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Outbreak of Salmonella Newport

Between 2nd September and 22nd October 2004, 129 confirmed or presumptive cases of Salmonella Newport have been reported from across Northern Ireland, with 22 people requiring hospital admission (Figure 1). Outbreaks due to a microbiologically identical strain have been reported from Grimsby, Birmingham and Coventry in England, with smaller numbers also from Scotland and Isle of Man.

An initial descriptive epidemiological study identified lettuce and other salad vegetables as the likely source of the outbreak, with the majority of those affected having eaten outside the home in the week prior to illness. A case control study confirmed the hypothesis that consumption of lettuce from a variety of catering outlets was associated with illness (OR 4.65;95% CI 1.09-19.91; $p=0.038$). While some cases only reported eating lettuce at home this hypothesis was not tested.

To date, all samples of lettuce and other salad vegetables have tested negative for salmonella. Environmental Health Officers undertook an extensive targeted sampling programme and are continuing to identify the supply chain of such products into and within Northern Ireland.

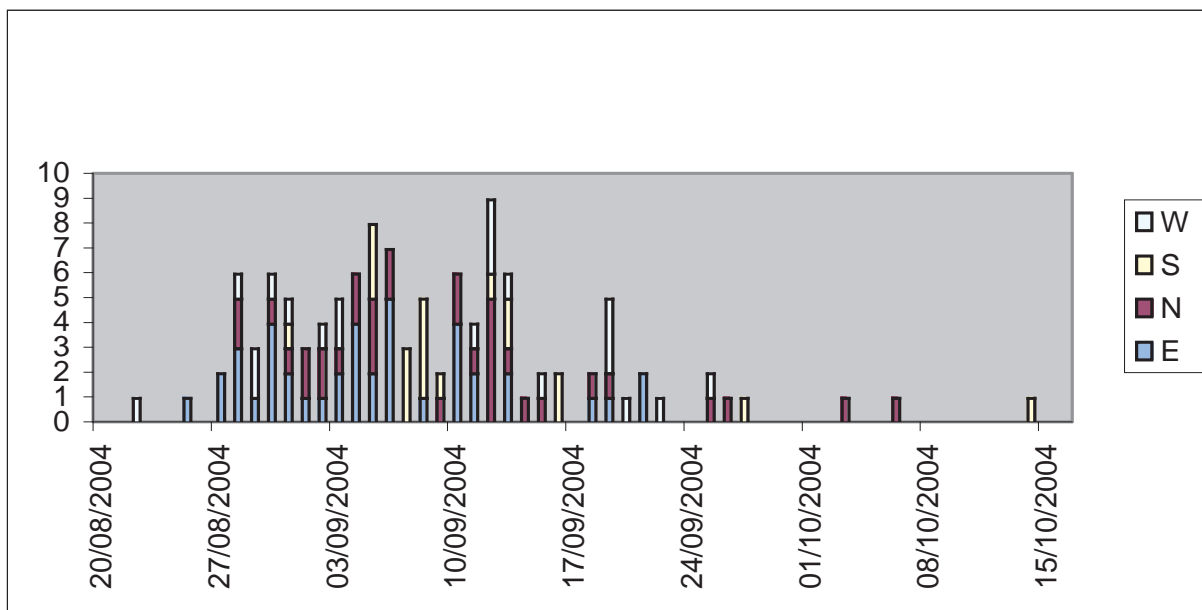
Press statements have been issued to emphasise the importance of washing salad vegetables prior to their consumption.

CDSC (NI) is working closely with public health and environmental health colleagues from across Northern Ireland, the Food Standards Agency and as part of the national outbreak control team with HPA Colindale.

Salmonella Newport is a relatively uncommon infection in Northern Ireland with up to 3 cases reported annually in recent years. Around 150 cases are reported each year in England and Wales with chicken and turkey the most common sources of infection. Lettuce was implicated in an outbreak in 2001.¹

¹ CDR Weekly 2004; 14(38)

Figure 1: S. newport cases (possible and confirmed) by date of onset of illness for NI HSSBs, 22/10/04



AMR UPDATE

Six Northern Ireland laboratories are now fully reporting blood isolates of *S aureus* and blood and/or CSF isolates of *S pneumoniae* through the European Antimicrobial Resistance Surveillance (EARSS) network (www.earss.rivm.nl). This represents coverage in excess of 75% of the Northern Ireland population. It is anticipated that the remaining laboratories will commence reporting before January 2005. Once all laboratories are actively participating in this surveillance programme, it is hoped that the information collected can also be used to inform the mandatory *S aureus* surveillance scheme. It is intended that this data should form the basis of six-monthly reports, and, as more data becomes available, trends should become more evident.

