

# OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia.

## First Quarter Summary, 2015 NSW

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Neil Franklin, Catriona Furlong, Kate Ward, James Flint,  
Kirsty Hope

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Enteric diseases and OzFoodNet  
team  
enteric@doh.health.nsw.gov.au  
Communicable Diseases Branch  
NSW Ministry of Health  
73 Miller Street North Sydney  
NSW 2060  
Locked Mail Bag 961 North  
Sydney NSW 2059  
Phone: 02 93919236/93919561  
Fax: general 93919848, secure  
93919189

# Highlights Quarter 1, 2015

## Introduction

This report describes data for enteric conditions for quarter 1, 2015. The report is divided into three sections: enteric notifiable diseases, foodborne outbreaks and gastroenteritis outbreaks in institutions. Data in this report have been extracted from the NSW Notifiable Conditions Information Management System, NSW OzFoodNet Outbreak Database and the NSW Gastroenteritis in Institutions Database, all held by Health Protection NSW. Every endeavour has been made to ensure that the information provided in this document was accurate at the time of writing. However, infectious disease notification data are continuously updated and subject to change.

In NSW, gastroenteritis and foodborne outbreaks are identified via a range of mechanisms, including reports from the public, general practitioners, institutions such as residential care facilities and child care centres, emergency departments, analysis of surveillance data, and reports to the NSW Food Authority's (NSWFA) Consumer Complaints Line to public health units. Reports to the NSWFA result in a number of outbreaks affecting small numbers of people being referred to public health units (PHUs). These outbreaks usually require limited epidemiological investigation and often the aetiology cannot be determined.

## Summary

During the first quarter of 2015, **cryptosporidiosis** notifications increased by 65% compared to the five year average, with 54% of cases aged less than nine years of age. There were significant increases in the number of notifications in South Eastern Sydney Local Health District (LHD), Sydney LHD, Western Sydney LHD, Nepean Blue Mountains LHD and Illawarra Shoalhaven LHD (table 1).

Twenty percent of cases had travelled overseas prior to illness. For the 65% of cases acquired in Australia; 31% had contact with animals; 35% had swum in a public pool; and 35% had no exposures identified (cases can indicate multiple exposures). Approximately 15% of all notifications were not followed up.

