

OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia.

Fourth Quarter Summary, Oct - Dec 2015 NSW

NSW OzFoodNet



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Highlights Quarter 4, 2015

Introduction

This report describes data for enteric conditions for quarter 4 (Q4), 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 and the NSW OzFoodNet Outbreak 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 Fourth quarter of 2015, *Shigella* notifications increased by 41% compared to the five year average, with the largest increase in overseas acquired cases (49%). During this quarter, 15 (38%) were locally acquired, of which 3 (20%) acquired infection from a household contact, 4 (27%) reported MSM exposure as a possible source and 8 (53%) had no obvious risk exposure. Of the 26 cases with overseas travel, the most common place of acquisition was Indonesia in 8 (31%) cases. *Shigella sonnei* was the most common serotype identified (69%), followed by *S. flexneri* (23%) and *S. boydii* (3%).

Salmonella notifications increased by 12% compared to the five year average. *S. Typhimurium* accounted for most (41%) *Salmonella* notifications (figure 4). Seven percent were *S. Saintpaul*. This represents a large increase in *S. Saintpaul*, which usually accounts for approximately 1-2% of salmonella cases annually. This increase was noted and a cluster investigation was launched in January 2016. Results pending.

STEC notifications increased by 281% compared to the five year average. Twelve were locally acquired, 2 were overseas acquired and 2 could not be interviewed. No clustering by type or exposure was found in the cases. The increase in detection of STEC in this quarter may be due to the use of more sensitive tests for the detection of STEC.

Cryptosporidiosis notifications increased by 204% in this quarter compared to the five year average for the same period. Refer to page 6 for more information.

Hepatitis E notification rates increased by 163% compared to the five year average. Nine out of the 10 cases acquired their infections overseas. The source of the locally acquired case could not be identified.

Eighteen **foodborne or suspected foodborne outbreaks** were identified affecting 145 people, of whom 8 were hospitalised (table 4). Six outbreaks identified *Salmonella* as the causative agent, 1 was suspected scombroid fish poisoning, 1 was campylobacter, 1 *Norovirus* and the remaining 9 were of unknown aetiology. In 7 of the outbreaks a suspected contaminated food source could be implicated. This included *Salmonella* Typhimurium infection linked to consumption of items containing undercooked eggs or campylobacter infections linked to consumption of chicken liver and scombroid poisoning linked to consumption of a fish (of unknown type).