S aureus

During the quarter January – March 2004, 70 reports of *S aureus* bloodstream isolates were reported by participating EARSS laboratories. Thirty-seven of these (53%) were reported as being resistant to oxacillin/methicillin. No resistances to vancomycin or teicoplanin were reported.

The mean age of cases was 67 years, whereas the median was 73 years. Sixty-eight isolates were reported as being clinically significant, and the significance of the remaining two cases was not determined. The source ward of patients is shown in Table 1. Renal patients accounted for 27% of all cases. 'Other' sources were ENT and stroke unit.

Source Ward*	Number	% total
Renal	19	27.1%
Internal/Medicine	18	25.7%
Not Stated	12	17.1%
ICU/HDU	9	12.9%
Surgical	6	8.6%
Haematology	1	1.4%
Geriatric	1	1.4%
Cardiac	1	1.4%
Orthopaedics	1	1.4%
Other	2	2.8%
All	70	100.0%

* source ward is defined as the ward in which the patient was occupant when the blood culture was requested

No patients were known to have been transferred to hospital directly from a nursing home. Twelve infections (17%) were known to have been associated with an intravascular device.

MRSA v MSSA

Thirty-eight isolates (54%) were resistant to methicillin/oxacillin. The mean and median ages of patients with MRSA infections were higher than those reported for total *S aureus* infections (see above), and for MSSA infections. Patients with MRSA infections had mean and median ages of 70 years and 76 years respectively, compared with 64 years and 71 years respectively for patients with MSSA infections. These differences are notable, but not statistically significant. The proportion of reports from specific source wards/specialties was similar for MRSA and MSSA in most cases. The most notable exception was the number of reports received from ICU/HDU patients, which were twice as high (numerically and proportionately) for MRSA than for MSSA (Tables 2 & 3)

Table 2: Source ward/speciality of patients with MSSA - positive blood cultures, January - March 2004

Source Ward*	Number	% total
Renal	10	14.1%
Internal/Medicine	11	15.5%
Not Stated	4	5.6%
ICU/HDU	3	4.2%
Surgical	3	4.2%
Haematology	0	0.0%
Geriatric	0	0.0%
Cardiac	1	1.4%
Orthopaedics	0	0.0%
Other	1	1.4%
All	33	46.5%

Table 3: Source ward/speciality of patients with MRSA - positive blood cultures, January - March 2004

Source Ward*	Number	% total
Renal	9	12.7%
Internal/Medicine	7	9.9%
Not Stated	8	11.3%
ICU/HDU	6	8.5%
Surgical	3	4.2%
Haematology	1	1.4%
Geriatric	1	1.4%
Cardiac	0	0.0%
Orthopaedics	1	1.4%
Other	1	1.4%
All	37	52.1%

S pneumoniae

To date, five participating laboratories have reported *S pneumoniae* isolated from blood or CSF. During the period January to March 2004, 16 isolates were reported by five laboratories. Of these, only two isolates were reported as exhibiting intermediate susceptibility to penicillin. All other isolates were susceptible. Mean and median ages were 61 and 67 years respectively. Only two children under five years were included in reports.

Since the commencement of data collection for EARSS (1 January 2003: 1 laboratory; July 2003: 4 laboratories), 70 isolates of *S pneumoniae* have been reported by participating laboratories (data not shown). The mean age of patients was 49 years, with a median of 57 years. There were 15 reports (21%) of infection in children under five years, eight of which were less than one year of age. Only one report of penicillin resistance was received (1.4%), although there were an additional five reports (7%) of intermediate susceptibility.

These figures differ from those recorded through normal voluntary laboratory reporting, which previously suggested resistance levels of approximately 4.5% for *S pneumoniae* isolates in Northern Ireland (Table 4). As more data is collected through this scheme by the participation of more laboratories, the data will become more reliable and representative. The figures shown here would suggest that there are fewer resistant organisms, but more intermediately resistant organisms than previously reported through normal laboratory reporting.