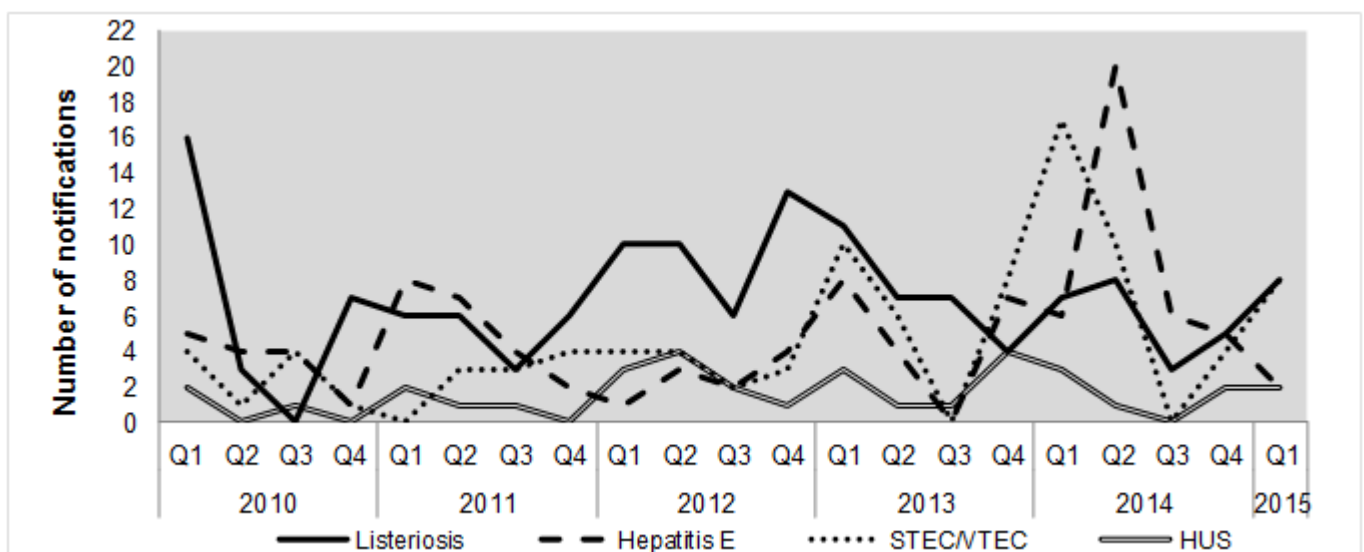
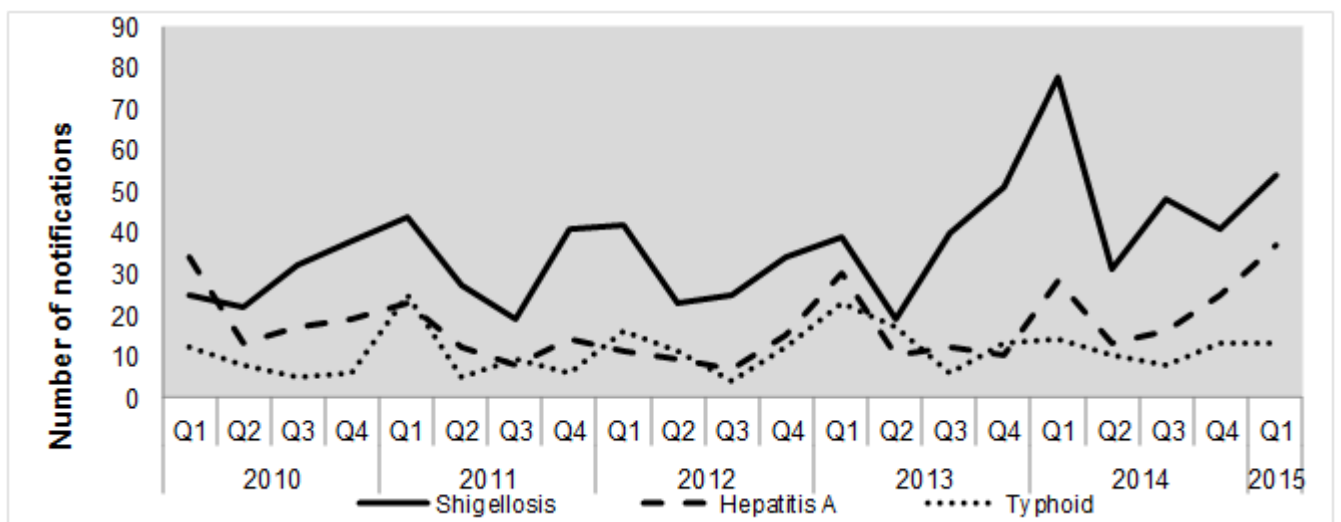
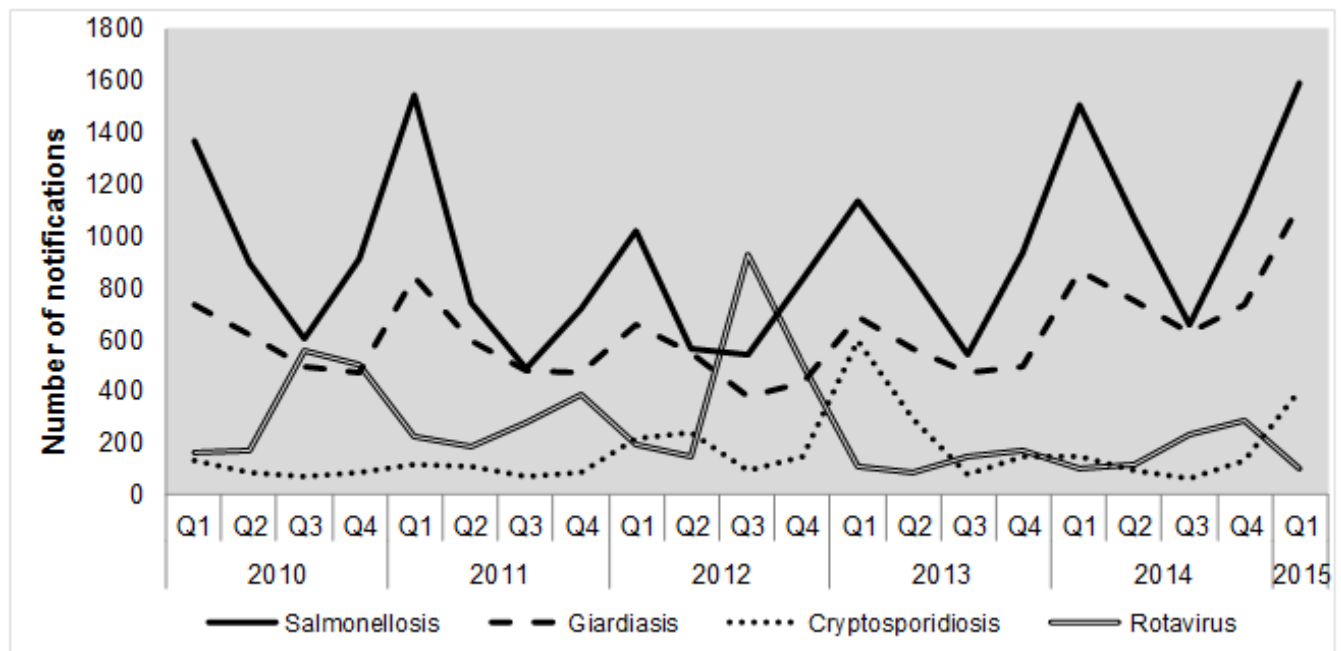
**Hepatitis A** notifications increased by 47% compared to the five year average, with 46% of the infections locally acquired. Twelve were linked to the national hepatitis A outbreak (described in Notable Foodborne Outbreaks section).