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

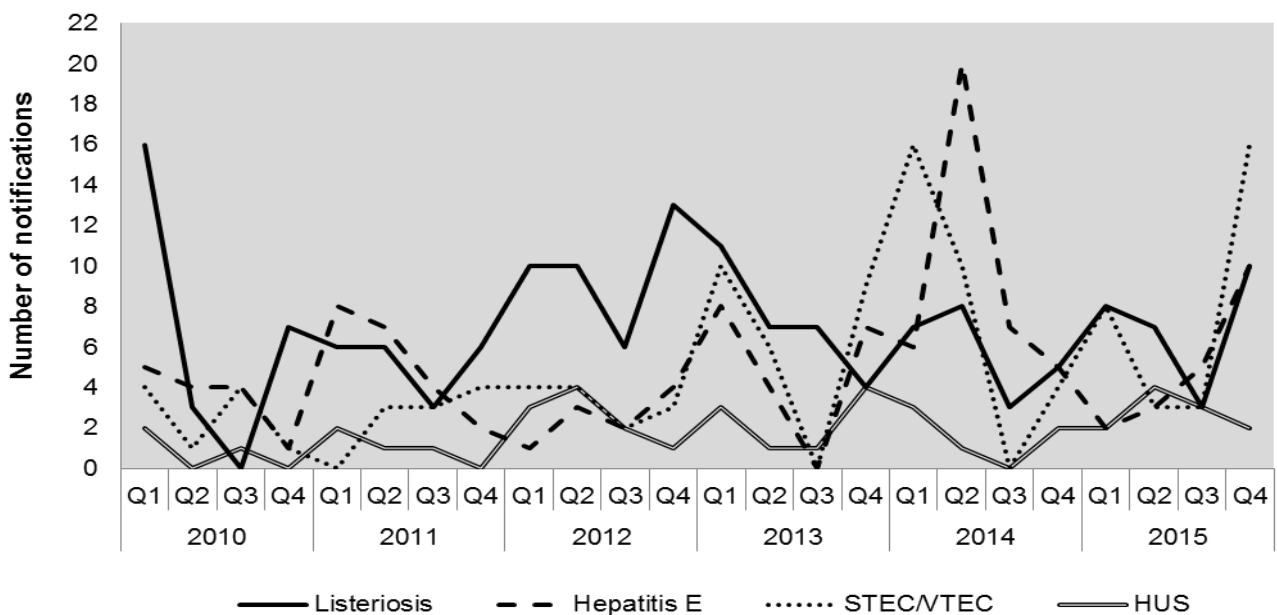
