18	<1	22	4	8