**Salmonella** notifications increased by 21%, compared to the five year average. *S.Typhimurium* accounted for 50% of all *Salmonella* notifications, followed by *S.Java* (4%) and *S.Bovismorbificans* 3% (figure 4).

Sixteen **foodborne or suspected foodborne outbreaks** were identified affecting 149 people, of whom 22 were hospitalised (table 5). Twelve outbreaks identified *Salmonella* as the causative agent, one was scombroid fish poisoning, one hepatitis A and the remaining two were of unknown aetiology.

In eleven of the outbreak a suspected contaminated food source could be implicated, in the remaining 4 outbreaks the food venue was identified but the food vehicle remains unknown. The outbreaks of known cause were *Salmonella* infection linked to consumption of items containing undercooked eggs in seven outbreaks, *Salmonella Bovismorbificans* infection linked to consumption of baked dessert items, histamine fish poisoning linked to consumption of canned tuna, hepatitis A infection linked to consumption of frozen berries and one outbreak with an unknown pathogen linked to consumption of Vietnamese style chicken and salad rolls.

**Figures 1-3.** Counts of notifications of enteric disease for each quarter of each year, 2010-2015



**Table 1: Notifiable enteric conditions for quarter 1, 2015 by Local Health District**

Notifiable Disease		CC	FW	WNSW	HNE	IS	SWS	MNC	NNSW	M	SNSW	NBM	NS	SES	Syd	WS	NSW
Botulism	Notified, Q1 2015	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	5y Q1 mean 2010-2014	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2
Cryptosporidiosis	Notified, Q1 2015	11	1	6	55	26	16	8	15	9	5	23	40	84	48	47	394
	5y Q1 mean 2010-2014	8.2	0.2	12	34.8	7.8	13.2	5.2	13.2	6.4	3.2	11	52.6	29	21.4	20.2	238.4
Giardiasis	Notified, Q1 2015	44	0	40	147	90	69	21	28	31	22	45	214	201	97	70	1119
	5y Q1 mean 2010-2014	32	3	35.2	95.4	35.4	42.8	13.2	11.2	20	16.6	39.2	131	140.4	69.8	68.6	753.8
Hepatitis A	Notified, Q1 2015	0	0	3	0	3	9	0	0	0	0	1	4	3	3	11	37
	5y Q1 mean 2010-2014	0.4	0.2	0	1	0.4	3.6	0	1.2	0.4	0	0.4	2.4	3.6	2.6	9	25.2
Hepatitis E	Notified, Q1 2015	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
	5y Q1 mean 2010-2014	0	0	0	0	0	0.6	0	0	0	0	0	1	1	1	2	5.6
Listeriosis	Notified, Q1 2015	0	0	0	1	0	3	0	0	0	1	0	1	1	1	0	8
	5y Q1 mean 2010-2014	0	0	0.2	1	0.4	1.6	0.2	0.6	0	0	0.4	2.8	1.6	0.6	0.6	10
Rotavirus	Notified, Q1 2015	0	0	5	8	4	3	2	8	3	0	3	24	16	11	8	95
	5y Q1 mean 2010-2014	2.2	0.8	5.2	21.4	3.4	11.2	1.8	11	4.6	0.8	9.6	26.2	21	16.4	17.6	153.2
Salmonellosis	Notified, Q1 2015	63	13	47	153	99	153	57	115	43	35	67	260	181	141	157	1584
	5y Q1 mean 2010-2014	57	5.6	36.4	137.8	49.8	155.8	55.2	80.8	59	24.8	46.8	173.4	180.2	115	134	1311.6
Shigellosis	Notified, Q1 2015	1	0	0	1	1	4	0	1	3	0	0	1	25	15	2	54
	5y Q1 mean 2010-2014	1	0	1	1.2	1	1.6	0.8	2.8	0.2	1.2	1.6	6.6	12.8	10.2	3.6	45.6
STEC/VTEC	Notified, Q1 2015	0	0	0	2	1	1	0	1	0	0	0	1	0	2	0	8
	5y Q1 mean 2010-2014	0	0	0.2	2.4	0.8	0.6	0	0.6	0	0.2	0.4	0	1.4	0.4	0	7
HUS	Notified, Q1 2015	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
	5y Q1 mean 2010-2014	0	0	0	0.4	0.4	0.4	0	0.2	0	0.4	0.4	0.2	0.2	0	0	2.6
Typhoid	Notified, Q1 2015	0	0	0	1	0	1	0	0	0	1	0	2	0	2	6	13
	5y Q1 mean 2010-2014	0	0	0	0.4	0	2.4	0.2	0.4	0	0	0.4	2.2	3.2	2	6.8	18
Foodborne Outbreaks	Notified, Q1 2015	0	0	0	1	2	0	0	0	1	0	0	6	4	1	0	16
	People affected	0	0	0	13	32	0	0	0	4	0	0	40	45	3	0	149
Salmonella Cluster	Notified, Q1 2015	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	4
	People affected	0	0	0	0	0	0	0	0	0	0	0	30	0	0	3	33

Legend: Blue shading refers to a 100% or greater increase in the number of notifications compared to the five year average count

Local Health District (LHD) abbreviations: Central Coast LHD (CC), Far West NSW LHD (FW), Western NSW LHD (WNSW), Hunter New England LHD (HNE), Illawarra Shoalhaven LHD (IS), South Western Sydney LHD (SWS), Mid North Coast LHD (MNC), Northern NSW LHD (NNSW), Murrumbidgee LHD (M), Southern NSW (SNSW), Nepean Blue Mountains LHD (NBM), Northern Sydney LHD (NS), South Eastern Sydney LHD (SES), Sydney LHD (Syd), Western Sydney LHD (WS).