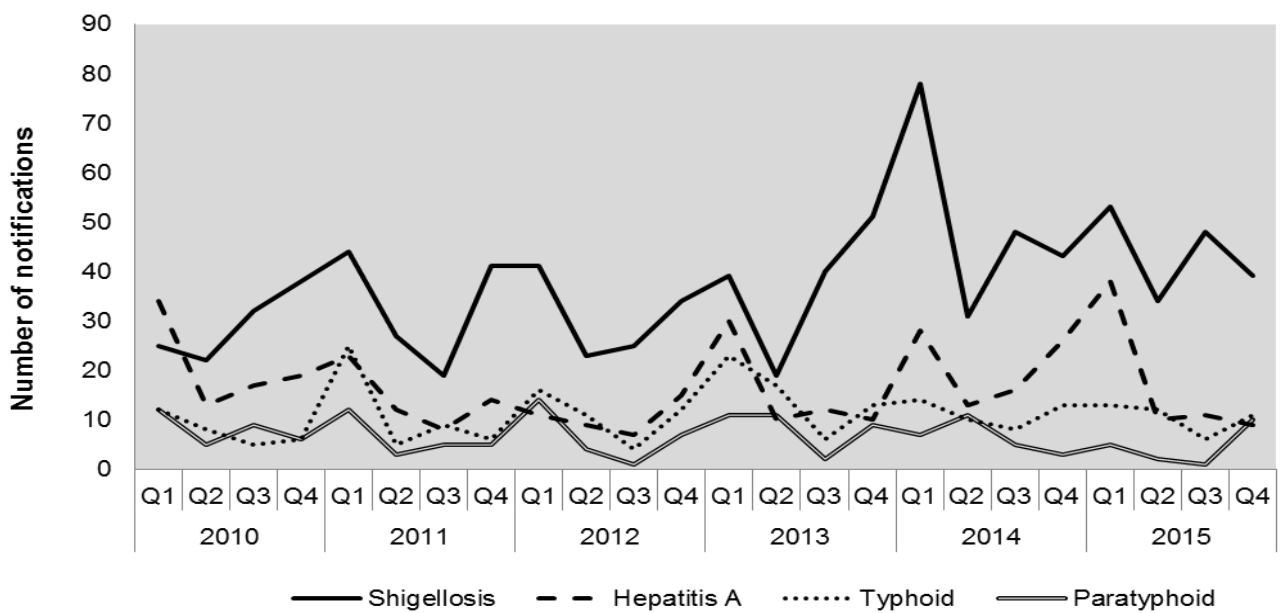
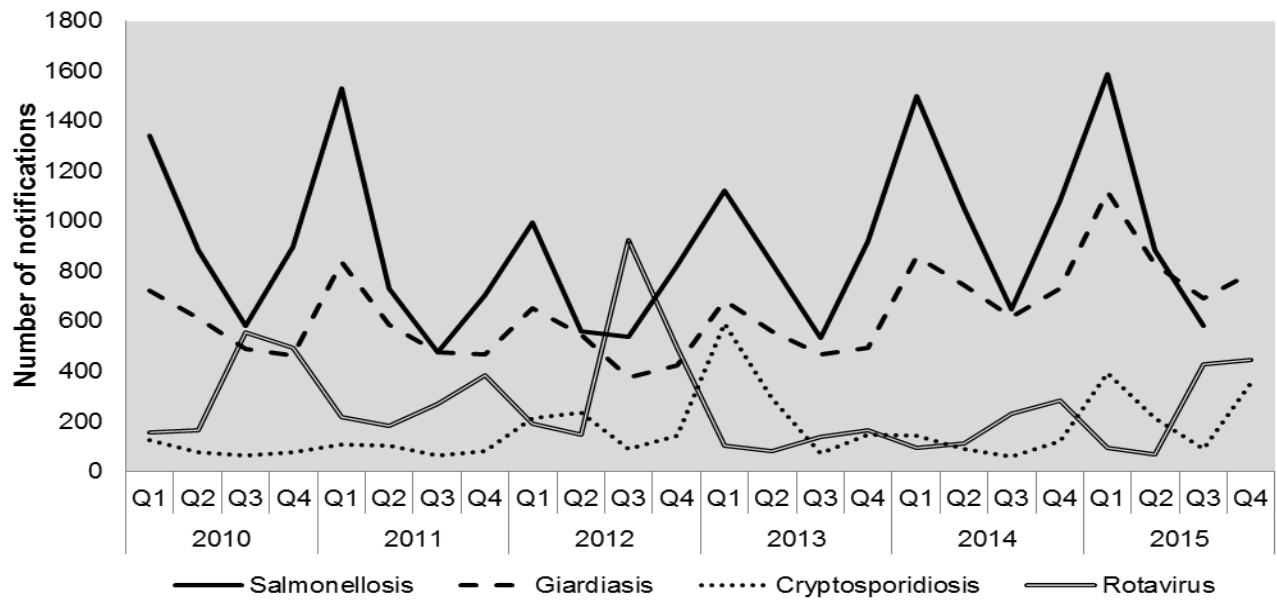