Pen ^R Pneumococci		Number				Total				
		S	I	R	PNSP	N	S	I	R	PNSP
Ireland	1999	124	26	4		154	80.5%	16.9%	2.6%	
	2000	176	16	10		202	87.1%	7.9%	5.0%	
	2001	216	24	4	2	246	87.8%	9.8%	1.6%	0.8%
	2002	246	28	3	1	278	88.5%	10.1%	1.1%	0.4%
	2003	190	25	6		221	86.0%	11.3%	2.7%	0.0%
United Kingdom	1999	222	8	9		239	92.9%	3.3%	3.8%	
	2000	471	11	20		502	93.8%	2.2%	4.0%	
	2001	544	10	15		569	95.6%	1.8%	2.6%	
	2002	586	11	18		615	95.3%	1.8%	2.9%	
	2003	513	10	9		532	96.4%	1.9%	1.7%	
Northern Ireland	1999	110	0	0		110	100.0%	0.0%	0.0%	
	2000	114	1	5		120	95.0%	0.8%	4.2%	
	2001	140	3	2		145	96.6%	2.1%	1.4%	
	2002	125	1	6		132	94.7%	0.8%	4.5%	
	2003	161	2	8		171	94.2%	1.2%	4.7%	

1. These data are taken from EARSS reporting. Laboratories covering 80% of the populations currently report to EARSS in Ireland

2. These data are taken from EARSS reporting. Figures for 1999-2001 are taken from 26 reporting laboratories covering 13% of the population. Data for 2002 were based on 22 contributing laboratories.

3. These data are based on normal laboratory reporting of all laboratories covering 100% of the population.

Note: Penicillin non-susceptibility=non susceptible to oxacillin or penicillin

All stated interpretations of sensitive/susceptible, intermediate and resistant are based on the interpretation of the contributing laboratory

Monthly Surveillance Figures for Creutzfeldt-Jakob Disease

Table 5 shows surveillance figures for definite and probable cases of Creutzfeldt-Jakob disease (CJD) in the United Kingdom up to 2 August 2004. In 2003, there were 159 referrals to the CJD Surveillance Unit with 18 confirmed as vCJD. To date in 2004 there have been 55 referrals to the unit with 3 confirmed as vCJD.

While this version of the table does not show figures for years prior to 1995 (the first year for which there are vCJD confirmations), a more extended version can be accessed on the Department of Health website (most easily at the Department's press release page <http://www.dh.gov.uk/PublicationsAndStatistics/PressReleases/fs/en>).

Table 5: Definite and probable CJD cases in the UK from 1995 to 2 August 2004

Year	Referrals for investigation	Deaths					vCJD confirmed	vCJD Probable still alive
		Sporadic	Iatrogenic	Familial	GSS*			
1995	87	35	4	2	3	3	-	
1996	134	40	4	2	4	10	-	
1997	161	60	6	4	1	10	-	
1998	154	63	3	4	1	18	-	
1999	170	62	6	2	0	15	-	
2000	178	50	1	2	1	28	-	
2001	179	58	4	3	2	20	-	
2002	163	72	0	4	1	17	-	
2003	159	73	5	4	2	18	-	
2004	55	18	0	0	1	3	5	
Total						142		

* Gerstmann-Straussler-Scheinker syndrome

Foodborne and gastro-intestinal outbreaks: January - June 2004

Outbreak surveillance is primarily based on reports received from Consultants in Communicable Disease Control. During the first six months of 2004 CDSC (NI) was made aware of one foodborne outbreak affecting 6 people and 33 other gastrointestinal outbreaks affecting at least 1291 people. This compares with one foodborne outbreak and 36 gastrointestinal outbreaks for the same period in 2003.

There have been no salmonella outbreaks reported during the first two quarters of 2004. Prior to this the last salmonella outbreak was in March 2001. The last Monthly Report (Vol 13 No 7) includes details of a foodborne outbreak in July.

Viral or suspect viral infections were thought to be the cause of 19 non-foodborne outbreaks of gastroenteritis and in 14 instances, the outbreak was due to an unknown organism. These infections can spread rapidly in facilities such as hospitals and residential/nursing care facilities. There were 12 hospital outbreaks, 19 in residential/nursing homes, one in a nursery and one in an amusement park reported from January to June 2004. Thirteen of the confirmed viral outbreaks were secondary to Small Round Structured Viruses (SRSV) (Noroviruses) and were thought to be caused by person-to-person spread.