**Table 2:** Notifiable enteric conditions by overseas or local acquisition for quarter 1, 2015 by local health district

Notifiable Disease	Place infection acquired	NSW, Q1 2015	5 yr Q1 mean 2010-2014	2015 % change
Hepatitis A	Overseas acquired	20	19	0.05
	Locally acquired	17	6	183
	Unknown	0	0.2	-
Hepatitis E	Overseas acquired	1	5.4	-81
	Locally acquired	1	0	-
	Unknown	0	0.2	-
Salmonella Enteritidis	Overseas acquired	21	32.2	-35
	Locally acquired	5	4	25
	Unknown	4	4.2	-5
Paratyphoid	Overseas acquired	5	11	-55
	Locally acquired	0	0.2	-
	Unknown	0	0	-
Shigellosis	Overseas acquired	14	16.2	-14
	Locally acquired	32	21.4	50
	Unknown	8	8	0
STEC/VTEC	Overseas acquired	1	0	-
	Locally acquired	6	4	50
	Unknown	1	3	-67
Typhoid	Overseas acquired	13	17.6	-26
	Locally acquired	0	0.4	-
	Unknown	0	0	-

Legend: Blue shading refers to a 100% or greater increase in the number of notifications compared to the five year average count

## Notable Foodborne Outbreaks

### *Salmonella Bovismorbificans outbreak*

In February 2015, a PHU was notified of an outbreak of salmonellosis in an aged care facility (ACF). An outbreak investigation was initiated by the PHU in conjunction with Health Protection NSW and the NSWFA.

In total, the outbreak affected 33 residents across 10 ACFs in NSW and the ACT. The ACFs were managed by the same organisation and shared common food suppliers. All 33 residents tested positive for *Salmonella Bovismorbificans*, 30 were further characterised as phage type 14 (the remaining three were not phaged typed).

Illness onsets were between 21 January and 23 February 2015. An additional case occurred on 24 March 2015, this was classified as a secondary case likely to have been infected through contact with a case who had prolonged excretion of *Salmonella*. Facility based attack rates ranged from 0.6 -7.5 per cent.

The environmental investigation identified *Salmonella Bovismorbificans* phage type 14 at the premises of a baked dessert supplier to the ACFs and on food samples. While definitive food histories were difficult to obtain, desserts from this supplier were consumed by the majority of affected residents.

### *National hepatitis A outbreak*

In this quarter there was an Australia wide outbreak of 33 cases of locally acquired hepatitis A genotype 1a with a unique genetic sequence. Many of these cases reported consuming the same brand of mixed frozen berries.

In the first quarter of 2015, there were 12 locally acquired hepatitis A cases in NSW with the outbreak genetic sequence. Eight of these cases reported consuming the implicated frozen berries, while three were secondary cases who acquired their infection from an outbreak case. One case had the outbreak sequence but did not report consuming the implicated berries or have contact with a known case.

The implicated frozen berries were recalled from sale on 14 February 2015. Hepatitis A with the outbreak sequence was isolated from an opened packet of mixed frozen berries from one of the cases. Testing of an unopened packet from the supermarket shelf resulted in a positive test for hepatitis A virus however there was not enough virus to perform typing.

The implicated berries were packed in China and originated from farms in China and Canada. Food Standards Australia New Zealand worked closely with the Department of Agriculture who were responsible for working with Chinese Government authorities to investigate farm and food handling practices.

### *Scombroid fish poisoning*

On 23 February 2015 a PHU was notified of four separate cases of suspected scombroid poisoning. Cases presented with red face, headache, tingling, sweating, vomiting and palpitations.

Scombroid fish poisoning is caused by bacterial spoilage of certain finfish such as tuna and mackerel. As bacteria break down fish proteins, byproducts such as histamine build up in the fish. Eating spoiled fish that have high levels of histamines can cause illness in humans. Symptoms begin within 2 minutes to 2 hours after eating the fish.

The subsequent investigation identified a total of seven cases. All seven cases consumed a tuna salad from the same local food outlet. Onset of symptoms was within 10-15 minutes of tuna consumption.

The NSWFA initiated an investigation on Monday 23 February. A trade recall was conducted on the canned tuna product implicated.

## Salmonella spotlight.

### Salmonella Paratyphi B bv Java

Since 2007 there have been over 250 cases of locally acquired *Salmonella* Paratyphi B bv Java (S.Java) infection notified to the Northern Sydney Public Health Unit (NSPHU). The majority of these cases have had exposures in the Northern Beaches of Sydney.