Table 1: Notifiable enteric conditions for quarter 4, 2015 by Local Health District

Notifiable Disease		CC	FW	HNE	IS	M	MNC	NBM	NNSW	NS	SES	SNSW	SWS	Syd	WNSW	WS	NSW
Cryptosporidiosis	Notified, Q4 2015	10	0	88	18	38	3	14	26	25	32	11	20	9	43	16	353
	5y Q4 mean 2010-2014	3.4	0.4	17.8	5.4	6.2	4	5.4	5	11.4	19.2	2.4	5.8	10.6	9.4	9.6	116
Giardiasis	Notified, Q4 2015	37	1	96	57	43	19	39	24	132	107	17	61	73	27	62	795
	5y Q4 mean 2010-2014	15.6	1.6	59.4	28.4	17.8	8.6	30.8	11.4	88	100.6	13.6	34.2	45.6	24.8	36.6	517.2
Hepatitis A	Notified, Q4 2015	1	0	0	0	0	0	0	0	0	0	0	2	2	0	4	9
	5y Q4 mean 2010-2014	0.4	0	0.6	0.4	0	0.4	0.4	0.8	1.2	2	0.6	3	1.8	0.8	4.4	16.8
Hepatitis E	Notified, Q4 2015	0	0	0	0	0	0	0	0	2	1	0	2	1	0	4	10
	5y Q4 mean 2010-2014	0.2	0	0	0	0	0	0	0	0.8	1.4	0	0.6	0.6	0	0.2	3.8
Listeriosis	Notified, Q4 2015	0	0	1	0	0	1	0	0	2	1	1	2	1	1	0	10
	5y Q4 mean 2010-2014	0.2	0.2	0.6	0.6	0.2	0	0.2	0	0.8	1.4	0.4	0.8	0.6	0	0.8	7
Rotavirus	Notified, Q4 2015	24	6	56	6	10	3	22	24	67	43	9	39	42	32	65	448
	5y Q4 mean 2010-2014	9.2	1.8	52.2	11	12.4	3.6	25.2	14.8	50.2	44	6.6	31	29	26.8	47	365.2
Salmonellosis	Notified, Q4 2015	27	10	114	49	48	33	40	52	137	131	40	83	108	17	109	998
	5y Q4 mean 2010-2014	31.8	4.8	109.6	39.4	36.4	30.8	40.2	56.8	126.2	114.6	21	90.8	72.2	22.8	90.4	887.8
Shigellosis	Notified, Q4 2015	2	0	3	2	0	0	2	0	3	5	0	5	10	1	6	39
	5y Q4 mean 2010-2014	1	0.2	1.6	2	0.6	0.8	0.6	2.2	4	13.8	0.6	2	8.6	0.2	3.2	41.4
STEC/VTEC	Notified, Q4 2015	0	0	3	1	1	1	0	1	1	1	4	0	0	1	2	16
	5y Q4 mean 2010-2014	0.2	0	2	0	0.8	0	0	0	0.2	0.6	0.2	0	0.2	0	0	4.2
HUS	Notified, Q4 2015	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	5y Q4 mean 2010-2014	0	0	0.2	0	0.4	0.2	0	0	0.2	0.4	0	0	0	0	0	1.4
Paratyphoid	Notified, Q4 2015	0	0	0	0	0	0	0	0	1	3	0	0	0	0	6	10
	5y Q4 mean 2010-2014	0.2	0	0.4	0	0	0	0	0	0.6	1	0.2	1.2	1	0.2	1.2	6
Typhoid	Notified, Q4 2015	0	0	0	0	0	0	1	0	1	1	0	4	1	0	3	11
	5y Q4 mean 2010-2014	0	0	0.2	0.2	0	0.2	0	0	0.8	2.8	0	2	1.2	0	2.6	10
Foodborne* Outbreaks	Notified, Q4 2015	2	0	1	1	0	0	1	1	2	2	1	1	1	1	3	18†
	People affected	13	0	4	5	0	0	30	5	6	5	2	5	5	5	55	145
Salmonella Cluster	Notified, Q4 2015	0	0	2	1	0	0	0	0	0	2	0	0	2	0	1	5†
	People affected	0	0	10	3	0	0	0	0	0	8	0	0	6	0	3	30

Legend: Blue shading refers to a 100% or greater increase in the number of notifications compared to the five year average count. *Foodborne or potentially foodborne outbreaks
 † NSW total includes a multi LHD outbreak

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

Table 2: Notifiable enteric conditions by overseas or local acquisition for quarter 4, 2015

Notifiable Disease	Place infection acquired	NSW, Q4 2015	5 yr Q4 mean 2010-2014	2015 % change
Salmonella Enteritidis	Locally acquired	5	4.4	14%
	Overseas acquired	43	32.2	34%
	Unknown	5	4	25%
Hepatitis A	Locally acquired	2	3.4	-41%
	Overseas acquired	7	13	-46%
	Unknown	0	0.4	-100%
Hepatitis E	Locally acquired	1	1.2	-17%
	Overseas acquired	9	2.2	309%
	Unknown	0	0.4	-100%
Paratyphoid	Locally acquired	0	0.2	-
	Overseas acquired	10	5.8	72%
	Unknown	0	0	-
STEC/VTEC	Locally acquired	12	2	500%
	Overseas acquired	2	0	-
	Unknown	2	2.2	-9%
Shigellosis	Locally acquired	15	17.2	-13%
	Overseas acquired	22	14.8	49%
	Unknown	2	9.4	-79%
Typhoid	Locally acquired	0	1	-100%
	Overseas acquired	11	8.8	25%
	Unknown	0	0.2	-100%

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

Cryptosporidium Spotlight

In 2015, crypto notifications increased by 204% during Q4 compared to the five year average for the same period (353 vs. an average of 116). Notifications began increasing in week 45 (n=33), and peaked during week 48 (n=52). Increases appeared mainly in regional and rural areas. Hunter New England LHD had the highest notification count during this period, with Murrumbidgee LHD having the highest per cent change when compared to the 5 year mean (Table 4).