Table 6: General Outbreaks¹ of foodborne and other gastrointestinal illness reported to CDSC (NI), January - June 2004

Foodborne outbreaks						
Month	Board	Location	Organism	Suspect vehicle ²	No. ill ³	Cases +ve
Jan	E	Golf Club	?	Foodborne	6	?
Other gastrointestinal outbreaks						
Month	Board	Location	Organism	Suspect vehicle ²	No. ill ³	No +ve
Jan	W	Nursing Home	Unknown	Unknown	16	0
Jan	N	Nursing Home	SRSV	Person/person	22 residents/6 staff	?
Jan/Feb	N	Nursing Home	?Viral	Unknown	26 residents, 20 staff	?
Jan	E	Nursing Home	?Viral	Person/person	5 residents, 9 staff	?
Jan-Apr	E	Nursing Home	Viral	Person/person	11	n/a
Feb	N	Hospital	SRSV	Person/person	?	5
Feb	N	Nursing Home	Unknown	Person/person	32 residents, 14 staff, 1 visitor	?
Feb	N	Nursing Home	Unknown	Person/person	7 residents	?
Feb-Apr	E	Nursing Home	Viral	Person/person	11	n/a
Mar	E	Nursing Home	SRSV	Person/person	23	1
Mar	E	Nursing Home	Viral	Person/person	48	49
Mar	S	Hospital	SRSV	Person/person	?	?
Mar	S	Hospital	SRSV	Person/person	7	2
Mar	N	Nursing Home	Unknown	Person/person	13 residents, 3 staff	?
Mar	N	Hospital	SRSV	Person/person	41 residents, 18 staff	4
Mar	N	Hospital	SRSV	Person/person	179 patients, ? Staff	?
Apr	N	Hospital	SRSV	Person/person	?	2
Apr	N	Hospital	SRSV	Person/person	18 patients	?
Apr	N	Nursing Home	Unknown	Person/person	41 residents, 34 staff	?
Apr	N	Residential Home	Unknown	Unknown	23 residents, 5 staff	?
Apr	N	Nursing Home	Unknown	Unknown	12	0
Apr	E	Hospital	SRSV	Person/person	148 patients, 103 staff	2
Apr	E	Residential Home	Unknown	Person/person	55	n/a
Apr	E	Residential Home	Unknown	Person/person	28	n/a
May	N	Nursery	Unknown	Person/person	13 children, 7 staff	0
May	E	Hospital	? Viral	Person/person	26 patients, 16 staff	?
May	E	Other	Unknown	Person/person	?	?
Jun	W	Residential Home	Unknown	Person/person	15	0
Jun	W	Residential Home	SRSV	Person/person	14	5
Jun	S	Hospital	SRSV	Person/person	?	3
Jun	N	Residential Home	Unknown	Person/person	13 residents, 4 staff	0
Jun	N	Hospital	SRSV	Person/person	204	4

¹General outbreaks involve members of more than one household;

²Local investigations may not provide conclusive evidence of vehicles of infection. Vehicles are therefore designated 'suspect';

³The number known to be ill.

N.B. Data Provisional

Imported Infections

Salmonella

There have been 187 laboratory reports of individuals with Salmonella infection reported to CDSC (NI) to week 32, 2004 compared with 117 for this period in 2003. In contrast to the data collected for isolates for the same period last year where 53 (25%) were believed to have been acquired abroad, 21 isolates (11%) had a history of foreign travel.

Five cases were thought to have acquired their infection in Spain (including Canary Islands and Balearic islands). The remainder acquired infection in Greece, Turkey, Portugal, Sri Lanka, Czech Republic, Belgium, Kenya, Egypt and Thailand. Eight cases were male aged between seven years and sixty years. Thirteen cases were female aged between eight years and seventy years.