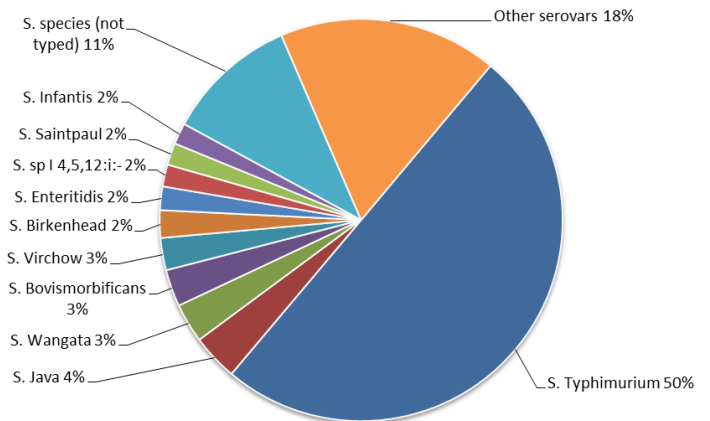
There were 34 S.Java cases notified to the NSPHU with illness onset in the first quarter of 2015. Thirty three of these cases were locally acquired and had the same MLVA type as locally acquired cases reported on previously. One did not have the same MLVA type and the person had acquired the infection overseas. The ages of the 33 locally acquired S.Java cases ranged from 2 months to 41 years old; the majority (73%) were aged less than 5 years.

The majority of cases were residents of the Northern Beaches where bandicoot activity is ubiquitous. A case control study conducted in 2014 showed that all cases and all controls reported exposure to bandicoot activity. No significant associations were found. Environmental investigations identified S.Java in bandicoot scats and in sand collected from sandpits in parks/playgrounds and child care centres (CCC)/Kindergartens. A media alert was issued and information brochures were developed and distributed through councils.

In the first quarter of 2015 cases reported having observed bandicoot activity in their garden or other places frequented during their incubation period. Several CCC/Kindergarten sandpits were tested, S.Java was identified in the sandpit of one kindergarten attended by one of the cases; remedial action was implemented to prevent other cases. No common park exposures were identified in this period.

Author: Northern Sydney PHU

**Figure 4.** Proportion of *Salmonella* serovars, quarter 1, 2015 (N=1585)



**Table 3.** Top ten *Salmonella* Typhimurium MLVAs, quarter 1, 2015

MLVA	Notifications	% of Salmonella total
3-12-11-14-523	48	15%
3-17-9-11-523	42	14%
3-10-8-12-523	41	10%
3-12-12-9-523	30	9%
3-12-13-9-523	27	8%
3-24-14-10-523	23	7%
3-25-13-10-523	20	7%
3-24-13-10-523	20	7%
3-9-7-13-523	19	7%
3-17-8-11-523	19	6%
<b>Top ten total</b>	<b>289</b>	<b>36%</b>

**Table 4:** Foodborne and Suspected foodborne outbreaks for quarter 1, 2015

PHU ID	Month	Setting	Agent responsible	No. affected	No. Hospitalised	No. Deaths	Evidence	Responsible vehicles
SES43164	Jan	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-9-8-12-523	3	0	0	D	Tiramisu
CAM43371	Jan	Restaurant	Unknown	3	0	0	D	Unknown
NS44476	Jan	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-12-11-14-523	2	0	0	D	Suspected raw egg sauces
NS43533	Jan	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-12-11-14-523	12	0	0	D	Menu items containing undercooked egg
NSW201501	Jan	Aged Care Facility	<i>Salmonella</i> Bovismorbificans	33 <sup>1</sup>	12	2	AM	Baked dessert items
HUN0491	Jan	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-12-13-9-523	13	3	0	D	Unknown
NS44477	Feb	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-9-7-12-523 & 3-12-12-9-523	5	0	0	D	Unknown
SES43608	Feb	Take-away	Unknown	30	UK	0	D	Vietnamese style chicken & salad rolls
SES201501	Feb	Take-away	Scombroid fish poisoning	7	0	0	M	Canned tuna
SES43819	Feb	Restaurant	<i>Salmonella</i> Virchow	3	1	0	D	Menu items containing undercooked egg
NS201501	Feb	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-10-8-12-523	9	0	0	D	Unknown
GS201501	Mar	Community event	<i>Salmonella</i> Typhimurium PT 12A	4	3	0	D	Pancake batter containing eggs
NS44155	Mar	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-24-14-10-523	7	0	0	D	Unknown
NS44106	Mar	Restaurant	<i>Salmonella</i> PCR+	5	1	0	D	Tiramisu
III201501	Mar	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-9-7-13-523	4 <sup>2</sup>	0	0	D	Menu items containing undercooked egg
National*	Jan	Pre-packaged food	Hepatitis A	12	5	0	DA	Nanna's frozen berries