Table 4: Crypto notifications by LHD.

Jurisdiction	2015Q 4	5y avg	% change
Murrumbidgee	38	6.2	512.9
Northern NSW	26	5	420.0
Hunter New England	88	17.8	394.4
Southern NSW	11	2.4	358.3
Western NSW	43	9.4	357.4
South Western Sydney	20	5.8	244.8
Illawarra Shoalhaven	18	5.4	233.3
Central Coast	10	3.4	194.1
Nepean Blue Mountains	14	5.4	159.3
Northern Sydney	25	11.4	119.3
South Eastern Sydney	32	19.2	66.7
Western Sydney	16	9.6	66.7
Sydney	9	10.6	-15.1
Mid north coast	3	4	-25.0
Far west	0	0.4	-100.0
NSW	353	116	204.3

Various exposures were identified, with many people reporting more than one risk exposure. The exposures with the highest percentage reported include: drinking town water (48.3%), contact with domestic animals (39.7%), drinking tank water (22.8%), swimming in a public swimming pool (22.4%) and contact with farm animals (19%) (Table 5).

Public Health Units regularly review practices at swimming pools when more than one case has been linked to that pool. In addition, when the notifications of *Cryptosporidium* increased, NSW

Health sent a letter to 61 swim schools within NSW, and to a 'Swimming Pool Industry' group, notifying them of the increase and requesting them to provide *Cryptosporidium* education to their patrons. The swim school managers were provided with the brochure: '[A Guide to Clean Pools for Healthy Swimming](#)' to give to parents of children. The pool managers were also requested to regularly superchlorinate their pool(s) to help kill any *Cryptosporidium* and when two or more cases of *Cryptosporidium* was linked to the pool, the pool manager was required to close and hyperchlorinate the pool. Hyperchlorination, the addition of a high concentration of chlorine, usually for at least 6 hours, is necessary to kill any *Cryptosporidium*.

Table 5. Risk exposure of crypto cases, Q4 2015

Exposure information	n	Percent (n=353)
No information available	61	17.3
Lost to follow-up	35	9.9
Travel overseas	25	7.1
Contact with known or possible case	38	10.8
Exposure information for cases acquired in NSW only*	n	Percent (n=232)
Animal exposure setting		
• Farm	44	19.0
• Petting zoo	4	1.7
• Other	6	2.6
Animals exposed to		
• Farm	49	21.1
• Domestic	92	39.7
• No animal exposure	59	25.4
• Other animal exposure	9	3.9
Water - ingestion		
• Town	112	48.3
• Tank	53	22.8
• Other	11	4.8
Water-recreational		
• Public pool	52	22.4
• Private pool	30	12.9
• River / stream	14	6.0
• Lake / pond / reservoir	13	5.6
• Dam	6	2.6
• Other	10	4.3
• No exposure	78	33.6

*exposure categories will not add up to 100% as people indicated multiple exposures.

Notable Foodborne Outbreaks

Salmonella Typhimurium MLVA 3-26-13-8-523

A PHU received a report of a person who was hospitalised with gastroenteritis and subsequently tested PCR positive to *Salmonella*. This person reported others who ate a meal with him at a restaurant on 29 October 2015 also experienced symptoms. The PHU initiated a cohort study and found 40/69 attendees reported illness after the dinner. Onsets 29 October 2015 to 4 November 2015. Seven diners submitted stool samples which were positive for *Salmonella Typhimurium* (MLVA 3-26-13-8-523). The meal was a six course degustation and consumption rates were high for most items, however a significant risk ratio was found for one item, a coriander mayonnaise (RR=3.58, CI:1.04-12.26, p<0.001). This mayonnaise was made with raw egg and on inspection found to be made with insufficient acidifying ingredient to neutralise any *Salmonella* present. Environmental and food samples were taken by the NSWFA and all were negative for pathogens. However, the food samples was stock received 12 days after the dinner. The cause of the outbreak was likely the use of contaminated raw egg dishes. The restaurant has been advised to cease serving raw egg foods.