Figure 2: Travel related Salmonella Reports by Country of Infection Among NI Residents, to week 32 2004

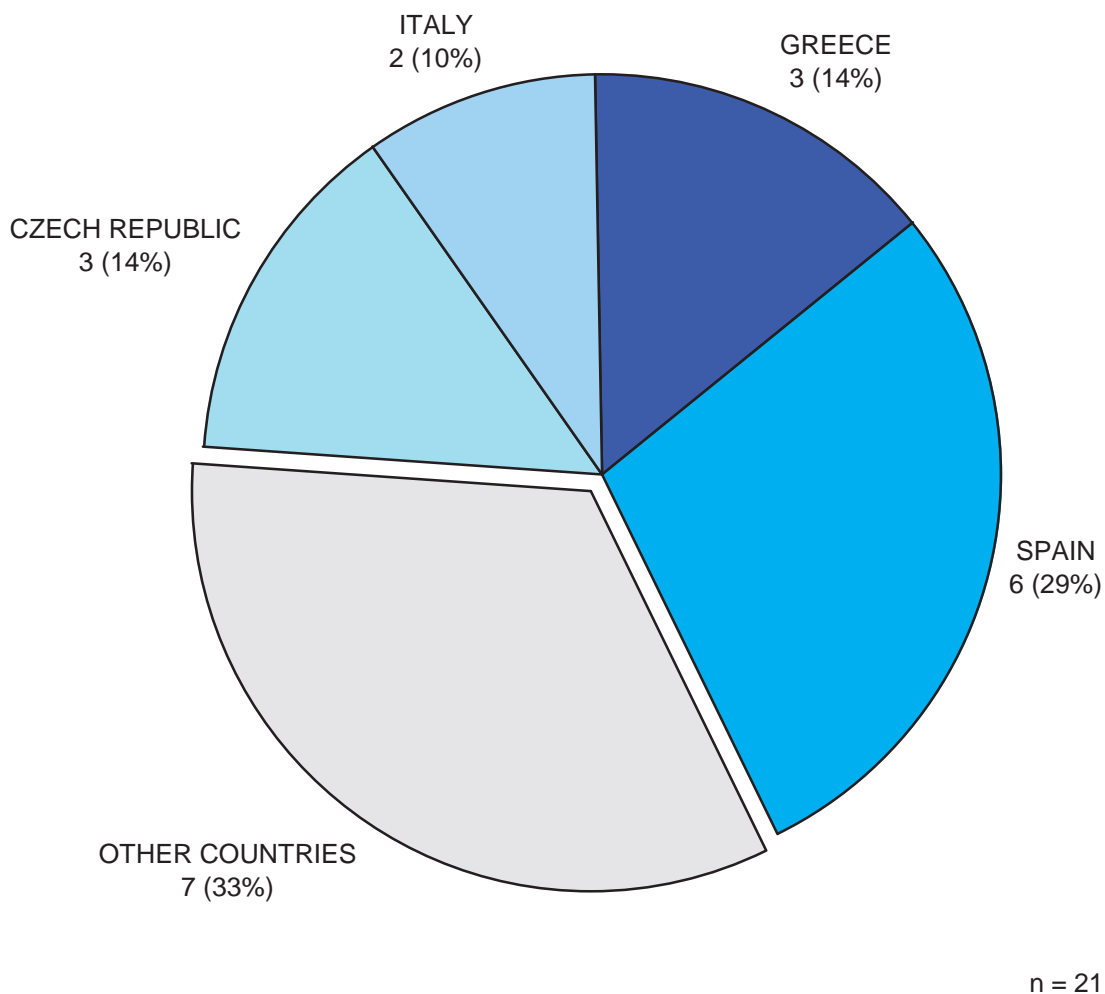


Table 7: Laboratory Reports of Salmonella, Weeks 1 - 32, 2004, Northern Ireland

Serotype	Number of reports received to week 32, 2004	Number thought to have been acquired abroad and country
<i>S. arizonae</i>	1	
<i>S. braenderup</i>	1	Greece (1)
<i>S. dublin</i>	1	
<i>S. enteritidis</i> (PT4)	30 (3)	Spain (5), Turkey (1), Greece (2), Portugal (1), Italy (2), Sri Lanka (1), Czech Republic (2)
<i>S. idikan</i>	2	
<i>S. java</i>	1	
<i>S. kentucky</i>	1	
<i>S. newport</i>	1	Kenya (1)
<i>S. oranienburg</i>	1	
<i>S. spp</i>	17	Czech Republic (1)
<i>S. typhimurium</i> (DT 104)	130 (0)	Spain (1), Egypt (1), Thailand (1)
<i>S. virchow</i>	1	Belgium (1)
Total	187	21

Other infections

Other infections with a history of having travelled abroad during weeks 1-32 this year were as follows:

Table 8: Other Infections Acquired Abroad, Weeks 1-32, 2004, Northern Ireland

Organism	Number of reports with history of foreign travel	Countries
<i>Campylobacter</i>	10	Spain (2), ROI (2), France (1), Afghanistan (1), UAE (1), Iraq (1), Holland (1), Dominican Republic (1)
<i>E. Coli</i> O 157	1	Turkey (1)
<i>Entamoeba Coli</i>	1	China (1)
<i>Giardia Lamblia</i>	1	Spain (1)
Rotavirus	1	Spain (1)
<i>Shigella Sonnei</i>	3	Philippines (1), Afghanistan (1), Not Known (1)

Data provisional

Table 9: Total Gastro-intestinal organisms Acquired Abroad, Weeks 1-32, 2004

Organism	Total reported to week 32, 2004	Acquired Abroad (% of total reports)
<i>Salmonella</i>	187	21 (11%)
<i>Campylobacter</i>	469	10 (2%)
<i>E. Coli</i> O 157	7	1 (14%)
<i>Shigella</i>	7	3 (43%)
<i>Giardia</i>	9	1 (11%)
Total	679	36

Foodborne and Gastro-intestinal Tract Infections: Laboratory Reports, Weeks 29-32

	Number of Reports received		Cumulative total	
	04/29-32	03/29-32	04/01-32	03/01-32
<i>Campylobacter</i>	41	74	469	480
<i>C. difficile</i> Toxin	78	52	820	589
<i>C. perfringens</i>	0	3	6	14
<i>E. coli</i> O 157	0	12	7	18
<i>Salmonella</i> total	54	43	186	117
<i>S. enteritidis</i> (PT 4)	6	19 (6)	30 (3)	35 (10)
<i>S. typhimurium</i> (DT 104)	37	5 (2)	130	29 (6)
<i>Salmonella</i> other	11	19	26	46
<i>Shigella</i>	3	2	7	10
<i>Cryptosporidium</i>	6	40	99	103
<i>Giardia</i>	0	1	9	11
Adenovirus (faeces)	3	10	85	73
Enterovirus (faeces)	1	3	9	15
Rotavirus	9	7	406	538
SRSV	1	0	70	95

Comment:

Salmonella (other than *enteritidis* or *typhimurium*):

S. kentucky 1
S. spp 6
S. unnamed 4

With the exception of *C difficile* Toxin, *Salmonella* and Adenovirus, cumulative reports of foodborne and gastro-intestinal tract infections have decreased compared to the same period last year.

Reports of *C. perfringens* and *E. Coli* O 157 have more than halved.

Twenty-six of the thirty-seven *S. typhimurium* reported in this 4 week reporting period are known to have been associated with the *S. typhimurium* outbreak in Downpatrick.

Mycobacteria: Laboratory Reports Weeks 21-32

	Number of Reports received			Cumulative total	
	04/21-24	04/25-28	04/29-32	04/01-32	03/01-32
<i>M. abscessus</i>	0	0	0	2	0
<i>M. avium-intracellulare</i> group	0	0	0	14	7
<i>M. bovis</i>	0	0	0	0	2
<i>M. chelonae</i>	1	0	1	2	3
<i>M. fortuitum</i>	1	0	0	1	0
<i>M. gordonae</i>	0	0	0	1	0
<i>M. kansasii</i>	0	0	0	2	3
<i>M. malmoense</i>	0	0	0	3	7
<i>M. tuberculosis</i>	6	4	0	24	24
<i>Mycobacterium</i> sp	0	0	0	1	3
TOTAL	8	4	1	50	49

Comment:

There were two reports of *M. chelonae* isolated from sputum in weeks 21-32. Both cases were male, aged 77 and 88 years.

Ten cases of *M. tuberculosis* were reported during this 12-week reporting period. Six were isolated from sputum, 2 from lower respiratory tract, and 2 from tissue. Six cases were male, aged between 25 and 75 years. Four cases were female, aged between 22 and 64 years.

There was one report of *M. fortuitum* isolated from sputum in this reporting period. The patient was female, aged 71 years.

Contributing Laboratories

Altnagelvin	Mater
Antrim	Musgrave Park
Belfast City	Regional Mycology
Belvoir Park	Regional Virus
Causeway	Royal Victoria
Craigavon	Tyrone County
Daisyhill	Ulster
Erne	

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