# Month of outbreak is the month of onset of first case or month of notification/investigation of the outbreak. \* This was a national outbreak with cases in other State and Territories, only the NSW cases are reported here. Evidence category: **A** Analytical epidemiological association between illness and 1 or more foods. **BT** Binary type. **D** Descriptive evidence implicating the suspected vehicle or suggesting foodborne transmission. **M** Microbiological confirmation of agent in the suspected vehicle and cases. **MLVA** Multi-locus variable number tandem repeat analysis. **PFGE** Pulsed-field gel electrophoresis. **PT** Phage type. **ST** Serotype. <sup>1</sup>3 cases were ACT residents, <sup>2</sup>2 cases were ACT residents



## Gastroenteritis Outbreaks in Institutions

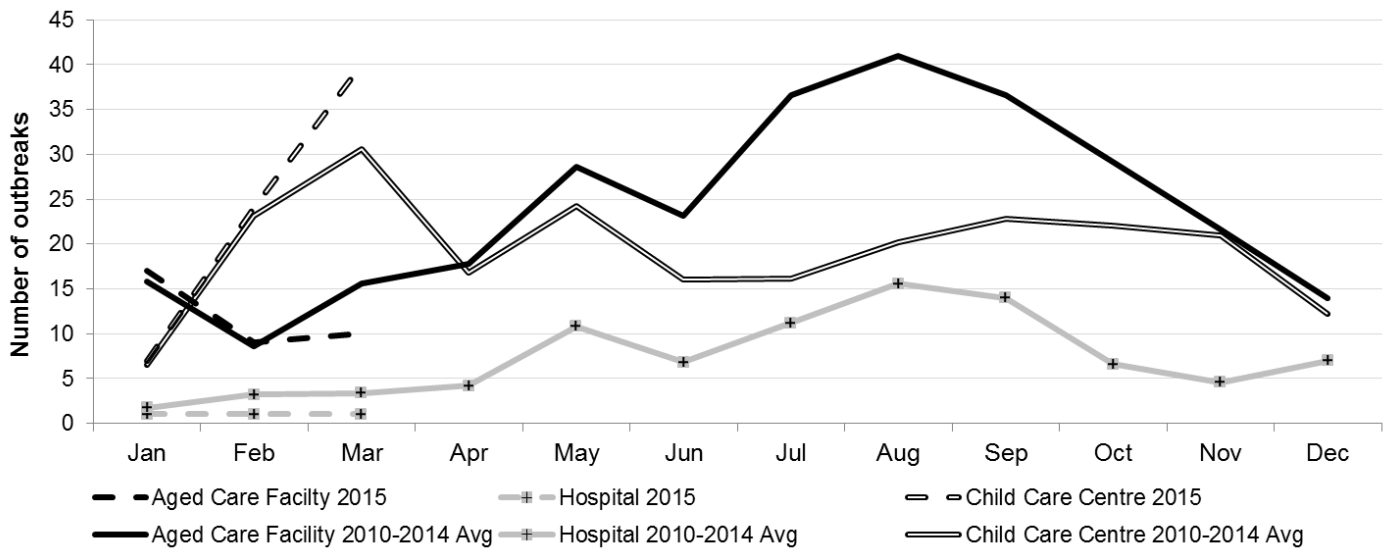
From 1 January, 2015 to 31 March, 2015, a total of 116 outbreaks of gastrointestinal illness in institutions were reported in NSW, affecting at least 1,450 people. This represents an increase of 8% compared to the five year mean number of outbreaks reported during the same quarter from 2010 to 2014 (n=107), and a decrease of 3% compared to the mean number of people affected as a result of the outbreaks (n=1,498).