Salmonella Typhimurium MLVA 3-12-11-14-523

A cluster of seven *Salmonella Typhimurium* MLVA 3-12-11-14-523 across several PHUs with collection dates in September 2015 was investigated. Five cases were found to be linked to the same food court in Sydney City, with three mentioning various salad items from the same salad bar. The salad bar was inspected by the NSWFA and found to be making raw egg mayonnaise. The eggs used were a brand that had been implicated in previous outbreaks of salmonella with the same MLVA. NSWFA issued a prohibition order for the use of raw egg mayonnaise.

Figure 4. Proportion of *Salmonella* serovars, quarter 4, 2015 (N=998)

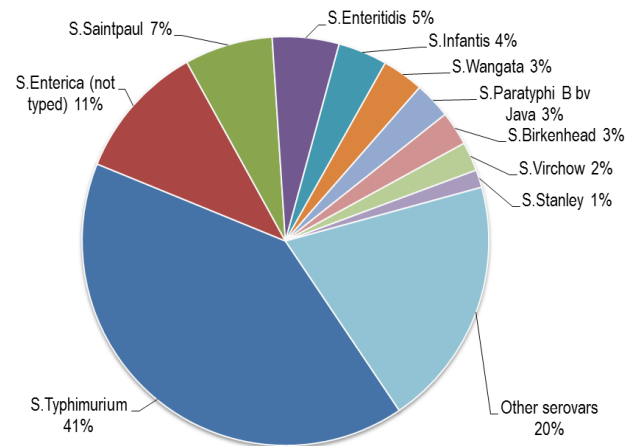


Table 3. Top eleven *Salmonella Typhimurium* MLVAs, quarter 4, 2015

MLVA	Notifications	% of STm total
3-17-9-11-523	28	7%
3-12-11-14-523	24	6%
3-12-12-9-523	21	5%
3-24-13-10-523	20	5%
3-26-13-8-523	18	5%
3-9-12-11-496	11	3%
3-14-10-8-523	10	3%
3-10-8-9-523	8	2%
3-26-17-10-523	7	2%
3-10-14-11-496	6	2%
3-9-7-12-523	6	2%
Top 11 total	159	41%