Of the 116 outbreaks of viral gastroenteritis in institutions reported in NSW, 71 (61%) occurred in child care centres, 36 (31%) in aged care facilities, 3 (3%) in hospitals and 6 (5%) in other facilities. The number of child care centre outbreaks during quarter one was higher than the five year mean (figure 5).

Overall, 7% of staff members and 11% of non-staff became sick during gastroenteritis outbreaks (attack rate) in quarter 1. The highest attack rate for gastrointestinal disease for staff was child care centre staff (21%) and for non-staff were patients on hospital wards (43%). On average outbreaks lasted 6 days; it was shortest in hospitals (2 days) and longest in child care centres (13 days) (table 5).

One or more stool samples were collected in 39 (34%) of the outbreaks. Norovirus was identified from six of these outbreaks and rotavirus was identified in one. The results of the other samples were negative, or not reported (table 6).

**Figure 5:** Number of reported outbreaks of gastrointestinal illness in institutions; quarter 1, 2015 and average of the previous 5 years by month and facility type



**Table 5:** Characteristics of outbreaks of gastrointestinal illness in institutions reported to NSW in quarter 1, 2015

Setting	No of Outbreaks (n)	Staff Affected (n: attack rate)	Non-staff affected (n: attack rate)	Average duration of outbreak (days)	Outbreaks with stool collected (n: %)	Outbreaks with pathogen found (n: pathogen found)
ACF	36	76: 3%	280: 10%	4	26: 72%	5:norovirus & 1:rotavirus
CCC	71	232: 21%	777: 11%	13	8: 11%	0
Hospital	3	4: 3%	20: 43%	2	2: 67%	0
Other	6	9: 2%	52: 7%	6	3: 50%	1: norovirus
Total	116	321: 7%	1,129: 11%	10	39: 34%	7

(ACF= aged care facility, CCC= child care centre, Other= Family care facility, Military facility, School, Police Academy)

**Table 6:** Outbreaks of gastroenteritis in institutions reported to NSW for quarter 1, 2015 by Local Health District\*

Facility type	Q1 2015	HNE	IS	M	NBM	NNSW	NS	SES	SNSW	SWS	Syd	WNSW	WS	NSW
ACF	No. of outbreaks	7	2	2	5	0	5	0	3	5	2	2	3	36
	Staff affected	22	10	6	20	0	4	0	2	3	0	2	7	76
	Non-staff affectedd	62	17	15	52	0	28	0	19	30	19	6	32	280
CCC	No. of outbreaks	13	12	3	13	0	10	1	0	1	2	0	16	71
	Staff affected	52	58	4	20	0	29	2	0	4	3	0	60	232
	Non-staff affectedd	113	151	29	131	0	120	31	0	12	18	0	172	777
Hospital	No. of outbreaks	0	0	0	0	1	1	0	0	1	0	0	0	3
	Staff affected	0	0	0	0	1	1	0	0	2	0	0	0	4
	Non-staff affectedd	0	0	0	0	8	4	0	0	8	0	0	0	20
Other	No. of outbreaks	0	0	2	0	0	0	0	1	1	2	0	0	6
	Staff affected	0	0	0	0	0	0	0	0	7	2	0	0	9
	Non-staff affectedd	0	0	17	0	0	0	0	16	8	11	0	0	52

\*CC, FW & MNC did not report any outbreaks of gastroenteritis in institutions in this period

Local Health District (LHD) abbreviations: Central Coast LHD (CC), Far West NSW LHD (FW), Western NSW LHD (WNSW), Hunter New England LHD (HNE), Illawarra Shoalhaven LHD (IS), South Western Sydney LHD (SWS), Mid North Coast LHD (MNC), Northern NSW LHD (NNSW), Murrumbidgee LHD (M), Southern NSW (SNSW), Nepean Blue Mountains LHD (NBM), Northern Sydney LHD (NS), South Eastern Sydney LHD (SES), Sydney LHD (Syd), Western Sydney LHD (WS).