Table 6: Foodborne and Suspected foodborne outbreaks for quarter 4, 2015

PHU ID	Month	Setting	Agent responsible	No. ill	Lab confirmed	No. Hospitalised	Evidence	Responsible vehicles	Contributing factors
NSW201502	Oct	Take away	<i>Salmonella</i> Typhimurium MLVA 3-12-11-14-523	5	5	0	D	Raw egg mayo	Undercooked egg products
WS201502	Oct	Private residence	Scombroid poisoning	2	0	2	D	Fish (unknown type)	poor handling of degradable product
WS47768	Nov	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-26-13-8-523	40	7	2	D	Products containing raw eggs	Undercooked egg products
SES201503	Nov	Private residence	<i>Salmonella</i> Typhimurium MLVA 3-9-7-12-523	3	3	2	D	Unknown	unknown
CC47901	Nov	Restaurant	Unknown	10	0	0	D	Unknown	Food handler contamination
NS47994	Nov	Restaurant	Unknown	4	0	0	D	Oysters	unknown
NBM201501	Nov	Restaurant	Unknown	30	0	0	D	Unknown	unknown
HUN0494	Nov	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-26-17-10-523	4	4	1	D	Unknown	Unknown
CC48110	Dec	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-10-9-9-523	3	1	0	D	Unknown	unknown
SYD48126	Dec	Restaurant	Unknown	5	0	0	D	Unknown	unknown
NS48331	Dec	Restaurant	<i>Campylobacter</i>	2	1	1	D	Chicken liver pate	Undercooked contaminated meat
SNSW201501	Dec	Restaurant	<i>Salmonella</i> Typhimurium MLVA 3-26-13-8-523	2	2	0	D	Battered fish	unknown
SES48218	Dec	Take away	Unknown	2	0	0	D	Chicken curry	unknown
Outbreaks of gastrointestinal illness without enough evidence to classify the cause									
IS47323	Oct	Restaurant	Unknown	5	0	0	D	Unknown	Unknown
WS47496	Oct	Restaurant	Unknown	13	0	0	D	Unknown	Unknown
WNSW201501	Nov	Restaurant	Unknown	5	0	0	D	Unknown	Unknown
NC48024	Nov	Restaurant	Unknown	5	0	0	D	Unknown	Unknown
LIV48104	Nov	Restaurant	Unknown	5	0	0	D	Unknown	Unknown
Outbreaks of gastrointestinal illness that appear viral without good evidence of food origin									
MS47259	Oct	Restaurant	Unknown	14	0	0	NA	Unknown	Unknown

PHU ID	Month	Setting	Agent responsible	No. ill	Lab confirmed	No. Hospitalised	Evidence	Responsible vehicles	Contributing factors
IS47262	Oct	Restaurant	Norovirus	39	1	0	NA	Unknown	Unknown
LIS48304	Dec	Restaurant	Unknown	22	0	0	NA	Unknown	Unknown

Month of outbreak is the month of onset of Fourth 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: **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.

Gastroenteritis Outbreaks in Institutions

From 1 July, 2015 to 40 September, 2015, a total of 120 outbreaks of gastrointestinal illness in institutions were reported in NSW, affecting at least 2,057 people. This represents a decrease of 12% compared to the five year mean (n=137), for the same quarter and an increase of 5% compared to the mean number of people affected as a result of the outbreaks (n=1,966).

Of the 120 outbreaks of viral gastroenteritis in institutions reported in NSW, 75 (63%) occurred in child care centres, 32 (27%) in aged care facilities, 7 (6%) in hospitals and 6 (5%) in other facilities (figure 6).

Overall, 14% of staff members and 17% of non-staff became sick during gastroenteritis outbreaks in quarter 4. The highest attack rate for gastrointestinal disease for staff was other facility staff (25%) and for non-staff were patients on hospital wards (33%). On average outbreaks lasted 9 days; it was shortest in hospitals (4 days) and longest in other facilities (17 days) (table 7).

One or more stool samples were collected in 66 (55%) of the outbreaks. Norovirus was identified from 19 of these outbreaks and rotavirus was identified in 7. The results of the other samples were negative, or not reported (table 8).

Figure 6: Number of reported outbreaks of gastrointestinal illness in institutions; quarter 4, 2015 and average of the previous 5 years by month and facility type

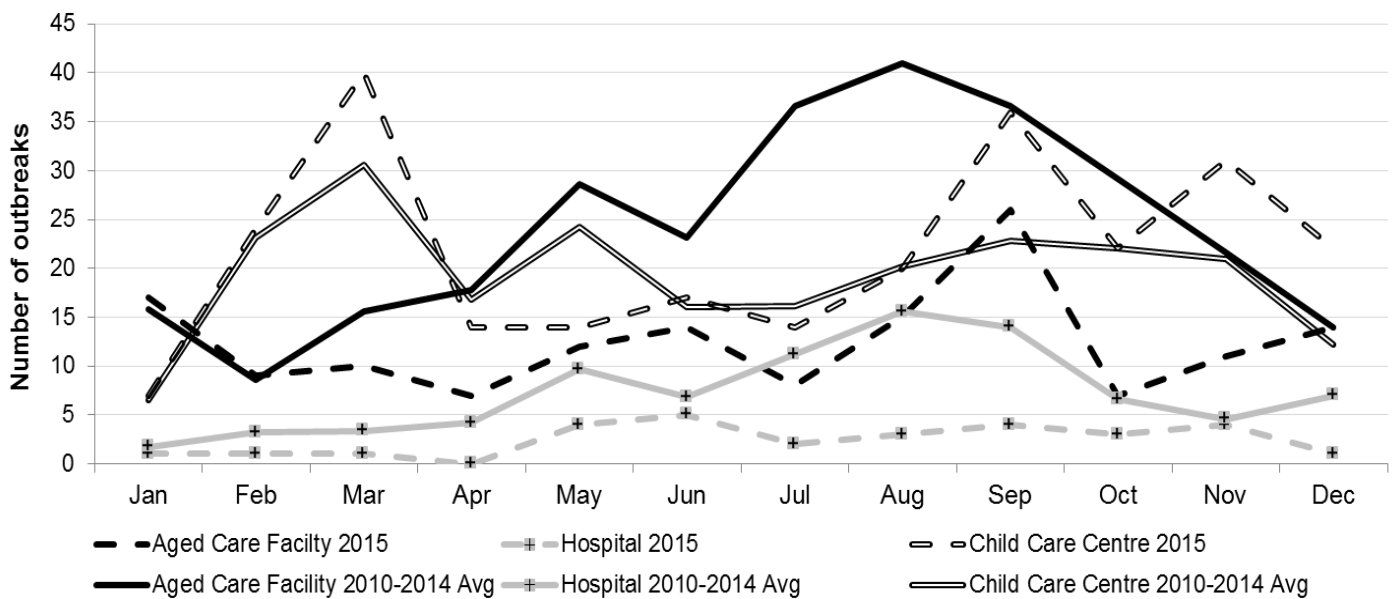


Table 7: Characteristics of outbreaks of gastrointestinal illness in institutions reported to NSW in quarter 4, 2015

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	32	165: 7%	564: 23%	6	31: 97%	13:norovirus & 1:rotavirus
CCC	75	184: 17%	851: 13%	10	25: 33%	2:norovirus & 6:rotavirus
Hospital	7	35: 7%	56: 33%	4	7: 100%	4:norovirus
Other	6	29: 25%	173: 21%	17	3: 50%	0
Total	120	413: 14%	1,644: 17%	9	66: 55%	26

(ACF= aged care facility, CCC= child care centre, Other= Disability care facility, School and Military facility)

Table 8: Outbreaks of gastroenteritis in institutions reported to NSW for quarter 4, 2015 by Local Health District*

Facility type	Q4 2015	HNE	IS	M	NBM	NNSW	NS	SES	SNSW	SWS	Syd	WNSW	WS	NSW
ACF	No. of outbreaks	5	6	2	3	1	4	2	0	3	1	1	4	32
	Staff affected	43	35	17	10	19	19	3	0	2	1	5	11	165
	Non-staff affectedd	66	114	52	51	48	86	16	0	57	14	12	48	564
CCC	No. of outbreaks	11	8	12	7	0	4	2	2	6	9	1	13	75
	Staff affected	25	18	22	20	0	8	7	7	18	21	14	24	184
	Non-staff affectedd	86	97	153	43	0	53	28	45	56	101	17	172	851
Hospital	No. of outbreaks	0	0	0	1	1	0	1	0	0	1	1	2	7
	Staff affected	0	0	0	0	11	0	9	0	0	1	3	11	35
	Non-staff affectedd	0	0	0	4	8	0	13	0	0	11	6	14	56
Other	No. of outbreaks	0	0	1	0	0	1	0	0	0	1	0	3	6
	Staff affected	0	0	0	0	0	6	0	0	0	8	0	15	29
	Non-staff affectd	0	0	14	0	0	13	0	0	0	84	0	62	173

*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).